

ABSOLUTE ABSTINENCE? A MIXED METHODS STUDY OF  
ALCOHOL USE DURING PREGNANCY AMONG PARENTS AND  
MIDWIVES IN ENGLAND AND SWEDEN

LISA ANGELICA SCHÖLIN

A thesis submitted in partial fulfilment of the requirements of Liverpool John  
Moores University for the degree of Doctor of Philosophy

This research programme was carried out in collaboration with Örebro  
University, Sweden

December 2016

## **Abstract**

This thesis explores alcohol use during pregnancy in relation to guidance, attitudes and social norms. The research was conducted in England, where at the time of the study pregnant women were advised to abstain but limit their intake if they chose to drink, and Sweden, where complete abstinence was endorsed. Alcohol use during pregnancy can have harmful effects on the developing foetus, yet there is an unsettled debate as to whether a safe limit exists. In some countries more than half of pregnant women report drinking and while factors such as age, socio-economic status, and pre-pregnancy drinking habits may influence continued drinking, there is a lack of research addressing wider socio-cultural factors, drinking occasions, and partner drinking. A greater understanding of why women drink during pregnancy can inform policy and practice to prevent alcohol-related birth defects. A mixed methods research study was undertaken, comprised of a survey, completed by 347 parents, and interviews with 44 parents and 16 midwives, aimed at exploring cross-cultural differences in prenatal alcohol use from a socio-ecological perspective. Data from the three strands were synthesised and contrasted using triangulation and mapped into meta-themes. The findings showed that English women were significantly more likely to drink during pregnancy than Swedish women. Partner drinking did not appear to influence women's decisions around alcohol. Moral values underpinned the discourses of whether prenatal alcohol is acceptable; Swedish parents advocated for the rights of the foetus whilst English parents weighed that right against the woman's right to autonomy. Consistent communication of an abstinence message was evident in Sweden, whereas English parents' experiences varied, some even reported conflicting advice. In contrast, all midwives advised pregnant women to abstain. The findings suggest that clear communication of an abstinence message may contribute to shared social norms against drinking during pregnancy. However, a lack of clear evidence as to the effects of low level drinking was interpreted differently in the two countries.

## **Presentations and Publications**

### **Conference presentations**

Schölin L. "Advising pregnant women about alcohol – experiences from cross-cultural research". Scottish Health Action on Alcohol Problems (SHAAP) Occasional Seminars, 5th April 2016, Edinburgh (oral presentation)

Schölin L. "Parents' and midwives' views on pregnancy drinking guidelines in England and Sweden". Alcohol Research UK's Postgraduate Symposium 15th March 2016, Birmingham (oral presentation)

Schölin L. "The influence of risk perception and social environment on drinking during pregnancy". UKCTAS and British Research Council's Researcher link workshop, 22nd February 2016, Montevideo (oral presentation)

Schölin L. "Perceptions of advice provided to parents in antenatal care". Alcohol Concern Annual Alcohol Conference, 21st September 2015, Cardiff (oral plenary presentation)

Schölin L. "A qualitative study of new parents' and midwives' views on alcohol advice during pregnancy in England and Sweden". Festival of Public Health conference at University of Manchester, 2nd of July 2015, Manchester (oral presentation)

Schölin L, Hughes K, Bellis M, Eriksson C & Porcellato, L. "I think we should all be singing from the same hymn sheet – English and Swedish Midwives' views on giving alcohol advice". Faculty of Education, Health and Community's conference, 24th of June 2015, Liverpool (poster presentation)

Schölin L, Hughes K, Bellis M, Eriksson C & Porcellato, L. "Everyone knows you shouldn't drink when you're pregnant – A comparative study of experiences of alcohol advice during pregnancy among new parents in England and Sweden" Third European Conference on FASD, 20-22 October, 2014, Rome (poster presentation)

Schölin L. "A Cross-Cultural Exploration of Alcohol Use during pregnancy". Cumberland Doctoral Conference 26th-29th of August 2014, Windsor (oral presentation, awarded attendance as representative for Liverpool John Moores University)

Schölin L, Hughes K, Bellis M & Porcellato, L. "A study of new parents' knowledge, attitudes and practice of alcohol use and alcohol advice during pregnancy in Merseyside". Festival of Public Health, 3rd of July 2014, Manchester (poster presentation, awarded best poster award)

Schölin L. "Alcohol and Pregnancy - Predictors of Alcohol Use during pregnancy and Perceptions of Advice Provided in Antenatal Care Settings in Merseyside and Örebro County". SSA Postgraduate Symposium, 21st July 2014, Oxford (oral presentation)

Schölin L, Hughes K, Bellis M, Eriksson C & Porcellato, L. “A study of new parents’ knowledge, attitudes and practice of alcohol use and alcohol advice during pregnancy in Merseyside” Faculty of Education, Health and Community’s conference, 27th of June 2014, Liverpool (poster presentation, runner up)

Schölin L. “Knowledge, attitudes and practice of alcohol use during pregnancy and alcohol advice in antenatal care – a qualitative study among new parents”. Alcohol Research UK’s Postgraduate Symposium 17th of March 2014, London (oral presentation)

### **Publications**

Schölin, L. (2015). What can we learn from cross-cultural research on alcohol use during pregnancy? Fetal Alcohol Forum, Issue 13, June 2015, p. 51. Available at: <http://www.nofas-uk.org/PDF/FAF%2013%20%20final.pdf>

## Acknowledgements

I would like to thank a number of people who have made this thesis possible to start, produce, and finally finish. First of all, I would like to thank the maternity and child health services, who kindly granted me access to recruit participants and I specifically want to thank the midwives who took time for me to interview them about their experience. I also want to thank all parents who met with me to share their stories. I want to thank my parents who let me go my own way and make my own (sometimes questionable) decisions, but always support me along the way, and my sister who never fails to give me honest advice and full support when I need it. I also want to thank Niel, for endless encouragement and support through rough times. And to Anna, Linda, Maria, Mia, and Sofia, who all have been part of this journey in one way or another and the most wonderful friends anyone could ask for.

I also want to thank the academics who taught me during my time at university and from early days inspired me to go into research. Robert Larsson and Charlotta Hellström at Mälardalen University, Metin Özdemir at Örebro University, and Deborah Roberts at University of Chester. And especially Mzwandile Mabhala at University of Chester, who besides being a great teacher is an inspiring and kind mentor in the world of public health. Thank you to Conan Leavey and Jim McVeigh at the Centre for Public Health for helping grow as a person as well as an academic, and for (often) making me laugh. Completing this work would have been difficult without fellow students in the ‘PhD Room’, who were there to listen on days when everything felt impossible.

Several people kindly gave me their unlimited support at different stages of this thesis. Thank you to Nathan Critchlow, Suzy Hargreaves, Jennifer Germain, Ralph Pawling, and Kate Fleming for help, support and coffee!

Finally, I want to thank my supervisory team, who patiently guided me from the beginning of the research through to the end. To Michela Morleo, Mark Bellis, and Karen Hughes for all your support and advice. A special thank you to Charli Eriksson at Örebro University for making this research possible in Sweden and for immense support throughout the process. And finally to Lorna Porcellato; my guiding light! Thank you for feedback and support (day and night), for being an admirable academic, and for giving me continuous encouragement which made this work possible to finish.

<b>Contents</b>	
<b>Abstract.....</b>	<b>I</b>
<b>Presentations and Publications .....</b>	<b>II</b>
<b>Acknowledgements .....</b>	<b>IV</b>
<b>Contents .....</b>	<b>V</b>
<b>List of figures.....</b>	<b>VIII</b>
<b>List of tables.....</b>	<b>IX</b>
<b>Abbreviations .....</b>	<b>X</b>
<b>Chapter 1 - Introduction .....</b>	<b>1</b>
<b>1.1 Introduction .....</b>	<b>1</b>
<b>1.2 Aim of the study.....</b>	<b>3</b>
<b>1.3 Rationale for the study .....</b>	<b>3</b>
<b>1.4 Research context.....</b>	<b>8</b>
<b>1.5 Cross-cultural research.....</b>	<b>10</b>
<b>1.6 Research approach and researcher position .....</b>	<b>11</b>
<b>1.7 Contribution to research.....</b>	<b>13</b>
<b>1.8 Overview of thesis.....</b>	<b>13</b>
<b>Chapter 2: A literature review of prenatal alcohol use from a public health perspective .....</b>	<b>15</b>
<b>2.1 Introduction .....</b>	<b>15</b>
<b>2.2 Alcohol and gender.....</b>	<b>16</b>
2.2.1 Women's drinking in context.....	16
2.2.2 Alcohol in Europe, England, and Sweden.....	18
2.2.3 Alcohol-related harm .....	20
<b>2.3 Risks associated with prenatal alcohol exposure .....</b>	<b>22</b>
2.3.1 The effects of alcohol on reproduction and pregnancy .....	22
2.3.2 Foetal Alcohol Spectrum Disorders .....	24
<b>2.4 Alcohol use before and during pregnancy.....</b>	<b>26</b>
2.4.1 Drinking among non-pregnant women .....	26
2.4.2 Prevalence of prenatal alcohol use .....	28
<b>2.5 Influences on alcohol use during pregnancy .....</b>	<b>31</b>
2.5.1 Age and socioeconomic status .....	31
2.5.2 Pre-pregnancy drinking habits .....	33
2.5.3 Partner .....	33
2.5.4 Attitudes and knowledge.....	35
2.5.5 Drinking guidelines.....	36
<b>2.6 Alcohol policy.....</b>	<b>37</b>
2.6.1 Global and national policy .....	37
2.6.2 Drinking guidelines.....	39
<b>2.7 Prevention of maternal alcohol use.....</b>	<b>42</b>
2.7.1 Maternity health services and alcohol prevention.....	42
2.7.2 Advice to partners .....	43
2.7.3 Screening for alcohol use during pregnancy .....	44
2.7.4 Interventions to prevent alcohol-related birth defects.....	46

<b>2.8 Conceptual framework .....</b>	<b>49</b>
2.8.1 Teachable Moments .....	50
2.8.2 The Health Belief Model.....	52
2.8.3 The Socio-ecological model of health.....	54
2.8.4 Utilisation of the conceptual framework.....	55
<b>2.9 Summary .....</b>	<b>56</b>
<b>Chapter 3 - Methodology.....</b>	<b>57</b>
3.1 Introduction.....	57
3.2 Aim and research questions .....	57
<b>3.3 Mixed Methods Research (MMR).....</b>	<b>59</b>
3.3.1 Pragmatism.....	59
3.3.2 The choice of a MMR design .....	59
3.3.3 Parallel convergent design .....	60
<b>3.4 Quantitative phase.....</b>	<b>63</b>
3.4.1 Aim and objectives.....	63
3.4.2 Pilot study .....	64
3.4.3 Sampling strategy .....	65
3.4.4 Questionnaires.....	66
3.4.5 Validity and reliability .....	69
3.4.6 Procedure and participants .....	70
3.4.7 Data analysis .....	74
<b>3.5 Qualitative phase .....</b>	<b>76</b>
3.5.1 Study II.....	76
3.5.2 Study III .....	82
3.5.3 Trustworthiness .....	85
<b>3.6 Translation of research tools and results .....</b>	<b>87</b>
<b>3.7 Ethics .....</b>	<b>90</b>
<b>3.8 Limitations .....</b>	<b>91</b>
<b>3.9 Chapter summary.....</b>	<b>92</b>
<b>Chapter 4: A cross-sectional survey of the prevalence and factors associated with alcohol use during pregnancy .....</b>	<b>93</b>
<b>4.1 Introduction .....</b>	<b>93</b>
<b>4.2 Aim and objectives .....</b>	<b>93</b>
<b>4.3 Results.....</b>	<b>94</b>
4.3.1 Sample characteristics .....	94
4.3.2 Women's alcohol use before pregnancy .....	98
4.3.3 Demographic characteristics .....	99
4.3.4 Advice and attitudes towards drinking.....	100
4.3.5 Relationship satisfaction and partner drinking.....	102
4.3.6 Determinants of any alcohol use during pregnancy .....	102
<b>4.4 Results - Partners .....</b>	<b>108</b>
<b>4.5 Discussion .....</b>	<b>110</b>
4.5.1 Strengths and limitations.....	115
<b>4.6 Conclusions .....</b>	<b>117</b>
<b>Chapter 5: Exploring parents' views on alcohol use and alcohol advice during pregnancy.....</b>	<b>119</b>
<b>5.1 Introduction .....</b>	<b>119</b>
<b>5.2 Aims and objectives.....</b>	<b>120</b>

<b>5.3 Perceptions around drinking during pregnancy, guidance and advice by women and partners .....</b>	<b>120</b>
5.3.1 What is ‘drinking’? .....	120
5.3.2 What is risk?.....	122
5.3.3 How do women change their alcohol habits change when they get pregnant? .....	128
5.3.4 What are the perceptions about right and wrong behaviour during pregnancy? .....	137
5.3.5 Perceptions of alcohol advice.....	140
<b>5.4 Discussion .....</b>	<b>145</b>
5.4.1 Limitations .....	155
<b>5.5 Conclusions .....</b>	<b>156</b>
<b>Chapter 6: How do midwives address and prevent alcohol use during pregnancy? .</b>	<b>158</b>
<b>6.1 Introduction .....</b>	<b>158</b>
<b>6.2 Aims and objectives.....</b>	<b>158</b>
<b>6.3 Results.....</b>	<b>159</b>
6.3.1 Pregnant women’s lifestyle .....	159
6.3.2 “It’s my job to talk about alcohol” .....	164
6.3.3 How did midwives approach alcohol in antenatal care? .....	169
6.3.4 Health Promotion and Public Health in antenatal care.....	176
<b>6.4 Discussion .....</b>	<b>181</b>
6.4.1 Limitations .....	190
<b>6.5 Conclusions .....</b>	<b>191</b>
<b>Chapter 7 – Mixed methods synthesis of findings and discussion.....</b>	<b>193</b>
<b>7.1 Introduction .....</b>	<b>193</b>
<b>7.2 Triangulation of results.....</b>	<b>193</b>
<b>7.3 Synthesised results.....</b>	<b>201</b>
7.3.1 Cultural differences .....	202
7.3.2 Contexts of drinking during pregnancy.....	203
7.3.3 Provision of guidance and advice.....	205
<b>7.4 General discussion .....</b>	<b>206</b>
7.4.1 How do we interpret statistics on women’s drinking? - Methodological issues .....	207
7.4.2 Alcohol, risk, and culture .....	209
<b>7.5 Strengths and limitations .....</b>	<b>211</b>
<b>7.6 Conclusions .....</b>	<b>212</b>
<b>7.7 Areas for future research.....</b>	<b>214</b>
<b>7.8 Researcher reflections .....</b>	<b>215</b>
<b>7.9 Recommendations.....</b>	<b>216</b>
<b>References .....</b>	<b>219</b>
<b>Appendix A - Brief information for online survey .....</b>	<b>249</b>
<b>Appendix B - Participant information sheet, cross-sectional survey .....</b>	<b>250</b>
<b>Appendix C - Questionnaire to mothers .....</b>	<b>252</b>
<b>Appendix D - Questionnaire to partners .....</b>	<b>262</b>
<b>Appendix E – Recruitment letter, interview study with parents.....</b>	<b>269</b>
<b>Appendix F – Participant information sheet, interview study with parents .....</b>	<b>270</b>
<b>Appendix G – Interview schedule, women.....</b>	<b>272</b>



<b>Appendix H – Interview guide, partners .....</b>	<b>274</b>
<b>Appendix I – Recruitment letter, interview study with midwives.....</b>	<b>276</b>
<b>Appendix J – Participant information sheet, interview study with midwives.....</b>	<b>278</b>
<b>Appendix K – Interview schedule, midwives.....</b>	<b>280</b>
<b>Appendix L – Consent form, interview studies .....</b>	<b>282</b>
<b>Appendix M – Alcohol and pregnancy pamphlets.....</b>	<b>283</b>
<b>Appendix N – Ethical approval letters.....</b>	<b>284</b>
<b>Appendix O – Additional tables.....</b>	<b>292</b>

## List of figures

Figure 1. Location of the two research sites .....	8
Figure 2. Simple framework guiding the development of the study.....	50
Figure 3. Constructs of the Health Belief Model .....	53
Figure 4. Socio-Ecological model of alcohol use during pregnancy .....	55
Figure 5. Overview of research project.....	58
Figure 6. Implementation of the mixed-methods research design .....	61
Figure 7. Thematic network map of emerging themes in Study II .....	81
Figure 8. Thematic network map of emerging themes in Study III.....	85
Figure 9. Back-translation validation process.....	89
Figure 10. Drinking trajectories throughout pregnancy .....	97
Figure 11. Women's frequency of drinking before pregnancy.....	98
Figure 12. Partners' frequency of drinking before and during pregnancy.....	108
Figure 13. Identified themes and meta-themes across all strands of the study.....	199

## List of tables

Table 1. Grams of pure alcohol in standard drinks/units in European countries .....	6
Table 2. Alcohol use during pregnancy across different countries.....	30
Table 3. Overview of the research project .....	62
Table 4. Drinks measures included in the questionnaires, divided by country.....	67
Table 5. Participant characteristics for Study II.....	73
Table 6. Participant characteristics for Study II.....	80
Table 7. Participant characteristics for Study III .....	84
Table 8. Strategies to ensure trustworthiness in qualitative research .....	87
Table 9. Socio-demographic characteristics of women .....	95
Table 10. Any alcohol use during pregnancy by country .....	96
Table 11. Advice regarding alcohol use during pregnancy by drinking status.....	100
Table 12. Is there a safe limit of drinking by drinking status .....	101
Table 13. Attitudes towards prenatal alcohol use and advice by drinking status .....	101
Table 14. Frequency of partner's drinking before and during pregnancy by drinking status .....	102
Table 15. Univariable logistic regression for any alcohol use during pregnancy.....	104
Table 16. Multivariable logistic regression of any alcohol use during pregnancy .....	106
Table 17. Socio-demographic characteristics of partners .....	107
Table 18. Theme I: Knowledge and conceptualisation of risk .....	120
Table 19. Theme II: Changes in alcohol habits during pregnancy .....	126
Table 20. Theme III: Moral discourses .....	135
Table 21. Theme IV: Perceptions of alcohol advice.....	138
Table 22. Theme I: Pregnant women's lifestyle .....	157
Table 23. Theme II: The midwifery role.....	162
Table 24. Theme III: Antenatal care practices .....	167
Table 25. Theme IV: Promoting healthy lifestyle in pregnant women.....	174
Table 26. Triangulation protocol .....	192
Table 27. Data triangulation matrix .....	194

## Abbreviations

ABV	alcohol by volume
AEP	alcohol-exposed pregnancy
AOR	adjusted odds ratio
ARBD	alcohol-related birth defects
ARND	alcohol-related neurodevelopmental disorder
AUDIT	Alcohol Use Disorders Identification Test
BI	brief interventions
CNS	central nervous system
CMO	Chief Medical Officer (UK)
CI	confidence interval
DH	Department of Health (UK)
ESPAD	European School Study Project on Alcohol and Other Drugs
FAS	Foetal Alcohol Syndrome
FASD	Foetal Alcohol Spectrum Disorders
GP	general practice
HED	heavy episodic drinking
HR	hazard ratio
ICD-10	International Classification of Disease (revision 10)
IFS	Infant Feeding Survey
IUGR	intrauterine growth restriction
LBW	low Birth Weight
MMR	Mixed Methods Research
Mdn	median
NBHW	National Board of Health and Welfare (Sweden)
NHMRC	National Health and Medical Research Council (Australia)
NHS	National Health Services (UK)
NICE	National Institute for Health and Care Excellence
OR	odds ratio
pFAS	partial Foetal Alcohol Syndrome
PTB	preterm birth
RCT	randomised control trial
RR	relative risk
SD	standard deviation
SEK	Swedish Krona
SGA	small for gestational age
STI	sexually transmitted infection
TLFB	timeline followback
USA	United States of America
WHO	World Health Organization

# **Chapter 1 - Introduction**

## **1.1 Introduction**

Alcohol consumption is more common among men, who suffer more alcohol-related harm than women (WHO, 2014a). Yet, over time social structures have changed how much, when, and how women drink alcohol, as well as society's views on women's drinking (Berridge, 2013; Plant, 1997; 2008). A particular issue associated with women's use, and abuse, of alcohol is the harmful effects it can have if consumed during pregnancy (Kesmodel, 2016). Due to the risks for negative outcomes on the developing baby, many countries recommend pregnant women to abstain completely from consuming alcohol. However, research has yet to established clear links between low levels of drinking and negative outcomes on pregnancy or child health and development (Falgreen Eriksen et al., 2012; Flak et al., 2013; O'Keeffe et al., 2014; Plant et al., 1986; Skagerbø et al., 2012;). Sweden is an example of a country in which pregnant women are advised to avoid all alcohol throughout the entire pregnancy (NBHW, 2014). In the UK in January 2016, the Chief Medical Officers (CMO) published their recommendations for changes in the current drinking guidelines. According to the expert group, which reviewed the available evidence, the safest choice for pregnant women is to completely abstain from alcohol (Department of Health, 2015). This stricter emphasis on no alcohol during pregnancy is a move away from the 'low risk' guidelines, stated in the 2008 National Institute for Health and Clinical Excellence (NICE) guidelines (NICE, 2008). The move towards advising complete abstinence within official policy has been evident for example in the Nordic countries (Leppo & Hecksher, 2011) and Australia (NHMRC, 2009). The development of abstinence policy signifies the importance drinking during pregnancy has on the public health agenda.

This mixed methods study adopted a cross-cultural design to explore attitudes towards and the use of alcohol during pregnancy as well as perceptions of drinking guidelines in two European countries. The overall aim was to gain a greater understanding of alcohol use during pregnancy, by comparing and contrasting attitudes and practices through a cross-cultural public health lens. This study sought to compare and contrast these issues in England and Sweden, based on the differences in official policy that were in place at the time of the study. The new recommendations published by the CMOs in 2016 however had no impact on the outcomes of the current study as all data were collected prior to the publication of the recommendations. England and Sweden made an interesting case for

comparisons, as the prevalence of reported prenatal alcohol use in England is much higher than in Sweden. This research included a survey of 347 parents and interviews with 44 parents and 16 midwives in the two countries, to explore the similarities and differences in prevalence, attitudes, and prevention of alcohol use during pregnancy. The cross-cultural design allowed for taking wider socio-cultural factors into account, and addressing issues that previously have not been raised, such as underlying moral values rooted in different cultures.

This research makes a significant contribution to the existing literature. Specifically, this thesis shows the importance of the wider social environment of women's drinking before and during pregnancy. Furthermore, it shows the moral underpinnings of views of rights regarding the rights of the foetus versus the rights of the woman. These views appear to encompass the understanding and attitudes of prenatal alcohol use, which may explain why previous research has indicated such wide differences in prevalence of maternal alcohol use. In the light of the new proposed CMOs' guidelines, understanding factors that can support women in making informed decisions, such as clear information and support from partner and wider family, for a healthy pregnancy is essential. The use of the conceptual models in this thesis, namely teachable moments (McBride, Emmons & Lipkus, 2003), the Health Belief Model (Champion & Sugg Skinner, 2008), and the socioecological model of health (Bronfenbrenner, 1979; Sallis, Owen & Fisher, 2008) create a wider public health view on the issue. By using these frameworks, we can learn more about how to address alcohol use during pregnancy from a population approach as it highlights areas where maternity services can further enhance their dialogues with expectant parents. This needs to include discussions of how alcohol may have fit into parents' lives prior to the pregnancy, and how that may influence their decisions during pregnancy. This research also indicates areas for future research and how preparation for parenthood modifies drinking behaviour but also fits into a wider social conceptualisation of alcohol use.

In this chapter I will introduce the background to the research and the context in which it was conducted. I will then present the specific research questions guiding the study. The chapter continues with the approach taken to the research and my position as a researcher, the rationale for the study and contributions to the literature. Finally, I present the outline of the thesis.

## **1.2 Aim of the study**

The aim of this study was to increase the understanding of alcohol use during pregnancy. Specifically, the study aimed at exploring maternal drinking during pregnancy through a cross-cultural lens, in relation to attitudes and practices of prenatal alcohol use in England and Sweden. The specific research questions guiding the research were:

- What is the prevalence of retrospective self-reported alcohol use during pregnancy in England and Sweden?
- What factors are associated with continued alcohol use?
- What are parents' attitudes and practices of alcohol use during pregnancy in England and Sweden?
- What are midwives' perceptions of pregnancy drinking guidelines, women's alcohol use during pregnancy in England and Sweden?
- What are midwives' practices of providing alcohol advice in antenatal care?

## **1.3 Rationale for the study**

Despite recommendations that abstinence is the most prudent option for pregnant women, due to risks of alcohol-related birth defects and pregnancy complications (O'Leary, 2004; Riley, Infante & Warren, 2011), some women continue to drink during pregnancy. National data from England has shown that 41% of women drank in a recent pregnancy (McAndrew et al., 2012), compared to Sweden, where cross-sectional data has indicated that 6.5% of pregnant women had consumed alcohol (Skagerström et al., 2013). Continued alcohol use during pregnancy does not however happen in isolation, but fits into a wider context of women's alcohol use. Higher levels of drinking before a pregnancy is a significant predictor for drinking during pregnancy (Anderson et al., 2014a; Chang et al., 2006; Mallard et al., 2013; Skagerström, Chang & Nilsen, 2011). From a health promotion perspective therefore, it is important to understand women's decision making around health behaviours during pregnancy. Asking pregnant women about their past and current alcohol use is therefore important to identify women who may need interventions to stop or reduce their intake to decrease the potential risk to the baby. Even so, there is a need for an understanding of why women choose to abstain or drink, in order to address the issue appropriately in antenatal care.

Although many women go through a pregnancy with a partner, there is limited attention given to the partner's drinking. Having a heavy drinking partner can increase the likelihood of women drinking during pregnancy (Bakhireva et al., 2011). The limited literature on the topic is however not clear. While decisions about drinking have been found not to be determined by partner drinking (Crawford-Williams et al., 2015b), other research has indicated that a partner's accepting attitude towards alcohol is associated with greater likelihood of drinking (van der Wulp, Hoving & de Vries, 2015). Partners are not always included in discussions around alcohol in antenatal care (van der Wulp, Hoving & de Vries, 2013), but evidence suggests that interventions to prevent or reduce alcohol use during pregnancy are effective when a partner is involved (Chang et al., 2005) or can encourage partners to offer the woman non-alcoholic options (Högberg, Spak & Larsson, 2015). There is a gap in the literature for a wider perspective on the importance and influence of the partner, which may be important if intervention results can be enhanced by involving the partner.

Attitudes towards alcohol use during pregnancy are important when considering how to frame health information and guidance about alcohol. The literature has shown associations between knowledge of the potential effects resulting from prenatal alcohol exposure (Peadon et al., 2010) and the perceptions women may hold about safe types of alcohol or safe periods of drinking (Elek et al., 2013; Loxton et al., 2013). Furthermore, pregnant women who abstain from alcohol are more likely to believe that women should abstain during pregnancy (Kesmodel & Schiøler Kesmodel, 2002), which suggests that attitudes may shape behaviour. Only a few studies have however explored women's as well as partners' attitudes (Crawford-Williams et al., 2015b; van der Wulp, Hoving & de Vries, 2013), and the literature lacks cross-cultural comparisons that can unpick how attitudes may differ between countries.

One way of contrasting cross-cultural differences is within the context of guidance on alcohol use during pregnancy. At the time this research was undertaken, the advice to pregnant women in England followed a 'low-risk' approach, suggesting that women could drink small amounts of alcohol (Box 1) (NICE, 2008). The recommendation to Swedish women at the time of the study was complete abstinence (NBHW, 2011, 2014).



## **Box 1. Antenatal care for uncomplicated pregnancies – NICE Guidelines [CG62]**

### **Alcohol consumption during pregnancy**

Pregnant women and women planning a pregnancy should be advised to avoid drinking alcohol in the first 3 months of pregnancy if possible because it may be associated with an increased risk of miscarriage.

If women choose to drink alcohol during pregnancy they should be advised to drink no more than 1 to 2 UK units once or twice a week (1 unit equals half a pint of ordinary strength lager or beer, or one shot [25 ml] of spirits. One small [125 ml] glass of wine is equal to 1.5 UK units). Although there is uncertainty regarding a safe level of alcohol consumption during pregnancy, at this low level there is no evidence of harm to the unborn baby.

Women should be informed that getting drunk or binge drinking during pregnancy (defined as more than 5 standard drinks or 7.5 UK units on a single occasion) may be harmful to the unborn baby.

In general, when considering drinking guidelines, it is important to keep in mind that for the general population they vary between countries, but also that the measure of a unit or standard drink varies. For clarity, table 1 provides an overview of the sizes of standard drinks in pure grams of alcohol across European countries (Scafato et al., 2016), Australia (NHMRC, 2009), New Zealand (Ministry of Health, 2016) and USA (U.S. Department of Health and Human Services and U.S. Department of Agriculture, 2015) as studies from these countries are mentioned throughout this thesis.

**Table 1. Grams of pure alcohol in standard drinks/units in European countries, Australia, New Zealand and USA.**

<b>Country</b>	<b>Grams of pure alcohol in one standard drink/unit</b>
Austria	20
Australia	10
Bulgaria	13
Croatia	10
Czech Republic	16
Denmark	12
Estonia	10
Finland	12
France	10
Germany	10;12
Greece	10; 16
Hungary	12;14
Iceland	10
Ireland	10
Italy	12
Latvia	12
Lithuania	10
Luxembourg	12
Malta	8; 10
The Netherlands	10
New Zealand	10
Norway	12;15
Poland	10
Portugal	10
Romania	12
Slovenia	10
Spain	10
Sweden	12
Switzerland	10; 12
United Kingdom (UK)	8
USA	14

Within the context of official drinking guidelines, midwives in antenatal care have an important role in providing information about the risks surrounding drinking, and in promoting a healthy lifestyle in general (Beldon & Crozier, 2005). Official drinking guidelines vary between, and sometimes even within, countries (O’Leary et al., 2007). Guidelines can be seen as an important part of prevention through i) specifically informing pregnant women who attend antenatal care and ii) informing the general public, to be aware of the risks with drinking during pregnancy in the event of a pregnancy. There is little evidence of the impact that official drinking guidelines have on women’s alcohol use during pregnancy. Anderson et al. (2012) compared compliance to the 2001 Australian ‘low-risk’ guidelines and the 2009 abstinence guidelines. The 2001 Australian guidelines advised pregnant women to consider abstaining from alcohol, but limit their intake to seven standard drinks (for definition see table 1, p.6, equivalent of approximately 9 UK units) per week and no more than two standard drinks (2.5 UK units) per day (spread over at least two hours) (NHMRC, 2001). The study found that in the relatively short period after the new guidelines were published, the majority of women did not comply with the complete abstinence advice. Exploring prenatal drinking within different contexts of official drinking guidelines is therefore needed. This will further inform research in regards to whether different social norms form within countries that promote abstinence compared to ‘low risk’ guidelines, which to some degree approve of pregnant women’s drinking. Such an understanding of the surrounding factors that influence women’s decisions about drinking would also inform practice around the discussion of alcohol in antenatal care.

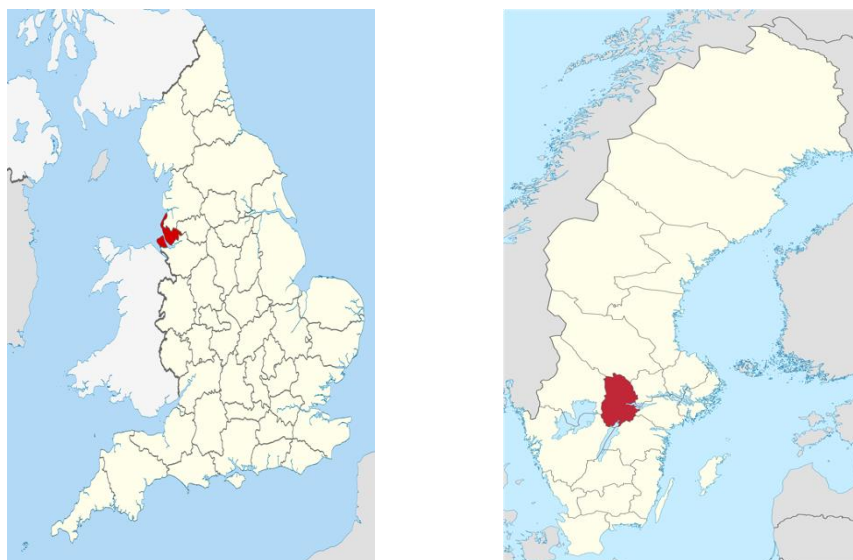
The implementation of official guidelines is also an important area to explore. In England, the 2010 Infant Feeding Survey (IFS) highlighted that only 28% of women (surveyed postnatal) reported that they were recommended to abstain from alcohol during pregnancy, despite the 2008 NICE guidelines (see Box 1, p. 5) recommending avoiding alcohol (McAndrew et al., 2012). In Sweden, on the other hand, 97% of pregnant women in a cross-sectional survey perceived the recommendation from antenatal care to be complete abstinence (Nilsen et al., 2012). Previous research has addressed the provision of advice to pregnant women in antenatal care, suggesting that conversations about alcohol are not routinely happening (Crawford-Williams et al., 2015b, 2015c; Meurk et al., 2014) and health professionals therefore may only address alcohol if women disclose alcohol use or display other risk factors (Diekman et al., 2000). Implementing routine practices of screening and alcohol brief interventions into antenatal care can be hindered by barriers such as perceived heavy workload and lack of an established relationship with women at

the initial appointment. Furthermore, midwives have been found to question the need for routine screening and alcohol brief intervention programmes as most women spontaneously stop drinking (Doi, Cheyne & Jepson, 2014). Recent studies have also suggested that midwives are not convinced they should be advising women about complete abstinence when the evidence on low levels of drinking is not clear (Crawford-Williams et al., 2015c; van der Wulp, Hoving & de Vries, 2013). There is therefore a need to explore how midwives practices and attitudes compare in different countries.

## 1.4 Research context

This research was conducted in two settings; one region in England (Merseyside) and one region in Sweden (Örebro County), displayed in Figure 1.

**Figure 1. Maps of the research locations in the UK and Sweden.**



*Images by Nilfanion and TUBS, distributed under CC-BY 3.0.*

The process of deciding on the settings started with Merseyside, situated in North West of England with a total population of 1.4 million inhabitants (Office for National Statistics, 2012). Health profiles for the North West region, where Merseyside is situated, indicate that levels of alcohol consumption as well as alcohol-related harm are higher than the average for England. National survey data from 2013 from the Office for National Statistics show that among those who reported drinking in the week prior to the survey, a higher proportion exceeded 3 (female)/4 (male) units on their heaviest drinking day compared to the average in England (57% of females and 51% of males, respectively). The proportion exceeding 6/8 units was also higher (32% and 25%, respectively) as was the

proportion that exceeded 9/12 units on their heaviest drinking day (13% and 18%, respectively) (Office for National Statistics, 2013a). The 2015 health profile for the North West of England from Public Health England (PHE) indicates that the region has significantly higher hospital stays for alcohol-related causes compared to the average for England, and the Liverpool area is higher than the regional as well as national average (PHE, 2015). At the time when this research was designed there was a specific interest from Liverpool City Council in studying and preventing alcohol use during pregnancy. The local Health and Wellbeing strategy 2012–2015 stated that 45,000 women in Liverpool drank at harmful levels. The strategy mentioned that there were 100,000 women of childbearing age in Liverpool, yet not how many of those that were drinking at harmful levels. Alcohol use at ‘harmful levels’ during pregnancy was described as putting the baby at risk for adverse outcomes and the Council therefore viewed this as an important areas of focus (Liverpool City Council, 2012). The research setting was extended to the entire Merseyside region in order to account for a wider perspective than only that of urban inhabitants.

There were several reasons why a comparative approach was considered appropriate to study this public health issue. As a Swedish researcher living in England, with knowledge of the differences in levels of drinking in Sweden and England, my personal interest encouraged me to choose Sweden as a comparator to England. Furthermore, a link with Örebro University already existed, as a result of my Master’s degree at the School of Health and Medical Sciences. As a region, Örebro County, with the regional capital Örebro (144,200 inhabitants), is smaller than Merseyside with an approximate population of 290,000 inhabitants (Statistics Sweden, 2016). The region is located in central Sweden, about 200 kilometres from the capital Stockholm (see figure 1). Statistics for 2012-2015 from the Public Health Agency show that the proportion of risky drinking, defined as a score on the Alcohol Use Disorder Identification Test (AUDIT) of 5-12 for women and 6-12 for men, in the region was lower than the national average (13% and 16%, for women and men respectively). For all three categories of alcohol-related hospital admissions (alcohol-related liver disease, alcohol poisoning, and ‘diagnosis according to alcohol index’), the region has lower rates per 100,000 people for both men and women (PHA, 2015c).

Available statistics for alcohol use during pregnancy show that the prevalence of prenatal alcohol use in England decreased from 55% in 2005 to 41% in 2010. Within the same

period there was a decrease in women reporting “drinking less”, from 62% to 47%. Similarly, there was an increase in women who stopped drinking completely, from 33% in 2005 to 48% in 2010 (McAndrew et al., 2012). In Sweden, national data on alcohol use during pregnancy is available from 2012 and 2013. This data is collected to follow-up on the national alcohol, narcotic drugs, doping, and tobacco strategy (ANDT, see further in 2.6.1). The data shows a decrease in proportion of women who screened positive for risk drinking on the AUDIT tool (>6 points), from 6.2% in 2012 to 5.6% in 2013 (PHA, 2015a). In summary, different measures for alcohol consumption or harm are available, but even so these two regions are shown as quite different. This is important to keep in mind when contextualising the results.

## **1.5 Cross-cultural research**

The literature on alcohol use during pregnancy has over several decades shown that women continue to drink during pregnancy, which is the case in countries where abstinence is advised and where ‘low-risk’ guidelines are endorsed. To my knowledge at the time of writing this thesis, no previous research had compared prevalence and practices in countries with different policy and guidance relating to alcohol during pregnancy. The aim of comparative research, commonly used within cross-cultural studies, is to “explore and explain the similarities and differences between comparable ‘items’ in different areas in order to improve health and the functioning of health services” (Øvretveit 1998, p.6). By making comparisons of the same ‘item’, explanations or solutions to problems may be discovered that have not previously been considered (Øvretveit, 1998). While acknowledging that comparative research as a methodology is complex with inherited limitations, this simple definition was the foundation for developing the research.

When considering alcohol use in the general population, there are variations between countries in regards to when and how people consume alcohol. Furthermore, there are also different social norms for what societies perceive as acceptable, such as being intoxicated or women drinking alcohol (Babor, 2010). Studying these differences, with specific focus on pregnancy, can therefore be valuable to the existing literature. This has been acknowledged previously. For example, Room (1988) argued that “a fuller understanding of cross-cultural variation in drinking practices and problems will give us new tools in the prevention and treatment of alcohol problems” (p.31). Furthermore, Room argued that the attributions and expectations on alcohol influence whether alcohol use will be viewed as

acceptable or problematic within different contexts in society. Previous cross-cultural research has included the relationship between alcohol sales and homicide (Rossow, 2001), gender differences in consumption and subsequent alcohol-related harm (Wilsnack et al., 2000), and prevalence of alcohol use during pregnancy (O’Keeffe et al., 2015). The application of comparative research has in these studies been useful, but there is a lack of mixed methods research (MMR) making further inferences specifically as to why prevalence rates of prenatal alcohol use vary between countries and the cultural factors that may influence pregnant women’s alcohol use.

## **1.6 Research approach and researcher position**

A mixed methods study was undertaken, comprised of a survey with 347 parents and interviews with 44 parents and 16 midwives, which aimed to explore cross-cultural differences in prenatal alcohol use from a socio-ecological perspective. Data were collected through structured questionnaires and semi-structured interviews, which were subsequently compared and contrasted through triangulation. The research addressed issues of validity and reliability, as well as trustworthiness of qualitative research, to ensure rigor of the research undertaken and best practice for MMR was followed.

This research has been conducted based on the principles of public health science, with the aim of improving health and preventing disease (Baggot, 2011; Mabhala & Wilson, 2009). During the course of the research, I found that the interdisciplinary nature of public health science is evident in the study of alcohol use during pregnancy. I approached this topic as a Swedish public health researcher with no clinical background relating to maternal health, and having never been pregnant. All these factors played a role in the way I viewed this issue and meant I had to reflect a lot upon my own position. Coming from a public health perspective allowed me to look beyond a medical paradigm and explore the social aspects of drinking during pregnancy. The need for a biopsychosocial model of health has been addressed over the last decades, with the need to move away from the traditional disease model (Engel, 1989). Alcohol use during pregnancy is no exception in this regard. The concerns about the toxicological effects of alcohol and its manifestation, in what has been described as ‘moral panic’ of Foetal Alcohol Spectrum Disorders (FASD) (Armstrong & Abel, 2000), could be argued to stem from a deeper rooted ethical debate of women’s right to autonomy in the pro-life versus pro-choice debate of abortion (Markens, Browner & Press, 1997). Increased medicalisation and developments in, for example, foetal

monitoring have been argued to increase the focus on the foetus as a person with its own rights (Lupton, 2012). It became clear to me that if I was to study cultural differences in abstinence during pregnancy, as well as perceptions and attitudes, then I could not reject the underpinning values in society about gender roles, gender equality, and women's right to autonomy over their own bodies. These were aspects that I became aware of throughout the research and these are addressed in the discussion to further inform future research which should acknowledge the underpinning ideological values of this issue.

I recognised that my position within this thesis was initially influenced by the social norms in Sweden where I spent most of my life. Low levels of reported alcohol use during pregnancy (Skagerström et al., 2013) and strong norms against drinking (Skagerström, Häggström-Nordin & Allehagen, 2015) are likely to have contributed to my initial perceptions. I had never reflected upon this issue before initiating this research and may subconsciously have shared similar views as those held by my participants, regarding women who drink during pregnancy. However, as I initiated my research in England I came to reflect upon the differences in how prenatal alcohol use was addressed at the policy level, as demonstrated in the 2008 NICE guidelines (NICE, 2008). The complexities in the evidence of low to moderate drinking made me aware that women's alcohol use during pregnancy from a public health perspective is complex. Ideologically, I believe in autonomy of the individual, but with all behaviours that are associated with some level of risk, the Government has a responsibility in communicating clear information of such risks. Discourses on public health policy often relate to ethical issues of the role of the Government, 'nannying' the population towards behaviours, that from a societal point of view, are beneficial (Nuffield Council on Bioethics, 2007). Drinking during pregnancy is no exception, but is highly influenced by strong moral views on the concept of good mothering (Ford, 2013; Lupton, 2012).

I do not argue that drinking should be promoted during pregnancy, but rather that there is a need for consistency and clarity in the advice to pregnant women to ensure they can make informed decisions. Furthermore, there needs to be a sensible debate on what the known risks with drinking are, and the uncertainties that exist in the evidence around low to moderate drinking. Information about the risks with drinking, and the current evidence base around low to moderate drinking, needs to be available and communicated effectively in maternal health care. Finally, while intentional drinking should be addressed and explored, I believe that there is also a need to balance information to avoid worry or



distress to women who may have consumed alcohol before they knew they were pregnant. This puts prenatal alcohol use in a wider context of women's alcohol consumption over the life course, where the pre-pregnancy (regardless of whether the pregnancy is planned or unplanned) period is important. From the results of this research, which has specifically focused on the pregnancy, I will draw conclusions and make recommendations for applying the findings in a broader context.

## **1.7 Contribution to research**

This research is the first attempt to extensively explore prenatal alcohol use from a cross-cultural perspective. The findings show that difference in perceptions regarding drinking during pregnancy are underpinned by moral values of women's autonomy and rights of the unborn child within these two different cultural contexts. It also highlights the policy approach taken in England, where the uncertainty of the level of risk previously has been emphasised as low, creates many different opinions of what is 'right' when it comes to alcohol and pregnancy. It shows how the strong abstinence message in Sweden has been adopted on all levels, and has led to the fostering of strong social norms around prenatal alcohol use. The findings show the different ways women, and their partners, conceptualise their relation to alcohol when they get pregnant. Further understanding of these views can assist midwives in improving conversations with expectant parents. This research suggests that midwives need to acknowledge that 'drinking during pregnancy' can mean different things for different women and that even though women may report abstinence in early pregnancy they may drink in later stages of the pregnancy. These findings also add to the literature by suggesting that disparities in how researchers or health professionals, and women, define drinking during pregnancy, affect levels of reported alcohol use. Finally, the current research shows that social norms may be well engrained and shape perceptions around drinking during pregnancy, which are important to consider in disseminating the new CMOs' recommendations of abstinence (Department of Health, 2015).

## **1.8 Overview of thesis**

This thesis includes work from three individual studies conducted in two different sites; Merseyside in the UK and Örebro County in Sweden. The first part of the thesis (Chapter 2) includes a comprehensive literature review of women's alcohol use, a brief overview of the research on associated risks with prenatal alcohol consumption, and research on prevention of alcohol use during pregnancy. The chapter finishes with an overview of the conceptual

framework for the study. Chapter 3 provides an overview of the methodology, including the research paradigm, important aspects of cross-cultural research including translation, and an overview of the methods used in each of the three studies. The chapter concludes with a discussion around ethical aspects of the study and an overview of its limitations.

In the following three chapters, the results of the three individual studies are presented in their own capacity. Chapter 4 presents the findings from the cross-sectional survey of the 347 parents in the two sites. The results show that in the total sample 21% of women drank any alcohol during pregnancy, however while only 4% of Swedish women reported any alcohol use 44% of English women reported this. Logistic regression analysis showed that being English, being employed, drinking at higher frequency before pregnancy, and drinking at higher levels at special occasions before pregnancy predicted any alcohol use during pregnancy. Chapter 5 and 6 presents the findings from the qualitative strand of the study. In Chapter 5 I present the findings from an interview study with 44 parents under four emerging themes; i) Knowledge and conceptualisation of risk; ii) Transition of alcohol habits; iii) Moral discourses; and iv) Perceptions of alcohol advice. Chapter 6 includes the results from interviews conducted with 16 midwives practicing in the two study sites. The analysis identified four main themes in the data; i) pregnant women's lifestyle; ii) The midwifery role; iii) antenatal care practices; and iv) health promotion and public health in antenatal care. The final chapter (Chapter 7) of the thesis presents the integrated findings from triangulation of the three study methods in a mixed methods synthesis. These findings are discussed in relation to their importance for policy and practice. Finally, I conclude the thesis by discussing the strengths and limitations, my own reflections on the research, recommendations, and concluding remarks.

## Chapter 2: A literature review of prenatal alcohol use from a public health perspective

### 2.1 Introduction

This chapter provides an overview of the literature in the field of alcohol use during pregnancy as well as wider relevant areas of research including women's drinking, health promotion during pregnancy and alcohol prevention in antenatal care, alcohol policy, and theories of behaviour change. The literature included were obtained through searches conducted using databases including PubMed, Science Direct, and Google Scholar. Search terms (used in various combinations) such as *abstinence*, *alcohol*, *attitudes*, *drinking guidelines*, *knowledge*, *midwives*, *pregnancy*, *partner*, *paternal alcohol use prenatal/maternal drinking* were used. In addition, manual searches of reference lists in relevant papers, newsletters (including NOFAS, NOFAS-UK, and EUFASD news), websites (such as Government websites, the World Health Organization (WHO), national statistics websites, and health professional bodies' websites (such as Royal College of Midwifery)). Furthermore, key authors in the field were identified through attending conferences (such as the European FASD conference). Personal communication with researchers was also as a way of identifying key texts. Each paper or source was appraised focusing on the specific research questions for this project (see 3.2) and the populations of interest (women, partners and midwives). Furthermore, papers were assessed in relation to the methodology used, the relevance of different methods to the project, and the validity of methods used.

Perhaps an important starting point of this thesis is not only to consider the concept of drinking during pregnancy, but the role of alcohol in the lives of many people in Western societies. Does prenatal<sup>1</sup> alcohol use occur in isolation, or is it rather part of a wider drinking culture?

---

<sup>1</sup> Throughout this thesis I use prenatal and maternal alcohol use interchangeably when referring to alcohol use during pregnancy.

*On the one hand, we need to consider our society's relationship with alcohol – is it surprising that a pregnant woman chooses to drink alcohol when it is such an accepted and normal part of everyday life for the rest of us? Why is abstinence so often seen as an oddity that has to be excused? It is within this wider social context that we must view alcohol consumption during pregnancy. Only with stronger alcohol policies throughout the UK will we start to change this social norm and create an environment that supports anyone choosing to abstain from alcohol use, and in this reports' context because of the potential of conception.*

Professor Sheila the Baroness Hollins (BMA, 2015, p. vii)

Wider public health concerns of women's drinking is an important consideration, due to the association between pre-pregnancy drinking levels and continued alcohol use during pregnancy (Skagerström, Chang & Nilsen, 2011). The above quote is from a report on prevention and managing of FASD (BMA, 2015), published around the same time as the CMOs in England published the new proposed drinking guidelines for the UK (Department of Health, 2015). The move towards abstinence guidance, despite no change in the available evidence on the risks associated with low level drinking, alongside this report signifies the importance of prenatal alcohol use on the public health agenda (O'Keeffe et al., 2016). In this literature review I explore the wider impact of alcohol on the global burden of disease, and the variance on women's drinking before and during pregnancy. I also discuss the specific importance of discourses around women's drinking and the societal perceptions surrounding women's responsibility to become and function as good mothers (Berridge, 2013). I then present a review of the associated risks with prenatal alcohol use, associated predictors, policy perspectives, and prevention. Finally, I outline the conceptual framework for the thesis.

## **2.2 Alcohol and gender**

### ***2.2.1 Women's drinking in context***

Women's alcohol use has been and is still conceptualised in different discourses to men's. Historically, drinking among women was seen as immoral, damaging, and potentially dangerous to society (Berridge, 2013). More recently there has been a re-definition of gender roles as drinking has become a more accepted practice among women (Lyons & Willott, 2008), and changing social roles of women over time has subsequently changed

their drinking (Plant, 2008). From a gender perspective, alcohol drinking may have different functions for women than for men. However, many health risks are the same for both genders, even though women suffer problems at lower levels of drinking (2.2.3). Yet there are additional risks for women, as the night time economy, for example, is seen as an unsafe place due to the risks of spiking of drinks or sexual assault (Brooks, 2011, 2013; Sheard, 2011). Health discourses of women's drinking habits are gendered, however, in the sense that focus is on consequences to the female body, whereas discourses around men's drinking are not framed in relation to the male body (Månsson & Bogren, 2014). Social norms of masculinity and femininity are sustained and reinforced through the use of alcohol (Holmila & Raitasalo, 2005), but also in creating gender identities (Emslie, Hunt & Lyons, 2013; Emslie, Hunt & Lyons, 2015; Simonen, Törrönen & Tigerstedt, 2013).

Women's drinking over the last decades has been portrayed as conforming to traditional masculine drinking practices. This has been described as adjusting to an existing 'lad culture' of drinking – creating the 'ladettes' (Jackson & Tinkler, 2007). Adapting to masculinised behaviour fits within a frame of risk, whereas a pleasure frame is applied to the benefits of women's drinking, particularly in women's magazines (Månsson & Bogren, 2014). In addition, media reports have focused on gendered aspects such as appearance but also on motherhood. Women's drinking may limit the ability to get pregnant, as well as having the potential to harm their future child if they drink when they are pregnant (Day, Gough & McFadden, 2004). Furthermore, an analysis of Swedish media from 1955 to 2010 found reoccurring paternalistic discourses of women's drinking that stigmatised their behaviour. As part of the transition into a more gender equal society, discourses have also emerged that describe women as informed consumers, with alcohol consumption part of liberation and increased gender equality (Roumeliotis & Törrönen, 2012). Underpinning these discussions around alcohol use among women is the concern that their behaviour is harmful, and to some extent more so than their male counterparts.

A common discourse in regards to alcohol in modern times, as well as historically, is women's responsibility towards the quality of her offspring. Historically women who drank were seen as potential threats towards society, as she may harm her child if drinking whilst pregnant (Berridge, 2013). Women's drinking habits have been described as irresponsible or even immoral, as the concept of a 'being a good mother' is often framed in zero tolerance to drinking during pregnancy or as a mother of an infant (Bell et al., 2009). Furthermore, there appears to be disproportional attention on the responsibility in relation

to alcohol among mothers, with few mentions of alcohol's effect on men's ability to become a father or care for a child (Bogren, 2011). In Australia, a study showed that in the media mothers' alcohol use is framed within a perception of risk taking, with strong moral connotations about their parenting responsibilities. While news stories at times presented findings from research, the focus was on a minority of high risk drinkers during pregnancy, rather than overall prevalence (Holland, McCallum & Blood, 2015). Narratives in UK newspapers have also focused on responsibilities of motherhood, whereby pregnancy (or even before that) is the starting point (Lowe, Lee & Yardley, 2010).

### ***2.2.2 Alcohol in Europe, England, and Sweden***

Alcohol is the most widely used drug in the world, but there are differences in alcohol use among men and women. Global statistics indicate that not only are men more likely to be drinkers, they also drink in greater quantities (WHO, 2014a). The latest 'WHO Global Status Report on Alcohol' showed that 28.9% of women and 47.7% of men were defined as current drinkers (defined as having had an alcoholic drink in the last 12 months). Moreover, men on average drink more than twice the quantities of women; globally, alcohol per capita for men is estimated to be 21.2 litres of pure alcohol compared to 8.9 litres for women. Men are also more likely to engage in heavy episodic drinking (HED) (defined as >60g of pure alcohol in at least one occasion in the last 30 days). Among men, the prevalence of HED was 21.3% among and among women 5.7%. The highest prevalence of HED in both men and women is in the European Region, which also has the highest overall consumption, with prevalence of 31.8% in men and 12.6% of women (WHO, 2014a). Trends of consumption however vary within the region; the alcohol per capita is much higher in the Central-western, Western, Central-eastern and Eastern countries than in Southern Europe and the Nordic countries. This is also evident in levels of harm, where alcohol-attributable mortality rates in the first three country groups exceed those of Southern Europe and the Nordic countries for both men and women (WHO, 2013a). Even though women are reporting lower levels of drinking than men it should be acknowledged that the increase over time may not only be caused by actual increases in consumption. Heath (1991) suggested that the stigma women have historically experienced in relation to drinking has been somewhat removed over time, allowing women to report on their drinking more than was previously possible.

England and Sweden belong to two very different country groups within the European Region. The alcohol per capita in the central-western and western countries in 2010 was

approximately 11 litres, compared to approximately 8 litres in the Nordic countries. Furthermore, standardised death rates are higher for both men and women in the Central-western and western countries (WHO, 2013a). At the country level, a 2013 report from the Organisation for Economic Co-operation and Development (OECD) showed that the alcohol per capita in the UK increased by 2% between 1990 and 2011. In Sweden the average consumption in Sweden increased by 16% between 1990 and 2011. However, despite the increase Sweden was still below the average of adult per capita consumption in the OECD34 countries (9.4 litres), at 7.4 litres, whereas the UK was above (10.0 litres) (OECD, 2013).

Survey data from Great Britain (GB) (England, Scotland, and Wales) shows that 52% of women interviewed had consumed alcohol in the past week, which decreased from 57% in 2005. The overall trend in consumption for both men and women in GB has been for reductions in the prevalence of drinking as well as binge drinking, which is mainly the effect of decreases among the youngest age groups (Office for National Statistics, 2013). The national lower-risk drinking guidelines for women at this time were to not regularly drink more than 2–3 units (for definition see table 1, p.6) in one day (Department of Health, 2008). Overall, 26% of women exceeded this recommendation in 2013, but when considering drinkers only this figure increased to 51%. Among women in the category of childbearing age (18–44 years), 65% of women aged 16–24 years and 60% of 25–44 year-olds exceeded the lower-risk guidelines (Office for National Statistics, 2013). Binge drinking (defined as <6 units on the heaviest drinking day in the week prior to the interview) (HM Government, 2012) was reported by 22% of female drinkers, with the highest prevalence among women aged 16–24 year-olds and 25–44 years (37% and 30%, respectively). Exceeding nine units on the heaviest drinking day in the past week was also most prevalent in the youngest age groups; 28% of 16–24 year-olds and 17% of 25–44 year-olds reported exceeding this limit (Office for National Statistics, 2013).

Data on alcohol consumption from the Swedish Public Health Agency are based on AUDIT scores and focus on risk drinking (defined as a score between 6 and 12 for women). In the 2014 data, 13% of women were defined as drinking at risky levels, more prevalently in the youngest age group (16–29 years) at 27%. In the age group 30–44 years 10% of women drank at risky levels. Of the total sample, 11% had been intoxicated at least once per month or more often in the last 12 months, which was highest among women aged 16–29 years (33%). Among women aged 30–44 years, 8% had been intoxicated at least once.

Six percent of women had been intoxicated twice per month or more often, which was also highest in the youngest age group (19%). In the age group 30–44 years, three percent had been intoxicated twice per month or more (PHA, 2015b).

Whilst in adult males drinking is more frequent and in higher quantities than females (WHO, 2014a), European statistics have indicated that differences among drinking in adolescents are much smaller. The 2011 European School Study Project on Alcohol and Other Drugs (ESPAD) report showed that lifetime use of alcohol among 15 to 16-year-olds was 87%. Seventy-nine percent had used alcohol in the past 12 months and just over half (57%) had used alcohol in the past 30 days. Boys reported drinking more alcohol on the last drinking day than girls (5.8cl and 4.3cl of pure alcohol, respectively), however any use of alcohol in the past 30 days and prevalence of HED<sup>2</sup> in the past 30 days was very similar between boys and girls. It appears that girls' alcohol consumption in terms of frequency and HED has converged with that of boys. A closer look at the statistics for the UK reveals that 85% of both boys and girls had used alcohol in the past 12 months, which is higher than the European average. Prevalence of alcohol use in the past 30 days was also higher than average, with 66% of boys and 65% of girls reporting recent use. Interestingly, more girls than boys (54% and 50% respectively) reported HED in the past 30 days. In Sweden, girls scored higher on all three measures, with 66% of girls and 63% of boys having consumed alcohol in the past 12 months; 41% of girls and 34% of boys had consumed alcohol in the past 30 days and 29% of boys and 33% of girls reported recent HED in the past 30 days (Hibell et al., 2012).

### ***2.2.3 Alcohol-related harm***

Alcohol affects the male and female body differently. The female body has higher proportion of body fat and less proportion of body water, and women are therefore more affected by alcohol at equal quantities than male counterparts. This leads to a higher blood alcohol concentration, which increases the risk of negative outcomes (Nolen-Hoeksema, 2004). Subsequently, due to the fact that women are affected at lower levels than men, they also suffer alcohol-related problems and illness at comparably lower levels than men do. Women are also more likely to experience sexual assault or physical violence in relation to alcohol use (McVeigh et al., 2005; WHO, 2013b). Secondly, women also experience

---

<sup>2</sup> Defined as ">5 drinks, where a drink is "a glass/bottle/can of beer (ca 50 cl), a glass/bottle/can of cider (ca 50 cl), 2 glasses/bottles of alcopops (ca 50 cl), a glass of wine (ca 15 cl), a glass of spirits (ca 5 cl or a mixed drink)" (p.12).



psychosocial factors influencing alcohol use, which is of a different nature to men. This includes theories such as that women experience more social sanctions from drinking. This may be related to lower tolerance of female drunkenness than male drunkenness. It also includes gender roles where drinking alcohol traditionally is seen as part of the male gender role (Nolen-Hoeksema, 2004). Yet, women as well as men are also at risk of infertility, which is an interestingly paradoxical given that alcohol is often a facilitator in sexual behaviour (Bellis et al., 2008). Research has also suggested an increased risk of breast cancer, which further emphasises gender differences in risk of harm (IAS, 2013).

In 2012, 4% of deaths among women in the world were attributed to alcohol, compared to 7.6% among men. The difference in drinking patterns among men and women is evident in levels of harm, partially attributed to the higher prevalence of HED among men. Whereas injury is much more common as a cause of alcohol-attributable deaths among men, the majority of deaths among women are caused by cardiovascular diseases and diabetes. The European Region has the highest proportion of alcohol-attributed deaths across all age groups (WHO, 2014a). In 2013, the rate of alcohol-attributable deaths among women in England was 8.7 per 100,000 population, similar to 2004 (8.9 per 100,000), after which it increased to 9.5 per 100,000 in 2007 with a small annual decline until 2013. The age group 55-74 years constitutes the largest proportion of alcohol-related deaths among women (54%) (Office for National Statistics, 2015). The number of hospital admissions in England, from a primary or secondary alcohol-related diagnosis, has almost doubled since 2003/2004. In 2013/2014 there were 1,370 admissions per 100,000 population among women, a slight increase from 2012/2013 (1,310 per 100,000). The highest absolute number of admissions was among women aged 45 to 55 years. The number of hospital admissions were lower than for men in all age categories, apart from 16 years and younger (HSCIC, 2015). Alcohol-related deaths among women in Sweden have remained relatively stable since the late 1980s. In 2014, the age-standardised death rate among women was 9.5 per 100,000 population (NBHW, 2015). Alcohol-related hospital admissions for Swedish women increased in all age groups apart from 25-44 between 1992 and 2012. The most admissions per 100,000 population were among women aged 45-64 years, and in the youngest age group (16-24 years) admissions were similar for both men and women (approximately 300 per 100,000) (PHA, 2014a).

In summary, in adults, men are more likely to be drinkers, consume greater quantities, and engage in heavy episodic drinking to a greater extent than women. In Europe, and

specifically England and Sweden, there are differences in alcohol-related mortality among men and women. While levels of consumption differ between in England and Sweden, number of alcohol-related deaths among women is at similar levels. Among women in younger age groups (under 30), heavy episodic drinking and risky drinking is more prevalent than among older women. The evidence concerning drinking among adolescents shows some convergence between boys and girls, and in England and Sweden girls drink at similar, or higher, levels than boys. In both countries the highest rate of hospital admissions is in the lowest age group. Levels of drinking among girls and young women are a particular concern in relation to the links between alcohol consumption and unintended pregnancies and the subsequent alcohol exposure that may occur. In the following sections I will further expand on the concern around alcohol use among women of childbearing age in relation to risks related to reproduction and pregnancy, as well as contextualise alcohol use among women of childbearing age and during pregnancy.

## **2.3 Risks associated with prenatal alcohol exposure**

### ***2.3.1 The effects of alcohol on reproduction and pregnancy***

One of the damaging effects alcohol can have in relation to reproductive health is on sexual dysfunction and infertility. In both men and women, there is a link between alcohol and sexual dysfunction (Peugh & Belenko, 2001), although the level at which the risk of reproductive function is affected is unclear (Sharma et al., 2013). Evidence suggests that higher levels of alcohol consumption decrease the chances of conceiving, as involuntary childlessness is more prevalent among women who report drinking at high levels (Eggert, Theobald & Engfeldt, 2004; Rostad, Schei & Sundby, 2006; Tolstrup et al., 2003). For example, Tolstrup et al. (2003) found that women aged 30 years or older who drank seven or more drinks (one drink equals 12g of pure alcohol) per week had an increased risk of infertility compared to women who drank less than one drink per week (hazard ratio (HR) = 2.26, 95% CI: 1.19–4.42). While reproductive function is not the focus of this research, primary prevention of high levels of alcohol consumption in the pre-pregnancy period could also have an impact on infertility.

During pregnancy, alcohol also increases the risk of negative neonatal outcomes. Increased risk of low birth weight (LBW) (Brooke et al., 1989; Valero De Bernabé et al., 2004), small for gestational age (SGA) (Chiaffarino et al., 2006), and preterm birth (PTB) (Feodor Nilsson et al., 2014; Miyake et al., 2014) have been linked to alcohol use, particularly at

high levels. Smoking is however a confounding factor for such outcomes and alcohol use in combination with smoking significantly increases the risk of for example PTB. A study of 1,565 Japanese women found that consumption of >1g alcohol per day more than doubled the risk of PTB (OR = 2.58, 95% CI: 1.004–5.80, *p* for trend = 0.003). In combination with smoking, the increase in the risk of PTB was more than fifteen-fold (OR = 15.11, 95% CI: 2.22–142.12) (Miyake et al., 2014). The risks of alcohol use at lower levels are not clear. A meta-analysis found no significant overall effect on LBW, SGA or PTB from alcohol when the analysis was restricted to studies that adjusted for confounders, such as smoking. The relative risk (RR) for LBW increased at around 10g of pure alcohol per day, just over one UK unit. At 52g per day, the RR increased two-fold and at 120g per day the risk of having a LBW baby was more than seven-fold, compared to non-drinkers. There was no increased risk of SGA at ≤10g per day. At 36g, just over four UK units, per day the RR for SGA was 1.39 (95% CI: 1.12–1.55) and thereafter the risk increased in a linear fashion. Finally, no increased risk for PTB was found <19g per day but a linear relationship was found from 36g per day, when the RR for PTB was 1.23 (95% CI: 1.05–1.44) (Patra et al., 2011).

Another systematic review compared consumption of low to moderate levels of alcohol (less than 83g per week) with abstinence and found no significant association between low to moderate intake and birth defects, miscarriage, SGA, PTB, birth weight, still birth, or intrauterine growth restriction (IUGR). In fact, in some outcomes small amounts were related to a decreased risk. The authors suggested that this may be due to the ‘healthy drinker hypothesis’, in which women who have complications with their pregnancy are more likely to abstain (Henderson, Gray & Brocklehurst, 2007). Doi (2012) concluded from his systematic review that there was no evidence of risk for FASD, IUGR/SGA, LBW, PTB, chryptorchidism, or cognitive neurodevelopment at low levels of 8–16g per week or per occasion. Neither was there evidence for the risk of FASD or chryptorchidism at moderate levels (24–48g per week or 24–4g per occasion). However, for heavy drinking (over 56g per week) and binge-drinking (over 48g per occasion) there was evidence of risk for FASD (heavy drinking), stillbirth, IUGR/SGA, LBW (heavy drinking), PTB, chryptorchidism (binge drinking), cognitive neurodevelopment (heavy), and behaviour in neurodevelopment (Doi, 2012). A review of systematic reviews on risk of neurodevelopmental problems from alcohol use found that the risk increased at 70g per week (O’Leary & Bower, 2012). Furthermore, a meta-analysis of studies assessing pregnancy outcome (malformations) with moderate alcohol use (defined as up to 28g of

alcohol per week) showed no increased risks for malformations (OR = 1.00, 95% CI; 0.93–1.08) (Polygenis et al., 1998). Overall, whilst negative effects are evident from the research, the picture is still unclear regarding cut-offs and whether there are levels of drinking that are free of risk.

### ***2.3.2 Foetal Alcohol Spectrum Disorders***

In the early 1970s, two American paediatricians diagnosed the first cases of an alcohol-related syndrome in new-borns, named Foetal Alcohol Syndrome (FAS) (Jones et al. 1973). Alcohol had previously been used in obstetrics for therapeutic properties to postpone premature labour, but observations of the risks of foetal apnoea and foetal death led to discontinuation of using alcohol for this purpose (Abel, 1981). The diagnoses of the first cases of FAS changed the perception on alcohol use during pregnancy to consider it a risk factor for poor pregnancy outcomes (Golden, 2005).

The FAS diagnosis includes three main domains; growth restrictions, craniofacial abnormalities, and damage to the central nervous system (CNS) (Jones, 2011; O’Leary, 2004; Larkby & Day, 1997). The diagnosis may also include confirmed maternal alcohol use, however diagnosis can be made if the three domains are present in the infant (Alberta Partnership on Foetal Alcohol Syndrome, 2003). In addition to the full FAS diagnosis, research also eventually found that “physical and neurobehavioral outcomes of prenatal alcohol exposure was variable, ranging from the classic form to a few minor abnormalities” (Calhoun & Warren, 2007, p. 169). In other words, it became evident that not all children exposed to alcohol in utero displayed all key features of the FAS diagnosis. These conditions have been identified as partial FAS (pFAS), Alcohol-Related Birth Defects (ARBD), and Alcohol-Related Neurodevelopmental Disorder (ARND) (Riley, Infante & Warren, 2011). ARND is characterised by CNS anomalies, whereas ARBD only includes physical anomalies, both of which require confirmation of maternal alcohol use. These conditions are included in the ‘umbrella term’ FASD, which covers the range of effects from mild cognitive and developmental impairment to the full FAS diagnosis (O’Leary, 2004).

Several factors are associated with the risk of giving birth to a child with FAS, including age, pattern of drinking, smoking, and timing of exposure. The first twelve weeks of pregnancy, the first trimester, are especially vulnerable due to the developmental processes taking place (O’Leary, 2004). Heavy drinking and alcohol consumption in binge-like

patterns are most harmful to the foetus (O’Leary, 2002), though factors such as low body mass index and inadequate nutrition further increases the risk (May et al., 2005). However, Abel and Hannigan (1995) noted that risk factors may vary between populations and samples of women. In terms of levels of drinking, Kesmodel (2016) in his literature review noted that *“FAS and all the characteristics associated with it is by definition caused by (high average daily) alcohol intake during pregnancy. To the extent that smaller amounts of alcohol are potentially harmful, the effects are likely to be the same but smaller”* (p.164). In relation to binge drinking, this review noted that the evidence is not clear on the harmful effects of binge drinking as a clear link has not been established and there is a lack of research on more specific timing of exposure from binge type patterns of drinking.

The prevalence of FAS varies between countries, within countries, fluctuates over time within the same populations, and depend on the availability diagnostic services (O’Leary, 2004). Difficulties in accurately estimating FAS relate partially to shortcomings in diagnostic services, but also to variations in data collection methods (Olsen, 2009). The three main methods for collecting data on FAS are passive surveillance, clinic-based studies, and active case ascertainment. Active case ascertainment studies have produced the highest prevalence rates of FAS, as they actively seek individuals that may have been exposed to alcohol in utero, and are commonly conducted in high-risk populations (May & Gossage, 2001). An overview of prevalence rates from international studies, using different methodologies, showed that the mean number of cases for FAS using surveillance methods was 0.845 per 1,000. In comparison, the prevalence in clinic-based studies was 1.83 per 1,000 and 15.61 per 1,000 in active case ascertainment studies (May et al., 2009). A more recent systematic review and meta-analysis aimed to estimate the global prevalence of FASD. Meta-analysis included samples from the general population (addressing the issues of bias mentioned above with higher prevalence in high-risk populations), found varying rates between countries. High prevalence of FAS was found in South Africa (55.42 cases per 1,000) and FASD was estimated to be 113.22 per 1,000. High levels of pFAS were found in Croatia (43.01 per 1,000). Heterogeneity in the studies included in the review was acknowledged and highlighted the need for greater methodologically consistency across prevalence studies (Roozen et al., 2016). In England, a 2011 study used hospital data to estimate the prevalence of FAS. Analysis of Hospital Episode Statistics, a passive surveillance method, showed FAS prevalence of 0.84 per 100,000 population, with regional variations from 0.41 per 100,000 to 1.67 per 100,000 population (Morleo, Cook & Bellis, 2011). In Sweden, data have shown that over an eight-

year period, only 300 individuals were diagnosed with FAS, it has been suggested that between 100 and 200 children per year fulfil the criteria for FAS (NBHW, 2015). Overall, underreporting is a recognised major issue in many countries, and thus the true prevalence is unknown (BMA, 2016).

From a public health perspective, the impact of FASD on the individual as well as society is significant. A systematic review of co-occurring comorbidities associated with FASD found an association with 428 conditions included in the International Classification of Disease (ICD-10). Physical conditions were among the most common conditions, including congenital malformations, but also behavioural or mental disorders (alcohol or drug abuse). Individuals with FASD require additional support throughout life, which creates high costs to society. The high number of co-existing conditions within the spectrum are all likely to increase costs in relation to health care and need for educational support (Popova et al., 2016). Estimates from Canada indicated that between 2008 and 2009, the direct costs on the healthcare system related only to the FAS diagnosis was \$6.7 million (around £4.7 million) (Popova et al., 2012). However, there are also costs associated within the justice and correctional system, where individuals within the FASD spectrum are overrepresented (Popova et al., 2015).

While the true prevalence of FASD is not known, it is clear that this complex condition contributes to the burden of disease and more importantly creates issues for individuals throughout the life course. The wide range of health problems associated with FASD, as well as the high costs for society, emphasises the need for prevention. In addition, the issue of underreporting creates a clear need for better diagnostic services and consistent indicators.

## **2.4 Alcohol use before and during pregnancy**

### ***2.4.1 Drinking among non-pregnant women***

Women of reproductive age (18–44 years) who consume alcohol at risky levels (drinking above lower risk levels for women as defined in national guidelines), and have sexual relationships without effective use of contraception are at risk of having an alcohol-exposed pregnancy (AEP) (Mengel, Searight & Cook, 2006). Research has found associations between alcohol use and increased risky sexual behaviour. Especially among young people these risks include having an unplanned pregnancy or getting a sexually

transmitted infection (STI) (Bellis et al., 2008). The risk of pregnancy as well as a STI are the result of decreased intention to use a condom as BAC increases, following alcohol consumption (Rehm et al., 2012).

Forty percent of all pregnancies in the world are unplanned, and in 2012 the rate of unplanned pregnancies was 43 per 1,000 women in the European region (Sedgh, Singh & Hussain, 2014). Considering that many women in the European region are drinkers, and some also engage in HED, AEP is a public health concern. The literature on AEP risk among European women is limited, although a study of 648 pregnant and non-pregnant women in two Russian regions showed that 32% and 54% of non-pregnant women were at risk of having an AEP. Intention to get pregnant did not influence levels of drinking, as 61% and 72% of women in the regions, who were actively trying to conceive, engaged in heavy episodic drinking of four or more drinks (one drink equals 14 g pure alcohol) in one occasion (Balachova et al., 2011). In contrast, a nationally representative sample of 3,368 sexually active women of reproductive age in the USA showed that 6.6% of women who could get pregnant (not sterile or had a partner who was sterile) were at risk of having an AEP. However, more women who intended to get pregnant were at risk of having an AEP (36.7%, 95% CI: 29.4–44.0) than women who were not intending to get pregnant (4.2%, 95% CI: 3.5–5.1) (Cannon et al., 2015).

Women who become pregnant often discover they are pregnant several weeks into the pregnancy. Estimating alcohol use before pregnancy recognition is therefore important, as foetal development is particularly crucial in the first trimester and sensitive to alcohol exposure (O’Leary, 2004). Research has indicated that many women drink before they find out that they are pregnant (Dott et al., 2010; Floyd, Decoufle & Hungerford, 1999; Parackal, Parackal & Harraway, 2013). In a study including 1,256 women in New Zealand, 49.6% had been drinking before they found out they were pregnant (Parackal, Parackal & Harraway, 2013). Another New Zealand study using data from the Growing up in New Zealand study (N=6,822) found that 71% of women drank before they knew about the pregnancy (Superu, 2015). As drinking before knowing about the pregnancy appears to be a common issue, Skagerström (2015) in her thesis argued that the way women are asked about their drinking habits during pregnancy influence prevalence rates. For this purpose 1,989 Swedish women were included in a study investigating the difference in prevalence when women were asked to estimate their alcohol use during pregnancy with and without specifying pregnancy recognition. Among women who were drinkers before they got

pregnant, 10.6% of women who were asked to report their consumption without specifying since knowing they were pregnant reported any alcohol use. Among women who reported any alcohol use since knowing about the pregnancy the prevalence was 7.4%, ( $p = 0.045$ ). For survey research it therefore appears important to acknowledge the distinction in drinking in the early stages of pregnancy before the pregnancy is confirmed, and the part of pregnancy in which the woman knows that she is pregnant.

One factor that may influence pre-recognition exposure is intention to get pregnant. Strandberg-Larsen et al. (2008) found slightly higher prevalence of binge drinking (>5 drinks) in the period before discovering the pregnancy among unintended pregnancies than intended pregnancies (27.9% and 20.9%, respectively). Binge drinking in this period was significantly associated with younger age, first-time mother, high education, and “in good jobs or skilled workers”. Once the pregnancy was recognised, women with unplanned pregnancies were significantly more likely to binge drink than those who planned the pregnancy (OR = 1.32, 95% CI: 1.18–1.48) (Strandberg-Larsen et al., 2008). Dott et al. (2010) did not find any difference in alcohol use between intended and unintended pregnancies. However, women who had an unintended pregnancy were more likely to use illicit drugs, smoke, not take supplements, and be exposed to second hand smoke before they discovered that they were pregnant. Women with an unintended pregnancy were also more likely to report these behaviours once they had discovered that they were pregnant (Dott et al., 2010). It is important to separate alcohol use before and after the pregnancy has become known, firstly in order to accurately estimate prenatal alcohol use and provide a descriptive picture of continued use once a woman knows that she has fallen pregnant. Secondly, it is important from the aspect of prevention to further understand the extent of unintended exposure.

#### ***2.4.2 Prevalence of prenatal alcohol use***

The prevalence of alcohol use during pregnancy varies between countries. Table 2 shows an overview of prevalence rates in different countries, according to time of data collection. It is evident that the prevalence varies greatly between countries but also that there is a variation in when women are surveyed about their alcohol use during pregnancy, which may impact on the prevalence rates reported from different studies.

As already discussed, in addition to the timing of exposure of alcohol the amount and pattern are important factors in the risk to the developing foetus. Despite that Table 2



indicates that in some countries the majority of pregnant women in the study samples reported drinking during pregnancy, many studies indicate that most women consume small amounts. For example, McAndrew et al. (2012) reported the findings from the 2010 Infant Feeding Survey, which showed that in the full sample of women for which units could be calculated, 64% did not drink any alcohol, 29% drank less than one unit, 4% drank 1–2 units, and 3% drank 3–7 units per week (McAndrew et al., 2012). A study of 837 Norwegian women found that no woman consumed more than seven standard drinks (for definition see table 1, p.6) per week after week 13 of pregnancy. After week 25, the maximum amount consumed was 3.5 standard drinks (Alvik et al., 2006b). Similarly, a retrospective study of 5,882 mothers in Canada showed that the majority of women drank on average less than one drink (one drink equal to 13.5g pure alcohol) per day (42.6%) or one drink per day (53.2%), while 2.5% had two drinks per day and 1.7% had three drinks or more. The amount reported was generally consumed infrequently as 70.4% drank less than once per month, 17.3% once per month, 5.0% drank two to three times per month, 6.1% drank once per week and 1.2% drank once or twice per week (Walker et al., 2011). Ethen et al. (2009) used retrospective reports and were able to explore changes across the entire pregnancy. Among the 4,088 American women in the study, any alcohol use decreased from 23% in the first month of pregnancy to 9% the second month and 5.5% in the third month. By the second trimester reported alcohol use increased to 8% and there was a slight increase to 8.5% in the third trimester.

**Table 2. Alcohol use during pregnancy across different countries according to gestation in selected studies and surveys**

Reference	Country	Any alcohol use*	Data collected
Alvik et al. (2006b)	Norway	36%	25–30 weeks
Anderson et al. (2013)	Australia	82%	Not stated
Ethen et al. (2009)	USA	30%	Post-partum
Göransson et al. (2003)	Sweden	30%	30 weeks
Mallard et al. (2013)	New Zealand	34%	Post-partum
McAndrew et al. (2012)	England	41%	Post-partum
	Scotland	35%	Post-partum
	Wales	39%	Post-partum
	Northern Ireland	35%	Post-partum
Nilsen et al. (2008)	Sweden	6%	10–12 weeks
O’Keeffe et al. (2015)	England	75%	20 weeks
	Australia	40%	20 weeks
	Ireland	82%	20 weeks
	New Zealand	56%	20 weeks
Smith et al. (2014)	England	26%	10–11 weeks
Walker et al. (2011)	Canada	11%	Post-partum

*\* For comparison reasons, any alcohol use during pregnancy was used as the indicator, that is a cumulative measure of any consumption at some stage during pregnancy*

Although binge drinking is less common among pregnant women, some women drink large amounts in a single occasion, which is a particular concern for poor neonatal outcomes (O’Leary, 2004). In a study of 6,725 Irish women at 12 to 14 weeks of gestation, 5% of the sample continued to drink. Of the women who continued to drink, 25% reported binge drinking (>5 units per occasion at least once per month) (Murphy et al., 2014). In a study of pregnant Swedish women (N=1,868), 12.3% of women reported any alcohol use at 32 weeks of gestation. Among women who did not cease drinking, 39.3% reported HED (>6 standard drinks, see table 1 for definition). The majority (94.0%) reported binge drinking once per month or less (Comasco et al., 2012). Findings from an American study suggested that binge drinking during pregnancy was associated with habits before pregnancy; women who reported binge drinking (>4 drinks) before pregnancy were both more likely to consume alcohol during pregnancy (OR = 8.52, 95% CI: 6.67–10.88) and to binge drink during pregnancy (OR = 36.02, 95% CI: 24.63–52.69) (Ethen et al., 2009).

## **2.5 Influences on alcohol use during pregnancy**

Several factors are associated with drinking during pregnancy; however some of these are not consistent across studies. A systematic review found that the most consistent predictor for continued alcohol use during pregnancy was drinking at higher levels before pregnancy, and experience of abuse or violence. Less consistent predictors included higher income/social class (in 80% of studies), positive screen for alcohol problems (in 80% of studies), higher age (positive association in 58% of studies), smoking (in 50% of studies), and lower education (in 10% of studies) (Skagerström, Chang & Nilsen, 2011). However, different predictors may relate to different patterns of drinking during pregnancy. The following sections provide an overview of identified factors that are associated with continued drinking during pregnancy.

### ***2.5.1 Age and socioeconomic status***

Older age is a factor that has been attributed to higher likelihood in several studies, where studies have suggested that older women are more likely to drink, and do so at higher quantity and frequency (Alvik et al., 2006b; Callinan and Ferris, 2014; Marchetta et al., 2012; Nilsen et al., 2008). In a study of American women attending their first antenatal care visit (N=4,272), older age was significantly related to prenatal alcohol use. Specifically, the odds of drinking whilst pregnant were 26% higher for women aged 30 years or older, as compared to women aged 20–29 years (OR = 1.26, 95% CI: 1.08–1.47,  $p < 0.01$ ). Furthermore, teenage girls were significantly less likely to report prenatal alcohol use (OR = 0.56, 95% CI: 0.41–0.77,  $p < 0.001$ ) (Meschke et al., 2008). Another American study, including a sample of low-income women (N=3,046) surveyed in the second trimester, found that older age was significantly associated with increased odds of prenatal alcohol use (OR = 1.11; 95% CI: 1.08–1.15) (Li et al., 2012). The evidence concerning higher maternal age also includes higher age as a risk factor for having a child with FASD. A review of studies from South Africa, Italy, and the USA (including Northern Plains), found that the mothers age of delivery for her first pregnancy was significantly higher in two of the geographical regions included for women who gave birth to children with FASD (May & Gossage, 2011). Callinan and Ferris (2014) examined the role of age in relation to continued drinking, but also controlled for cohort (women born the same year) and period (time of pregnancy). They found that while age was a significant factor, in that older women (34–39 years and over 40 years of age) were more likely to drink, this was a combined factor across time (period). The results therefore indicated a decline in women

who drank during pregnancy, but the decrease was greater among younger women over time so that young women (22–27 years) who were pregnant most recently (in 2010) were least likely to drink (Callinan & Ferris, 2014). Changes in drinking guidelines may have contributed to this effect (see further in 2.5.5).

Despite this, there is some evidence that suggests the opposite. Caetano et al. (2006) found that among the 1,517 American women who had been pregnant in the last 12 months, women under the age of 30 years were more significantly likely to abuse alcohol or score positive for dependency. Binge drinking (>4 drinks) was however noted in all age groups. A New Zealand study (N=6,822) found that women aged 25 years or younger were 26% more likely to have consumed alcohol before they knew that they were pregnancy ( $p < 0.05$ ), compared to women aged >35 years. However, after the first trimester they were significantly less likely to have consumed any alcohol (OR = 0.56,  $p < .001$ ) as were women aged 25–34 years (OR = 0.78,  $p < 0.01$ ). When comparing number of drinks consumed women younger than 20 years were significantly more likely to drink >4 drinks per week in the first three months of pregnancy, as well as after the first three months of pregnancy. However, the age group 35–39 years were significantly more likely to drink <1 drink per week or 1–3 drinks per week (Superu, 2016). Overall, the picture of association between age and alcohol consumption is not clear, which may depend on pattern of drinking.

As with age, the influence of education and income is less than clear. While lower education and unemployment have been identified as predictors for high risk of drinking during pregnancy (Leonardson & Loudenberg, 2003), Marchetta et al. (2012) found that drinking was more common among women with college education and who were in employment. A Norwegian study found that alcohol use during pregnancy was reported to greater extent by women with higher income (OR = 2.2, 95% CI,  $p < 0.001$ ), however in a multivariate adjusted analysis neither income nor education was a significant predictor for consuming >1 standard drink per occasion, or binge drinking ( $\geq 5$  standard drinks) (Alvik et al., 2006b). Superu (2016) showed that divided by time during pregnancy, women with no secondary qualification were significantly more likely to consume alcohol in the first trimester (OR = 1.56,  $p < .001$ ), compared to women with bachelor degree or higher. In addition, women with secondary/dip/trade qualification were significantly less likely to consume alcohol after the first trimester (OR = 0.80,  $p < 0.05$ ) than women with bachelor degree or higher. Interestingly, the same study found that women who earned \$50k-\$100k per year were more likely to have drunk before knowing about the pregnancy (OR = 1.45,

$p < 0.001$ ), as were women earning \$100k-150k (OR = 2.78,  $p < 0.001$ ) and >\$150k (OR = 4.55,  $p < 0.001$ ), compared to women earning <\$30k. After the first trimesters, only women earning >\$150k per year were more likely to drink (OR = 1.68,  $p < 0.05$ ).

### ***2.5.2 Pre-pregnancy drinking habits***

A study from New Zealand (N=723) of women surveyed post-delivery showed that frequency of alcohol use before pregnancy predicted continued use. Women who drank on a daily basis were more likely to continue to drink during pregnancy, compared to women who drank less than once per week (adjusted odds ratio (AOR) = 22.13, 95% CI: 3.55–137.97). Women who drank three to six times per week were also more likely to continue to drink (AOR = 5.83, 95% CI: 2.90–11.73), as were women who drank one to two times per week (AOR = 2.88, 95% CI: 1.79–4.64),  $p < 0.001$ . No socio-demographic variables were significant predictors for continued use, however women who were of Maori or Pacific ethnicity, smoked, or used drugs were significantly more at risk of HED (>4 drinks) (Mallard et al., 2013). A longitudinal study of 1,577 Australian women also showed that specific patterns before pregnancy were related to continue drinking during pregnancy. Two groups were compared; i) women who reported only binge drinking (same definition as in Mallard et al. 2013), and ii) women who reported weekly drinking (below the binge limit per occasion) as well as binge drinking. Among women in the first group, 55% continued to binge drink during pregnancy and 29% reduced their drinking. Among women in the second group, 61% still engaged in binge drinking during pregnancy and 47% continued to drink on a weekly basis. Compared to the combined group, women who only binge drank before pregnancy were less likely to reduce their drinking (AOR = 0.37, 95% CI: 0.29–0.47) (Anderson et al., 2014a).

### ***2.5.3 Partner***

In addition to individual factors mentioned in the previous section, what other factors influence women to continue to drink during pregnancy? One potentially important factor is the pregnant woman's partner. Data from Eurostat show that in the 28 EU countries, in 2012, 60% of total live births were to a woman whose marital status was married (Eurostat, 2016). A Norwegian study of 82,362 couples found that both expectant mothers and fathers reduced their drinking. First time parents reduced their drinking slightly more than couples who already had a child (Mellinger, Torsheim & Thuen, 2013). Walker et al. (2011) found that just having a partner was associated with increased likelihood of alcohol

use during pregnancy (AOR = 2.0, CI: 1.20–3.31). But why does having a partner make women more likely to consume alcohol during pregnancy? In non-pregnant couples, research has found that partners' drinking habits are convergent. A study of a nationally representative sample of 1,924 people in New Zealand showed that concordance in drinking behaviour was common in couples regardless of marital status or whether partners were the same sex. Furthermore, couples who reported concordance in frequency (difference 0–9 drinking occasions per year) and quantity (0–10g difference) of drinking within their relationship were also happier in their relationship. However, if one or both partners were defined as heavy drinkers (>140g per week for women and >210g per week for men), happiness in the relationship declined despite being concordant (Meiklejohn, Connor, & Kypri, 2012). Similar results have been found during pregnancy, where a Ukrainian study (N=166) found that women who drank during pregnancy (week 18-19 of gestation) had lower relationship satisfaction scores than women who did not drink (3.54 and 4.01 respectively,  $p = 0.001$ ). There was an association with the partner's drinking habits as the OR for having consumed alcohol in the last two weeks of pregnancy was 34.1 when the partner was a risky drinker (defined as drinking three times per week or more or drinking >5 drinks per occasion) (95% CI: 5.9–195.8) (Bakhireva et al., 2011).

Qualitative research has explored the relationship between drinking habits of the pregnant woman and her partner in more detail. van der Wulp, Hoving and de Vries (2013) interviewed 34 expectant Dutch parents about their experiences of alcohol use and alcohol advice in antenatal care. Partners had liberal views about pregnant women consuming alcohol and felt comfortable for their partner to occasionally have small amounts. Within couples, women and partners shared views on whether pregnant women should abstain or if consuming small amounts was acceptable. Partners often changed their habits regardless if the woman expressed that she needed the support, as the woman was their usual drinking companion which decreased partners' desire to drink (van der Wulp, Hoving & de Vries, 2013). A focus group study with 149 women in the USA also found that couples shared views on drinking during pregnancy. At times this meant the partner discouraged drinking, but some groups including Hispanic women said their partner had rather encouraged them to drink (Elek et al., 2013). Another focus group with 21 Australian women and partners also showed that drinking during pregnancy is perceived to be a joint decision in the couple. While some partners had reduced their drinking and others had continued, or even increased, women felt they had received sufficient support from their partner (Crawford-Williams et al., 2015b).

### ***2.5.4 Attitudes and knowledge***

Within theories of behaviour change, such as the health belief model (see further in section 2.8), attitudes along with risk perception are core concepts for how an individual makes sense of a behaviour and motivation to change (Champion & Sugg Skinner, 2008). A study of 1,103 Australian women aged 18–45 years found that neutral or positive attitudes towards continued alcohol use during pregnancy were associated with intention to drink in a future pregnancy (AOR = 5.1; 95% CI: 3.6–7.1,  $p < 0.001$ ). When controlling for age, education level and birth history, women who consumed  $\geq 70$ g of alcohol per week were more likely to intend to drink if they became pregnant (AOR = 2.7; 95% CI: 1.6–4.8,  $p < 0.001$ ). Women who disagreed with the statement that alcohol could affect the foetus (AOR = 3.6; 95% CI: 2.2–5.9,  $p < 0.001$ ) and lead to life-long disabilities (AOR = 2.4; 95% CI: 1.7–3.4,  $p < 0.001$  respectively) were also more likely to intend to drink (Peadon et al., 2011). Kesmodel and Schiøler Kesmodel (2002) explored attitudes among pregnant Danish women (N=439) and found that 85% believed binge-drinking was harmful to the foetus, compared to 76% who believed that any alcohol during pregnancy was acceptable. Overall, 24% of women believed that women should not drink any alcohol at all, which was significantly higher among abstainers than women who binge drank during pregnancy (65% and 26%, respectively,  $p < 0.001$ ).

Other studies have suggested that women hold specific attitudes towards risk of drinking, as beverage type is an aspect women take into consideration. A study of 176 pregnant French women found slightly higher acceptance towards drinking beer than wine. Overall, 67% believed that two or more drinks of beer per day was acceptable, compared to 61% who perceived that two drinks of wine per day was acceptable (Lelong et al., 1995). Loxton et al. (2013) interviewed 74 women about their experiences of pregnancy and lifestyle, in which women evaluated the risks with drinking by ranking beverage types as a justification for consuming alcohol. Specifically, spirits were regarded as harmful whereas beer and wine were described as ‘safe’. In addition, Elek et al. (2013) found that 63% of pregnant women believed that spirits were more harmful than beer and wine, and women perceived wine as safer than other types of beverages. Some women argued that red wine even has some beneficial effects. Women also held the misconception that it would be safe to drink in the second and third trimester. Loxton et al. (2013) described these cognitive processes as “internal bargaining”, allowing for drinking with the view of safe ways of consuming alcohol.

Research has also attempted to elucidate how knowledge of risks with drinking during pregnancy relates to attitudes around prenatal alcohol use. A survey of 1,103 women of childbearing age found that women who knew that the effects of alcohol exposure sustain throughout life were more likely to perceive that pregnant women should abstain from alcohol (AOR = 4.59; 95% CI: 3.22–6.54,  $p < 0.001$ ), and negative emotions when seeing a pregnant woman drink (AOR = 3.67; 95% CI: 2.56–5.29,  $p < 0.001$ ). The majority (61.5%) were aware of any effects to children caused by alcohol exposure in utero, and the most commonly mentioned effect was FAS (31.7%). However, knowledge of specific characteristics of the syndrome was limited. Women with a university degree had higher levels of knowledge of risks with drinking during pregnancy (Peadon et al., 2010). Qualitative research has also shown that women have knowledge of FAS, but limited knowledge of the characteristics of the condition (Elek et al., 2013), and knowledge of the characteristics of FASD has also been shown to be limited in research including the general population (Mukherjee et al., 2014). Considering the lack of evidence for prevalence of FASD, it could be argued that lack of knowledge of FASD would be unsurprising. Furthermore, cut off points for dose of alcohol that cause FASD is not established within the existing literature, which may influence reported knowledge of the condition.

### ***2.5.5 Drinking guidelines***

Research has however shown that implementing new guidelines may impact on beliefs and practices in maternity care. A study of 105 midwives in Denmark, before and after the implementation of abstinence policy in 2007, showed an increase in midwives who believed women should abstain from alcohol (31% to 48%, ns). There was a significant difference in the belief that women should abstain among midwives who cared for more than 100 women per year, compared to those who cared for less than 100 women (42% vs 0%,  $p = 0.049$ ). The new policy also resulted in an increase of midwives who told their patients to not consume any alcohol (28% to 61%,  $p < 0.001$ ), and more midwives could state what the official guidelines were under the abstinence policy (93% vs 69%,  $p = 0.004$ ) (Kesmodel & Kesmodel, 2011). An Australian study (N=1,143), carried out before the abstinence advice was implemented in 2009, showed that 13% of health professionals gave advice to pregnant women that contained all elements of the official guidelines. The majority (87%) believed that pregnant women should abstain from alcohol, but less than half (45%) of health professionals routinely assessed women's alcohol habits and only 25% gave information about the risks to the foetus (Payne et al., 2005). A later study



(N=166) in Western Australia, after the abstinence advice was introduced, showed that 91.4% of midwives believed pregnant women should abstain from alcohol. The majority assessed women's alcohol habits (93.2%), but 75.3% did not feel confident about asking about alcohol. Advice according to official guidelines, complete abstinence, was given by almost all midwives (99.4%) and 64.2% provided information about risks for the foetus (Payne et al., 2014).

## **2.6 Alcohol policy**

### ***2.6.1 Global and national policy***

Concerns about damage caused by alcohol use during pregnancy are evident in global as well as national policy documents. The 'Health 2020 – a European policy framework and strategy for the 21st century', adopted at the 62nd WHO Regional Committee in 2012, sets out the work for European Member States to improve health and well-being. An important focus of this policy framework is the life-course perspective on health, emphasising the importance of a healthy start in life. Ensuring a healthy start in life includes healthy pregnancy, as well as women's possibility to make reproductive decisions (WHO, 2013c). In 'Investing in children: the European child and adolescent health strategy 2015–2020', WHO further emphasised that prevention and health promotion during pregnancy is important to ensure children are born with the best possible chance of a healthy start in life (WHO, 2014b). The 'Global strategy to reduce harmful use of alcohol', adopted at the World Health Assembly in 2010, specifically focus on women's alcohol use before and during pregnancy in article 21b and 21c:

*Supporting initiatives for screening and brief interventions for hazardous and harmful drinking at primary health care and other settings; such initiatives should include early identification and management of harmful drinking among pregnant women and women of child-bearing age;*

*Improving capacity for prevention of, identification of, and interventions for individuals and families living with fetal alcohol syndrome and a spectrum of associated disorders*

(WHO, 2010, p. 12)

The global strategy is endorsed in the 'European action plan to reduce the harmful use of alcohol 2012–2020', which further sets out implementation of the ten action areas of

alcohol policy to reduce alcohol-related harm in the WHO European Region. One of the key areas of the European strategy is harm to others, where the action plan sets out the importance of identification and interventions in primary care, including antenatal services. The action plan states that women receiving antenatal care should be informed about alcohol and pregnancy (WHO, 2012).

In England, the white paper ‘Healthy Lives Healthy People: Our strategy for public health in England’ set out the priorities for public health, where healthy start in life was specifically mentioned as key to good health from a life-course perspective (Department of Health, 2010). ‘The Government’s Alcohol Strategy’, published in 2012, set out an aim to decrease drinking among women in general, to prevent having an AEP. The strategy aimed to increase awareness of the risks of drinking with specific focus on health professionals, but also had a wider ambition to reduce alcohol-related harm through population based intervention of regulating the price of alcohol through a minimum unit price system (HM Government, 2012). However, despite the price policy measure outlined in the strategy, the commitment was soon dropped by the Government (Boseley, 2013).

The Swedish Government has set out eleven public health priorities guiding public health policy. Number three (conditions during childhood and adolescence) and eleven (alcohol, illicit drugs, doping, tobacco, and gambling) support a healthy start in life and importance of healthy pregnancy, free from exposure to alcohol (Government Offices of Sweden., 2007). Swedish alcohol policy has traditionally been restrictive, characterised by high taxation, limited availability through national retail monopoly, strict regulations of hours of sales, and limited quotas for private import (Norström & Ramstedt, 2006). In 2010 the national strategy ‘A cohesive strategy for alcohol, narcotic drugs, doping, and tobacco (ANDT)’ was endorsed by the Swedish parliament (Government Offices of Sweden, 2010). The strategy had the long term aim of a society free from illicit drugs and doping, and reduced medical and social harm caused by alcohol and tobacco. The new ANDT strategy for 2016–2020, published in January 2016, reiterated these aims and specifically stated that one of the long term aims within the 2010 strategy regarded to reduce the number of children born with harm caused by exposure to alcohol, drugs, or tobacco. Protecting children from exposure to these substances is therefore an important aim, though the limited evidence available suggests that the proportion of pregnant women who drink alcohol has remained unchanged over time (Government Offices of Sweden, 2016). It is important to note the different approaches taken in these two countries. While UK alcohol

policy has suffered from setbacks in aspects such as wider pricing policy, although Scotland has made efforts to progress minimum unit pricing policy (Scottish Parliament, 2012), the Swedish alcohol policy is situated within a wider approach to substance use and abuse.

While these policy documents set out important focus for prevention, there are two important remarks to make. Firstly, as will be discussed further in this chapter, there has not been conclusive evidence regarding the effectiveness of brief interventions in maternity care (Gilinsky, Swanson & Power, 2011; Stade et al., 2009). Within the ‘WHO Guidelines for identification and management of substance use and substance use disorders during pregnancy’ the recommendations for screening as well as brief intervention are strong, albeit the quality of the evidence is acknowledged to be low (WHO, 2014a). There is no doubt that the consequences of alcohol exposure in utero can be devastating, but policies do not always discuss the state of the evidence. Leppo and Hecksher (2011) and Leppo, Hecksher and Tryggvesson (2014) argued that the abstinence model has developed as the dominating paradigm despite lack of evidence that clearly states risks with drinking at lower levels. Secondly, policies are primarily focusing on the woman. Even though some of the documents mention ‘expectant parents’ but do not elaborate on the aspects of partner drinking. As has been pointed out for example by Lupton (2012), medicalisation of pregnancy has meant an increased focus on exposure to substances or foods that could harm the foetus. However, the pregnant woman’s autonomy to make decisions based on available information and evidence is bypassed in these narratives. Tying in policy with the lives of women, and their partners, seems necessary in order to develop approaches that truly empower women, and their partners, to make informed decisions.

### ***2.6.2 Drinking guidelines***

Providing explicit recommendations about alcohol for pregnant women is a way to endorse the global as well as national policy documents. The guidelines however vary between, as well as within, countries (O’Leary et al., 2007). For example, in the USA, where the first study diagnosing FAS was published, the Surgeon General endorsed complete abstinence advice to pregnant women or women considering getting pregnant in 1981. The knowledge of the teratogenic effects on the foetus, rather than epidemiological knowledge of how much alcohol could cause harm, appears to have been the foundation in the guidance (Golden, 2005). In Australia, the Australian National Health and Medical Research Council (NHMRC) changed its guidelines in 2009 to complete abstinence (NHMRC,

2009). This followed on from the previous advice in the 2001 guidelines which stated that pregnant women and women who may become pregnant “may consider not drinking at all”. Further, the guidelines emphasised that early pregnancy was most sensitive to alcohol exposure and that pregnant women should not get intoxicated. If women chose to drink they were advised to not drink more than two drinks per day and seven drinks per week (NHMRC, 2001). The 2009 guidelines acknowledged that the change was not related to new evidence of harm from previously stated limits, but rather that the evidence is uncertain in regards to level of risk (NHMRC, 2009).

An overview of drinking guidelines in European countries to pregnant women and women who are breastfeeding showed that 25 out of 31 countries have a recommendation or guideline. The vast majority of countries for which the recommendations were specified, promoted complete abstinence (some also for breastfeeding and when trying to get pregnant). However, Austria recommends “to strictly avoid larger amounts of alcohol, to try to avoid alcohol in general, and not to panic if little amounts of alcohol were drunken before being aware of the pregnancy” (Scafato et al., 2014/2016).

Until 2008, women in England were advised through the guidelines from the National Institute for Health and Care Excellence (NICE) that excessive drinking could harm the foetus. Women were therefore advised to limit their drinking and not have more than two units per day (NICE, 2003). In 2007, the Department of Health (DH) changed the advice to pregnant women to primarily advise women to completely abstain from alcohol if they are pregnant or trying to get pregnant. Despite progression to more precautionous recommendations, the DH added that if women choose to drink they should limit their intake to no more than two units of alcohol in one drinking day, and not drink more than twice per week (Department of Health, 2007). The clinical guidelines from NICE were therefore updated in 2008 to correspond to the issued recommendations by DH. The 2008 guidelines (see Box 1 section 1.3) specifically stated, similar to the 2001 Australian guidelines, that women should consider to not drinking at all but advised women that if they chose to drink they should not drink in the first three months of pregnancy due to the increased risk of miscarriage. Furthermore, binge drinking was described as particularly harmful, but the evidence for drinking small to moderate amounts was referred to as inconclusive (NICE, 2008).

Among professional bodies in the UK there has not been consensus. While the Royal College of Obstetricians and Gynaecologists have endorsed the NICE guidelines (Royal College of Obstetricians and Gynaecologists, 2015), the Royal College of Midwives welcomed the proposed abstinence advice published by the UK CMOs in 2016, in line with their previous advice on complete abstinence (Royal College of Midwives, 2016).

The Swedish National Institute of Public Health, now the Public Health Agency, in 2009 published a systematic review with overview of the evidence of harm from low to moderate alcohol consumption during pregnancy, defined as two to four drinks per week. There was some indication that small to moderate amounts of alcohol had an impact on, for example, cognitive deficits. The authors noted that effect sizes were small, but concluded that women should abstain from alcohol as small amounts may harm the baby (SNIPH, 2009a). The complete abstinence advice (NBHW, 2014) is in line with national prevention guidelines, which state that the precautionary principle has precedence during pregnancy, due to the harmful effects alcohol can have on the developing foetus (NBHW, 2011).

The move towards the precautionary principle through the abstinence model has been prominent in many countries, however the rationale has not been evidence based. A review of the development of drinking guidelines to pregnant women in Denmark and Finland showed that changes in policy had not been made due to review of existing evidence but rather a precautionous approach due to the uncertainty of risk. Both countries eventually adopted abstinence policy, despite Denmark's traditionally more liberal alcohol policy than Finland's restrictive (Leppo & Hecksher, 2011).

Research on how national guidelines influence behaviour is however limited. A qualitative study of 20 pregnant English women, following the changes in the recommendation from DH in 2007, showed women received conflicting advice about drinking during pregnancy. Women perceived that it limited their ability to make an informed decision (Raymond et al., 2009). Qualitative studies from countries that endorse abstinence have shown similar results. Loxton et al. (2013) interviewed women in Australia about advice on alcohol found that women perceived the recommendations about alcohol as confusing. In a study of Dutch women and partners, van der Wulp, Hoving and de Vries (2013) found that many participants had been given clearance from the midwife to have small amounts of alcohol despite official abstinence policy. The occasional drink was advised as not harmful for the

baby, and some participants also reported on conflicting information from different health professionals. Gavaghan (2009) expressed criticism against total abstinence policy. He argued that when evidence does not support a precautionous approach of no alcohol, recommending abstinence is 'medical paternalism' which does not allow for women to make an informed decision based on the available evidence.

## **2.7 Prevention of maternal alcohol use**

### ***2.7.1 Maternity health services and alcohol prevention***

Historically, antenatal care was targeted to women from poor backgrounds with specific medical issues. However introducing universal antenatal care to all women was a public health success, as it significantly decreased maternal and infant mortality (Tulchinsky & Varavikova, 1999). Pregnancy is a 'window of opportunity' for behaviour change, and midwives play a key role in supporting healthy behaviours during pregnancy. The first appointment with antenatal care is most often the first time women get targeted health information relating to pregnancy. Midwives are therefore key players in health promotion to pregnant women (Beldon & Crozier, 2005; McLeod et al., 2003; PHE, 2013), and some have argued for greater public health approach in antenatal care for the benefit of the health of both expecting mother and the unborn child (McNeill et al., 2012). The coverage of antenatal care in the WHO European Region is the highest of all the world regions. According to 2009 statistics, 96% of women received care from a health care professional at least once during pregnancy, and 80.4% saw a health professional at least four times throughout the pregnancy (WHO, 2015).

Advice and information about alcohol use during pregnancy is regarded as an important topic by pregnant women, as well as midwives (Jones et al., 2011; Raymond et al., 2009). However, a qualitative study (N=24) from Australia by Jones et al. (2011) indicated disparities in experiences of women and midwives. Women perceived that alcohol was only mentioned in the initial appointment, while midwives reported always providing women with advice about alcohol. It has been suggested that discussions around alcohol are often only initiated if there are indications that the woman is drinking at high levels. Diekman et al. (2000) conducted a survey of a random sample of 604 obstetricians and gynaecologists, which showed that almost all practitioners (97%) would ask women about their alcohol use. Fifty percent of practitioners advised all patients about risks with drinking, whereas 36% provided such information only if the patient reported being a

current drinker or the clinician suspected drinking. Thirteen percent reported that they provided information if the patient displayed risk factors, such as current smoking or previous problems with alcohol use at high levels. Practitioners also identified barriers with speaking to patients about alcohol, including time constraints, patient sensitivity to the subject, and need for training.

In the UK, research has shown differences in the extent to which alcohol is addressed in antenatal care within the devolved nations of England and Scotland. A study of 624 midwives in East Anglia in England showed that 93% recommended pregnant women to abstain from alcohol, whereas 41% would also tell women about the recommended limit in the NICE guidelines. Sixty percent reported routinely asking women about their alcohol intake, 17% would ask if the woman presented with other risk factors such as smoking, and 10% did not ask at all. Only about one third of midwives reported routinely giving information about alcohol and pregnancy and 22% gave no information at all to pregnant women about alcohol (Winstone & Verity, 2015). A qualitative study of 21 Scottish midwives found that midwives adopted a cautious approach and advised abstinence, due to the ambiguous evidence base around low to moderate drinking. Midwives sometimes used their own alcohol habits to exemplify and put the conversation into context; midwives who were drinkers themselves expressed scepticism against complete abstinence, whereas midwives who did not drink firmly believed that pregnant women should not drink any alcohol. As drinking prior to pregnancy was seen as common, many midwives stressed the need for interventions pre-conception rather than after pregnancy recognition (Doi, Cheyne & Jepson, 2014).

### ***2.7.2 Advice to partners***

Research on involvement of the pregnant woman's partner in antenatal care is limited. The available evidence suggests that focusing on the woman often excludes the partner. A study by van der Wulp, Hoving and de Vries (2013) found that partners at times felt left out from the information about alcohol on, for example, websites, which appeared designed for women and did not address the partner's role in relation to alcohol. Furthermore, partners of women who consumed alcohol noted that they felt the midwives' ability to ask about alcohol consumption, and amount of information they got, could be improved. Specifically, partners wanted more information about the risks with alcohol exposure. This was also reflected in that only a few of the midwives in the study reported asking the partner about their alcohol use. In a survey of Norwegian midwives (N=103),

97% reported that they asked pregnant women about their alcohol use “always” or “most of the time”. However, only 24% asked the partner about their alcohol use (Wangberg, 2015).

There is some evidence to suggest that psycho-social support from a partner may be an important factor for women to abstain from alcohol. A randomised trial (N=304) in the USA, of the effectiveness of brief interventions (BI) when both woman and partner were included, showed that the intervention was more effective when the partner was involved among women who drank at higher levels at study enrolment (Chang et al., 2005). An intervention study from Sweden, which focused on a couple-based approach to discussing alcohol use during pregnancy and alcohol problems in the family, showed that partner support was related to greater likelihood of abstinence. Among the 509 couples that took part, many partners offered the pregnant woman support by not drinking with her. This was the case for the majority in the intervention group (75%) and the control group (67%). However, women in the intervention group were significantly more likely to report that their partner always offered them non-alcoholic options (77.1% vs 63.4%,  $p = 0.002$ ) (Högberg, Spak & Larsson, 2015).

### ***2.7.3 Screening for alcohol use during pregnancy***

The ‘WHO Guidelines for the identification and management of substance use and substance misuse during pregnancy’ states that pregnant women should be asked about their alcohol use as early as possible (WHO, 2014c). Validated screening tools are available for health professionals to assist in assessing alcohol use. These include AUDIT (Alcohol Use Identification Test), TWEAK (Tolerance, Worried, Eye-opener, Amnesia, Kut/Cut down) and CAGE (Cut down, Annoyed, Guilt and Eye-opener) (WHO, 2014c). Screening tools for hazardous drinking were initially researched and tested on men. Due to differences in drinking patterns, biological thresholds, and the fact that screening tools mainly focused on identifying dependency, made them less appropriate for pregnant women (Chang, 2001). Research in the 1980s focused on developing screening tools that would be appropriate for pregnant populations (Barry et al., 2009).

The T-ACE (Tolerance, Annoyed, Cut down and Eye-Opener) was the first validated instrument that showed high sensitivity to identify risky drinking in obstetrics and gynaecology settings. The instrument does not have a ‘socially correct answer’ and includes only four items, making it fast and easy to deliver, and can detect drinking at



different levels (Chang, 2001). A study by Chang et al. (1998) included 250 pregnant women who screened positive with the T-ACE instrument and 100 women who screened negative. For comparative reasons, AUDIT and SMAST (Short Michigan Alcohol Screening Test) were also used. The instruments were assessed using the DSM-III-R (Diagnostic and Statistical Manual of Mental Disorders) and included three criterion; lifetime alcohol diagnoses, risk drinking of regularly drinking 23g pure alcohol or more per day, and current drinking. The results showed that T-ACE positive women were significantly more likely to satisfy either one of the three DSM-III-R criteria. The conclusion was that T-ACE was the most sensitive screening instrument of the three and to a much higher degree identified women who were currently drinking.

The AUDIT tool, developed by WHO in the 1980s (Saunders et al., 1993a; Saunders, et al., 1993b), includes questions from the MAST, CAGE, and T-ACE instruments and was designed to detect harmful drinking and potential alcohol dependency (Chang, 2001). A shorter version of the AUDIT (AUDIT-C), containing only three of the original ten questions, has also been developed as a brief instrument which is easier to administer. Burns, Gray and Smith (2010) conducted a systematic review of screening instruments for pregnant women and found that the AUDIT-C had high sensitivity (95%) and specificity (85%) at cut-off score of three or more for risky drinking in the past year, defined as drinking more than seven drinks per week or three drinks or more per day at least once per month. The full AUDIT had high level of identification of lifetime alcohol dependency; however had lower sensitivity at specific cut-off scores than T-ACE. AUDIT-C had high sensitivity for alcohol dependency in the past year (100%), and alcohol use disorder (96%). The specificity for detecting dependency was 71% for both tools.

The TWEAK instrument, initially also developed to detect heavy drinking and alcohol dependency, has showed good results on pregnant populations. The test uses the definition of at-risk drinking of consuming one ounce (approximately 23g pure alcohol) or more of alcohol per day, and a cut-off score on the test of two points (Chang, 2001). The instrument has varied across studies; some have defined the first question as how many drinks a woman can 'hold' and others have asked how many drinks it takes for the woman to feel 'high'. Asking women how many drinks they can "hold" has shown higher sensitivity than the 'high' question (91% and 79%) for at-risk drinking before pregnancy, whereas the specificity for the 'high' question was higher than the 'hold' (77% and 83%). Any drinking during pregnancy, cut-off point of one point, showed sensitivity of 66% and

specificity of 64%, whereas at-risk drinking during pregnancy had sensitivity of 71% and specificity of 73%. The CAGE test has shown poor performance in identifying risk drinking among women in general and subsequently also unable to detect risk drinking in pregnant populations, with low sensitivity scores. Also the SMAST (Short Michigan Alcohol Screening Test) test showed poor performance in identifying risk drinking during pregnancy, with low sensitivity albeit high specificity (11% and 96%, respectively) (Burns, Gray & Smith, 2010).

Despite benefits of using screening tools, there are concerns of the implications of asking detailed questions about drinking, including women's privacy and potential fear of stigma from disclosing alcohol use (WHO, 2014c). Research from Australia has shown that many women expect questions about alcohol and perceive them as acceptable, without feeling discomfort (Muggli et al., 2015; Seib et al., 2012). However, Muggli et al. (2015) found that women expressed concerns about getting too detailed questions as it may cause worry regarding alcohol consumption before pregnancy recognition. Furthermore, women who were moderate or heavy drinkers expressed fear of being judged for their level of drinking, and were likely to under-report their intake. Women identified barriers with assessing alcohol habits in maternity services, including not recalling alcohol consumption in a life history context. Women also preferred to categorise their drinking in their own words, and would not necessarily identify with terms such as 'intoxication'. Women would feel more encouraged to provide accurate report of their alcohol use included describing their consumption in drinks rather than standard measures or units. Importantly, women also felt that an option for 'occasional drinking' and report their drinking anonymously.

#### ***2.7.4 Interventions to prevent alcohol-related birth defects***

Prevention of alcohol-related birth defects can focus at reducing AEP risk among non-pregnant women or at reducing or preventing alcohol use among pregnant women. Interventions can be universal (such as media campaigns and educational interventions) or targeted/indicated (such as BI) or cognitive behavioural therapy) (Barry et al., 2009).

Brief interventions are "those practices that aim to identify a real or potential alcohol problem and motivate an individual to do something about it" (Babor & Higgins-Biddle, 2001, p. 6). In combination with screening, BI is a way for health professionals to raise the question about patients' alcohol consumption and support behaviour change for people who drink at hazardous or harmful levels (Babor & Higgins-Biddle, 2001). In primary care

settings, BI has demonstrated good effectiveness in reducing harmful and hazardous drinking (Gebara et al., 2013; Kaner et al., 2009), but for pregnant women the evidence is overall inconsistent (Gilinsky, Swanson & Power, 2011). A systematic review of randomized controlled trials (RCTs) only found four studies that fit the inclusion criteria. The overall conclusions of the review was that despite that psychological and educational interventions appeared to have some impact on reducing alcohol consumption, the paucity of studies along with high risk of bias within studies limit the possibility to draw conclusions about effectiveness of interventions (Stade et al., 2009).

Results from individual studies have shown promising results from various types of interventions in promoting abstinence or reducing alcohol use. For example, van der Wulp et al. (2014) found that women who received a computer-tailored feedback intervention were more likely to abstain from alcohol than women who received standard care (OR = 2.77, 95% CI 1.02–7.34) at six months follow-up. The intervention was also compared with health counselling with a midwife, where the intervention performed no better than the health counselling and there was no significant difference between standard care and health counselling. The computer-tailored intervention significantly reduced alcohol use among women who consumed one standard deviation below the mean before pregnancy ( $p < 0.001$ ), but not among women who drank above the mean ( $p = 0.57$ ). O'Connor and Whaley (2007) found that a single-session of BI was associated with significantly higher odds of abstinence, compared to women who received assessment only (OR = 5.39, 95% CI 1.59–18.25,  $p < 0.05$ ). Among women who prior to the enrolment in the study (around 18 weeks) drank two standard drinks or more per occasion and received the intervention had better birth outcomes (for example higher birth weight) than the control group (O'Connor & Whaley, 2007).

Although research on universal interventions (educational and public health interventions) is limited, a review of studies suggested that these types of interventions can increase awareness of risks with drinking alcohol during pregnancy (Crawford-Williams et al., 2015a). Specifically, a study of a campaign targeting American Indian women found that women of childbearing age perceived an increase in knowledge of FAS (91.6%) and risks with drinking alcohol when pregnant (93.3%). The majority (71.8%) of the 119 women included in the study reported that they had reduced their drinking as a result of the campaign (Hanson, Winberg & Elliot, 2012). An American study of a multimedia campaign targeting pregnant women found that women exposed to the intervention were

more likely to have talked to at least one friend about alcohol and pregnancy (58.3% versus 49.4%,  $p = 0.05$ ) (Lowe et al., 2010). Yet the design of messages targeting pregnant women may influence their response to the information. An experimental study of 354 pregnant and non-pregnant Australian women showed that messages with a threat appeal (focusing on the risks from alcohol exposure) and a combined message of threat appeal and self-efficacy (focusing on behaviour change in the context of women's social situations and peer support) was significantly associated with women's intention and confidence to abstain from or reduce their alcohol during pregnancy, compared to the control condition (France et al., 2014). A more recently published RCT study including 564 Swedish women indicated that simply providing written information can encourage women not to drink. Women who received an information leaflet prior to the first antenatal visit were more than twice as likely to abstain, compared to women in the control group (OR = 2.6, 95% CI: 1.3–5.1,  $p = 0.005$ ) (Bortes et al., 2015). Another RCT including 161 pregnant women in Australia found that an intervention of an information booklet with mocktail (non-alcoholic cocktails) recipes significantly improved attitudes and knowledge of drinking during pregnancy. However, compared to the control group, who received standard antenatal care only, there was no significant difference in abstinence (RR = 1.3, 95% CI: .97–1.75,  $p = 0.077$ ) (Crawford-Williams et al., 2016).

Research has also suggested that certain factors influence the success of interventions, such as partner support. A study of 304 women and their partners in the USA showed that a single-session BI was more effective on women who consumed alcohol at higher levels when they enrolled in the study, and whose partner took part in the intervention (Chang et al., 2005). Another study of 526 couples in Sweden found that while there was no difference in abstinence rates between the intervention group and the control group, psycho-social support from partners was higher in the interventions group. Women who received the intervention, a dialogue with the midwife from a life cycle perspective on alcohol which also included history of alcoholism in the family, were significantly more likely to report that their partner always offered them non-alcoholic alternatives (OR = 2.13, 95% CI 1.29–3.51) (Högberg, Spak & Larsson, 2015).

Overall, the literature is not conclusive on effective interventions for pregnant women. It has been suggested that women who continue to drink during pregnancy may need more intense interventions, especially women who drink at higher levels (Gilinsky, Swanson & Power, 2011). This may be one reason why remote interventions have been effective on

women who drink at lower levels (van der Wulp et al., 2014) and face-to-face BI has shown positive effects on women who drink at higher levels (Chang et al., 2005; Marais et al., 2010). One interesting observation is that several studies have not found significant effects of interventions, due reductions in intake also in the control group. In some studies, the control group received assessment only, meaning they were screened for alcohol use (Osterman & Dyehouse, 2012; Tzilos et al., 2011). It is known that screening can influence behaviour change (McCambridge & Kypri, 2011), which emphasises the importance of screening and brief intervention in antenatal care, as recommended in the WHO 'Guidelines for the identification and management of substance use and substance misuse during pregnancy' (WHO, 2014c).

Qualitative work on the implementation of BI in antenatal care in Scotland has shown that many midwives felt they did not have enough experience through practice of using BI, due to most women reporting not drinking alcohol. Midwives believed the first appointment to be the best time to do screening and deliver BI, even though they were concerned about potential negative effects on their relationship with the woman. Gaining trust of the woman at the initial meeting was perceived as important and discussing alcohol was mentioned as a possible barrier to establish a good relationship. Midwives listed time constraint and heavy work load as a barrier to alcohol brief interventions, as alcohol therefore was not prioritised. Conversion of alcoholic drinks into units was also mentioned as a barrier (Doi, Cheyne & Jepson, 2014), which is consistent with barriers mentioned by women for accurately report their alcohol consumption (Muggli et al., 2015).

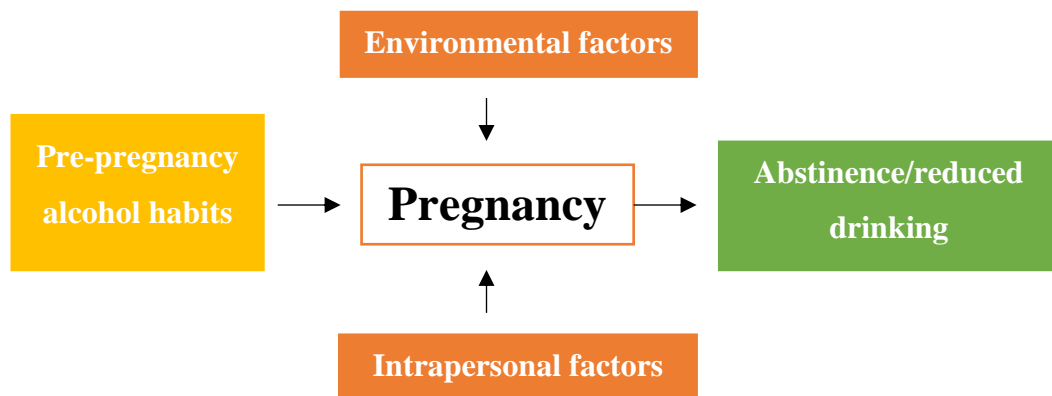
In summary, whilst the evidence for effective interventions to prevent alcohol exposure during pregnancy is limited (Crawford-Williams et al., 2015a; Gilinsky, Swanson & Power, 2011; Stade et al., 2009) some approaches appear to be successful. Focusing on involving the pregnant woman's partner and considering the mode of delivery (face-to-face or computer-based) may be important for the intervention to be effective. However, interventions may have different impact on women drinking at high levels, compared to those consuming small amounts.

## **2.8 Conceptual framework**

The conceptual framework for this thesis was developed based on the existing literature, which indicates that there are many factors that influence pregnant women to continue to

use alcohol. But for the interest of creating a model or a framework on which the research is based on, factors influencing abstinence are equally important. If we adhere to the research, and the recommendations that have previously been presented, abstinence is most commonly considered the best option to ensure that no harm is caused to the baby. As mentioned in 2.6.2, criticism towards total abstinence policy exists (Gavaghan, 2009) and the precautionary principle has had precedence in the light of ambiguous evidence of the risks with low to moderate drinking (Leppo & Hecksher, 2011). Figure 2 shows a simple logic model guiding this study, in which the aim was to explore environmental factors' and intrapersonal factors' influence on women's drinking behaviour. Based on the existing literature, pre-pregnancy drinking habits were also explored as part of this model.

**Figure 2. Simple framework guiding the development of the study**



In the following sections I develop this simple model into a more comprehensive conceptual framework, which guided the design of this study. The study was designed based on behaviour change theories on the individual as well as wider systems beyond individual factors.

### ***2.8.1 Teachable Moments***

Building on the simple model described in the previous section, pregnancy is described in the wider literature as a particular moment in life where women are inclined to alter health behaviours (Beldon & Crozier, 2005; Smedley et al., 2014). Pregnancy has therefore been referred to as a ‘window of opportunity’ for health promotion, or a teachable moment, in relation to for example smoking. McBride, Emmons and Lipkus (2003) argued that; “Pregnancy has been referred to widely as a teachable moment because of mothers’ strong motivation to protect the well-being of the fetus and strong social pressure to avoid smoking during pregnancy” (p.129). The concept is based on that life events (such as

hospitalisation or pregnancy) act as a motivation for individuals to improve their health due, as perception of risk increases. Underlying factors of teachable moments also include increased emotions, the individual's re-definition of self and/or social role, and perceived positive outcomes from modified behaviour. These factors contribute the discernment that a change in behaviour is important and greater motivation to make that change (Lawson & Flocke, 2009). McBride, Emmons and Lipkus (2003) acknowledged that the term teachable moments is widely used, however the definition varies. Teachable moments can be defined as an event or context which impacts behaviour change; the more common use of the term that it is an opportunity for behaviour change.

Pregnancy itself can trigger behaviour change following a positive pregnancy test (Edvardsson et al., 2011). This is evident for example in the literature around smoking during pregnancy, which suggests that 'spontaneous quitters' are more prevalent in pregnant women than other smoking populations; around half of smoking women quit spontaneously when they get pregnant. Stronger belief of harm is one factor associated with higher likelihood of spontaneous smoking cessation, making pregnancy a teachable moment (Chamberlain et al., 2013).

In the current research I define teachable moments as an event or context, as this definition implies that these events provide an opportunity for interventions to address the factors that can increase motivation to change behaviour. Pregnancy recognition can increase women's motivation to change health-related behaviours as immediate behaviour changed followed a positive pregnancy test. A strong motivation is the perceived risk to the foetus by exposure to, for example, alcohol or cigarettes and even though women may change their drinking before the first visit with antenatal care, women are receptive to information and advice (Edvardsson et al., 2011).

Health professionals recognise that women are motivated to change behavioural risks and have strategies for using this time to help women change (Herzig et al., 2006). The event, or context, of pregnancy means the woman has increased emotions and increased perceptions of risk from engaging in different behaviours. In addition, pregnancy is a time when a woman will re-define her social role and perception of self as she is entering motherhood (Bailey, 1999). However, in addition to these aspects of behaviour change, motivation, skills, and self-efficacy are important components for pregnancy to be a teachable moment and result in changed drinking habits (McBride, Emmons & Lipkus,

2003). For the current research, the focus was not only on the intrapersonal factors that provide an initial opportunity to spontaneously change drinking behaviour, but also the interpersonal factors (such as advice from midwife or partner's drinking habits) that may influence on motivation or the acquisition of skills to act upon individual feelings and/or attitudes.

While 'teachable moments' is a useful way of thinking of behaviour change during pregnancy, it works on the assumption that the event (pregnancy) will trigger change (abstinence/reduced drinking). However, as the literature review has suggested, alcohol use during pregnancy is a complex issue and several factors may act as barriers for women to make the desired changes (abstinence, as noted in official drinking guidelines see 2.6.2). Negative views on recommendation and translation into one's own situation may explain why some women continue to drink. In the following sections I will introduce models that expand on these issues and take into consideration a wider context.

### ***2.8.2 The Health Belief Model***

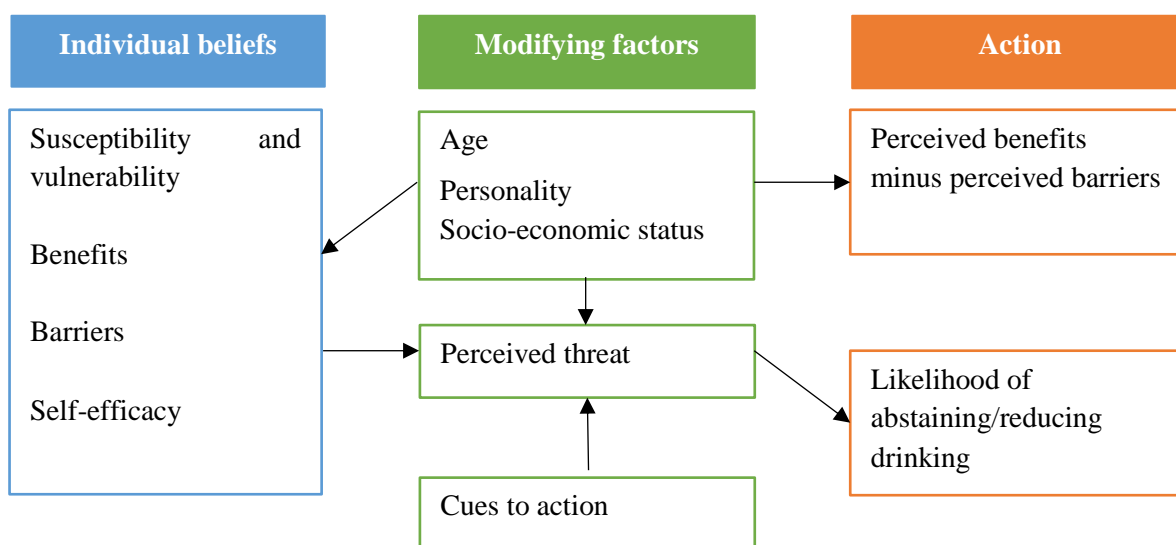
As an expansion on teachable moments, the health belief model (HBM) provides a more in-depth description of behaviour change, and factors that can be addressed to promote/support a change in health behaviour. The main concepts of the model are the individual's beliefs that the event (here negative effects on pregnancy and/or baby) in question is serious, that they are susceptible to the event, that avoiding the behaviour will reduce the likelihood of the event, that avoiding the behaviour is not at a high cost for the individual, that there are cues to action (such as media or personal influences), and finally motivation to alter the behaviour constituting the risk for an event (Tones et al., 2004). The model was originally presented by Rosenstock (1966), but has since been modified and used extensively throughout the literature on behaviour change (Glanz et al., 2008). The HBM further extends on the idea of teachable moments by expanding to more contextual factors. Furthermore, teachable moments do not include the aspect of actions that influence individual to alter their behaviour, or the aspect of the relationship between health professional and patient/service user.

Figure 3 shows the constructs of the HBM and how they relate to each other. As an extension to teachable moments, HBM also includes 'cues to action. Lawson and Flocke (2009) argued that for behaviour change to occur, interaction with for example health professionals to emphasise the need for, and benefits of, that change. For the current



research, HBM is a suitable model as it takes into consideration the positive and negative factors (benefits and barriers) (Naidoo & Wills, 2000) that form part of the likelihood of ceasing/reducing drinking. Within a medical paradigm risk is a central focus, but research has shown that women's evaluation of risk is complex in relation to, for example, the pleasure aspect (Crawford-Williams et al., 2015b; Ford, 2013; Meurk et al., 2014), which is why the aspect of benefits or pleasure from drinking is important to address.

**Figure 3. Constructs of the Health Belief Model (adapted from Glanz, 2008)**



In summary, the behaviour (drinking or abstinence) is determined by the interaction between knowledge of the risks with drinking (which are influenced by age, personality, socio-economic status), perceptions of susceptibility/vulnerability for those risks, barriers (such as partner or pregnant friends who are drinking/encourage drinking), benefits (such as relaxation). Cues to action are an important construct, as in the instance of pregnancy this could be advice from health professionals or from other people in the woman's social environment. Criticism of the health belief model has included that all factors are weighted in more or less equal measure, whereas in reality one factor may have greater importance than another. This leads to the conclusion that the use of the model in predicting behaviour may not be appropriate, but that it is a useful model for exploring complex interactions between constructs (Naidoo & Wills, 2000). Previous research has used theoretical models such as theory of planned behaviour (Duncan et al., 2012), the transtheoretical model of behaviour change (Bortes et al., 2015), and Theory of Reasoned Action (Morrison, Spencer and Gillmore, 1998), which are valuable social cognition models to explore attitudes and subjective norms that impact behaviour (Glanz et al., 2008). However for the

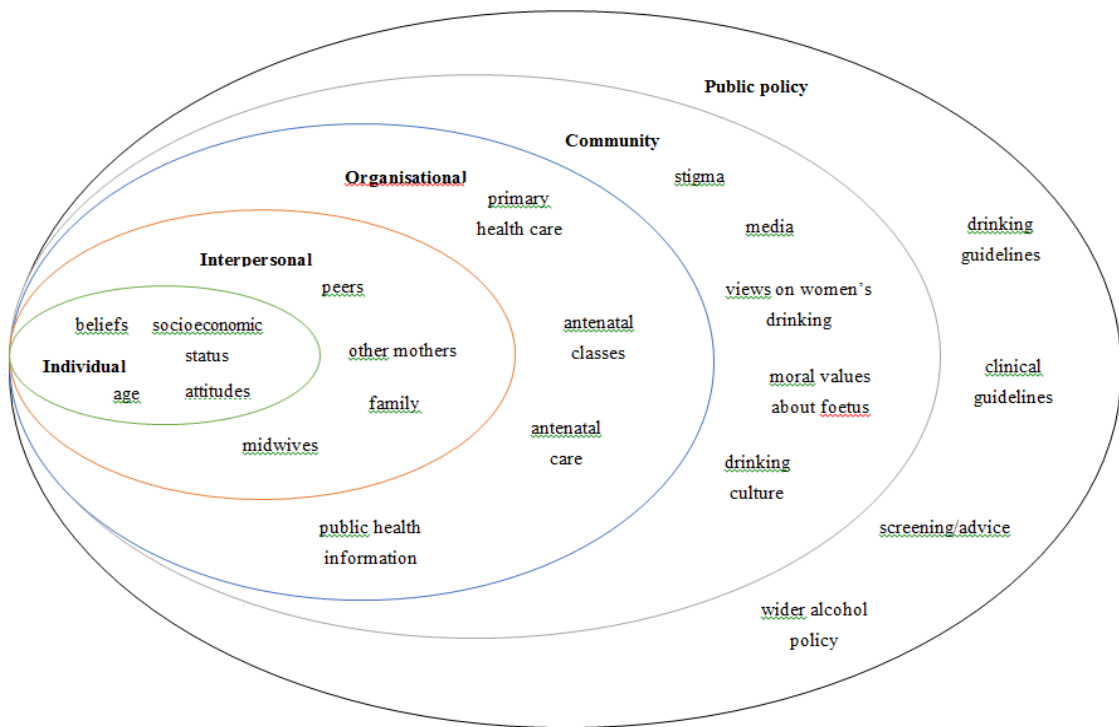
current research, external influences through guidance and advice was in focus, which meant HBM was better fit for purpose.

### ***2.8.3 The Socio-ecological model of health***

The current research has a cross-cultural design, and for that reason factors within a wider system was important in order to understand why prenatal alcohol use may differ between England and Sweden. The literature review suggested that there are linkages between individual factors, interpersonal factors, and wider environment. One of the profound differences from the outset in designing this research was the difference in official drinking guidelines in England and Sweden. Within the public health field, socio-ecological models have been used to describe complex health issues such as intimate partner and sexual violence (WHO/LSHTM, 2010), child maltreatment (WHO, 2013d), and substance abuse and child neglect (Cash & Wilke, 2003). As the study compared two different countries, addressing wider contextual factors in the design was important in order to explore levels of factors within a wider system (Figure 4). Understanding these wider systems and the factors within them can help develop understanding of population level interventions, rather than individually focused, that can promote behaviour change and reduce alcohol exposure during pregnancy.

The socio-ecological model of health was originally developed by Bronfenbrenner (1979) as a theoretical model of human development, taking into account not only the individual but influence from environmental factors. As the model has developed within the public health field, policy is a key to support healthy lifestyles, as argued by Sallis, Owen and Fisher (2008); “Behavior change is expected to be maximized when environments and policies support healthful choices, when social norms and social support for healthful choices are strong, and when individuals are motivated and educated to make those choices” (p.466). Behaviour change on an individual level is therefore influenced by many external factors in (Sallis, Owen & Fisher, 2008), which is relevant when discussing differences between countries and how to address prenatal alcohol use from a policy perspective. While ecological models are useful in designing health promotion or prevention interventions, as systems beyond the individual level can be targeted and prevent unwanted outcomes without individual action (Raingruber, 2014). However, the model is weakened by the difficulties in establishing how factors at different levels influence behaviour (Sallis, Owen & Fisher, 2008).

**Figure 4. Socio-Ecological model of alcohol use during pregnancy (developed from Sallis, Owen and Fisher, 2008)**



#### ***2.8.4 Utilisation of the conceptual framework***

The theoretical and conceptual frameworks presented here were used to design this research, specifically in relation to formulating the questions guiding the development of the studies (Figure 5, section 3.2). The models described here also assisted in making sense of the literature to make choices of participants and the overall mixed methods design of the research. Specifically, the comparative approach needed consideration of wider factors that may influence behaviour and the socio-ecological model provides a framework for exploring interaction between different systems. While these models have acknowledged limitations and weaknesses in predicting behaviour (Naidoo & Wills, 2000; Raingruber, 2014; Sallis, Owen & Fisher, 2008;) their feasibility in informing the design of this research was useful in order to understand the complexity of factors involved in prenatal alcohol use during pregnancy. Furthermore, as has been described, the individual level behaviour change models of teachable moments and health belief model contribute with constructs such as risk perception that influence behaviour on the individual level, but is determined by wider social norms in society.

In addition to above mentioned models, models such as the COM-B model (capability, opportunity and motivation) also exists, which may assist in the design and understanding

of interventions to change health behaviours (Michie, van Stralen & West, 2011). However, the strong focus on external factors in this model made it less fit for purpose to explore the perceptions and social norms of individuals, which may influence decisions around alcohol use during pregnancy.

## **2.9 Summary**

In this chapter I have provided an overview of the literature on women's alcohol use before and during pregnancy, policy frameworks to prevent alcohol-related birth defects, and the conceptual framework within which this research was designed. The literature suggests that the evidence around drinking smaller amounts of alcohol is currently not clear. In addition, the true prevalence of alcohol-related birth defects is not known and neither is the prevalence of prenatal alcohol use. Despite these issues, national as well as global policy indicates that drinking among pregnant women is an important public health issue. The discourse is however heavily influenced by the ambiguity of the risks around drinking low to moderate amounts during pregnancy which, as I have argued, begins with the wider perceptions around women's alcohol use.

Drinking among women has become more prevalent over time, yet within a context where women's drinking is framed differently than men's. Implications of alcohol consumption on reproduction, as well as responsibilities associated with motherhood, contribute to more negative discourses of women's alcohol use. As alcohol has become part of many women's lives, pregnancy cannot be viewed as an isolated event in life for prevention. While the evidence is not clear on the effectiveness of interventions for pregnant women, there are opportunities to encourage women to change their drinking behaviour through screening and BI in antenatal care (WHO, 2014c). Health professionals may however not consistently assess pregnant women's alcohol use and provide such information. In order to implement guidelines, and to ensure consistency, further understanding of the conceptualisation of alcohol use during pregnancy among health professionals is warranted. In order for services to provide the best support to women, and their partners, a greater understanding prenatal alcohol use, influence of social factors, and implications of policy are needed. We need to understand not only how health professionals approach women, but what experiences expectant parents bring into antenatal care and how social factors may mediate behaviour change. In the next chapter I will give an overview of the methodology for the study and the methods used in each phase of the study.

## **Chapter 3 - Methodology**

### ***3.1 Introduction***

This chapter gives an overview of the overall methodology underpinning this research project. In the subsequent sections the underpinning paradigm of the chosen methodology, aspects of conducting cross-cultural research, the research settings and samples, data collection methods, data analysis methods, ethical considerations, and limitations of the study are described.

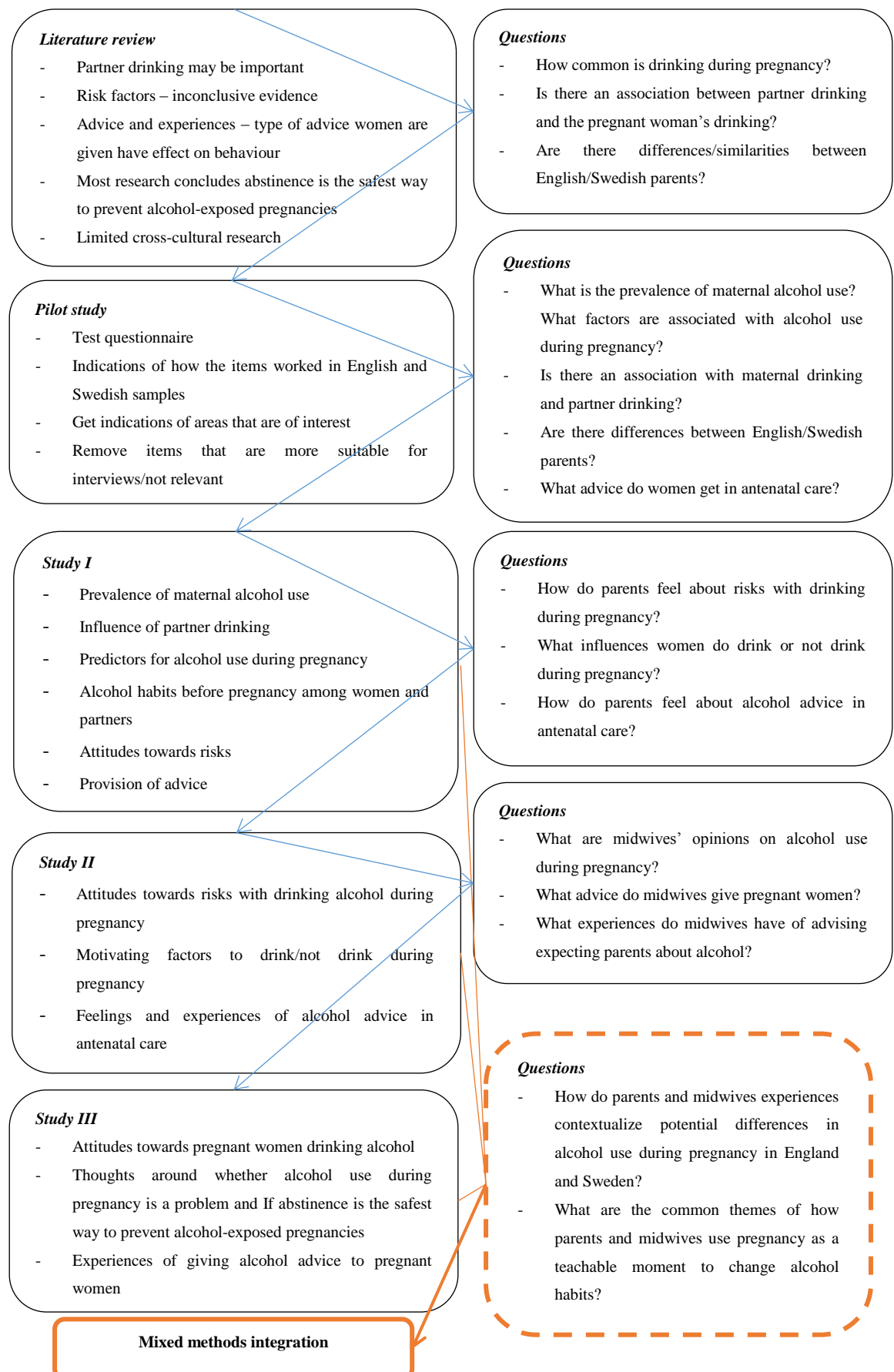
### ***3.2 Aim and research questions***

The purpose of this mixed methods study was to study the prevalence and attitudes towards alcohol use during pregnancy, and perceptions of advice and guidance of alcohol among parents and midwives in England and Sweden. The overall aim for this research was to compare and contrast a country where strict abstinence advice to pregnant women (Sweden) was endorsed, with a country where the advice that also included a recommendation for a maximum level of drinking (England) (see Box 1 in section 1.3). The research project was divided into three specific studies; a retrospective survey of alcohol habits before and during pregnancy (Study I), an interview study with parents exploring perceptions around drinking during pregnancy and advice from antenatal care (Study II), and a study of midwives' views on alcohol use during pregnancy and prevention in antenatal care (Study III). The research questions for this research were:

1. What is the prevalence of retrospective self-reported alcohol use during pregnancy in England and Sweden?
2. What factors are associated with continued alcohol use?
3. What are parents' attitudes and practices of alcohol use during pregnancy in England and Sweden?
4. What are midwives' perceptions of pregnancy drinking guidelines and women's alcohol use during pregnancy in England and Sweden?
5. What are midwives' practices of providing alcohol advice in antenatal care?

Figure 5 shows the questions guiding each component of the overall study and how each question informed the next step of the research. This is shown as a sequential process, starting at the beginning of the PhD research in 2012.

**Figure 5. Overview of research project and the interlinked questions guiding the development of individual studies**



### **3.3 Mixed Methods Research (MMR)**

#### ***3.3.1 Pragmatism***

As a paradigm, pragmatism has been suggested the most appropriate for MMR, however several other paradigmatic perspectives have underpinned MMR (Shannon-Baker, 2015). Pragmatism focuses on problem-solving, where the research question guides the design of the research rather than a focus on specific methods of philosophical aspects (Creswell & Plano Clark, 2011; Neale, 2008). However, Morgan (2014) argued that labelling pragmatism as a paradigm for problem-solving does not capture what pragmatism is really about. Morgan argued that pragmatism is more than simply “making technical decisions about research methods because of the commitments we make when we chose one way rather than the other” (p.1046). Therefore, pragmatism is about defining ‘why to’ rather than ‘how to’, providing a different way of thinking about research than the traditional research camps of purely quantitative or qualitative methodologies. This is a reflection of the origins of pragmatism in the work of John Dewey, who emphasised the concept of inquiry, in which human experience is central, as opposed to the traditional divides of positivism/interpretivism and objectivism/constructivism of reality and knowledge (Dewey, 1941).

#### ***3.3.2 The choice of a MMR design***

Alcohol use during pregnancy is a complex issue and constricting the research to one of the traditional research paradigms would not be sufficient in exploring such complexities. Creswell and Plano Clark (2011) described several reasons for choosing MMR as research methodology. After initial scoping of the literature for the current study, there were two prominent reasons for choosing a MMR design, underpinned by pragmatism. The first reason relates to the different types of research available on the topic of alcohol and pregnancy. Many studies have employed quantitative methods to assess levels of alcohol use during pregnancy, and some conclusions can be drawn about how women change their alcohol habits when they get pregnant. There is however a lack of studies integrating quantitative and qualitative methods that further develops an understanding of why women continue to drink during pregnancy. The current research was based on theoretical models on behaviour change (see section 2.8), and focused on the research problem rather than having a strong alignment with a methodological paradigm. Using a MMR design would therefore addresses the quantitative variables of drinking during pregnancy, whilst also

exploring social constructs relating to those variables through the narratives of women and health professionals. In addition, there is limited research that explores influence from the pregnant woman's partner on continued alcohol use. Quantitative research has shown an increased likelihood of prenatal alcohol use when the partner is a heavy drinker (Bakhireva et al., 2011), but also that partners appear to change their drinking habits during pregnancy (Mellingen, Torsheim & Thuen, 2013). Within the limited qualitative studies, the importance of making joint decisions about drinking (Crawford-Williams et al., 2015b), as well as joint drinking habits within the couple (van der Wulp, Hoving & de Vries, 2013), has been highlighted. Research bringing these aspects together was an evident gap in the literature, and calling for greater exploration of how these constructs may vary between different cultures.

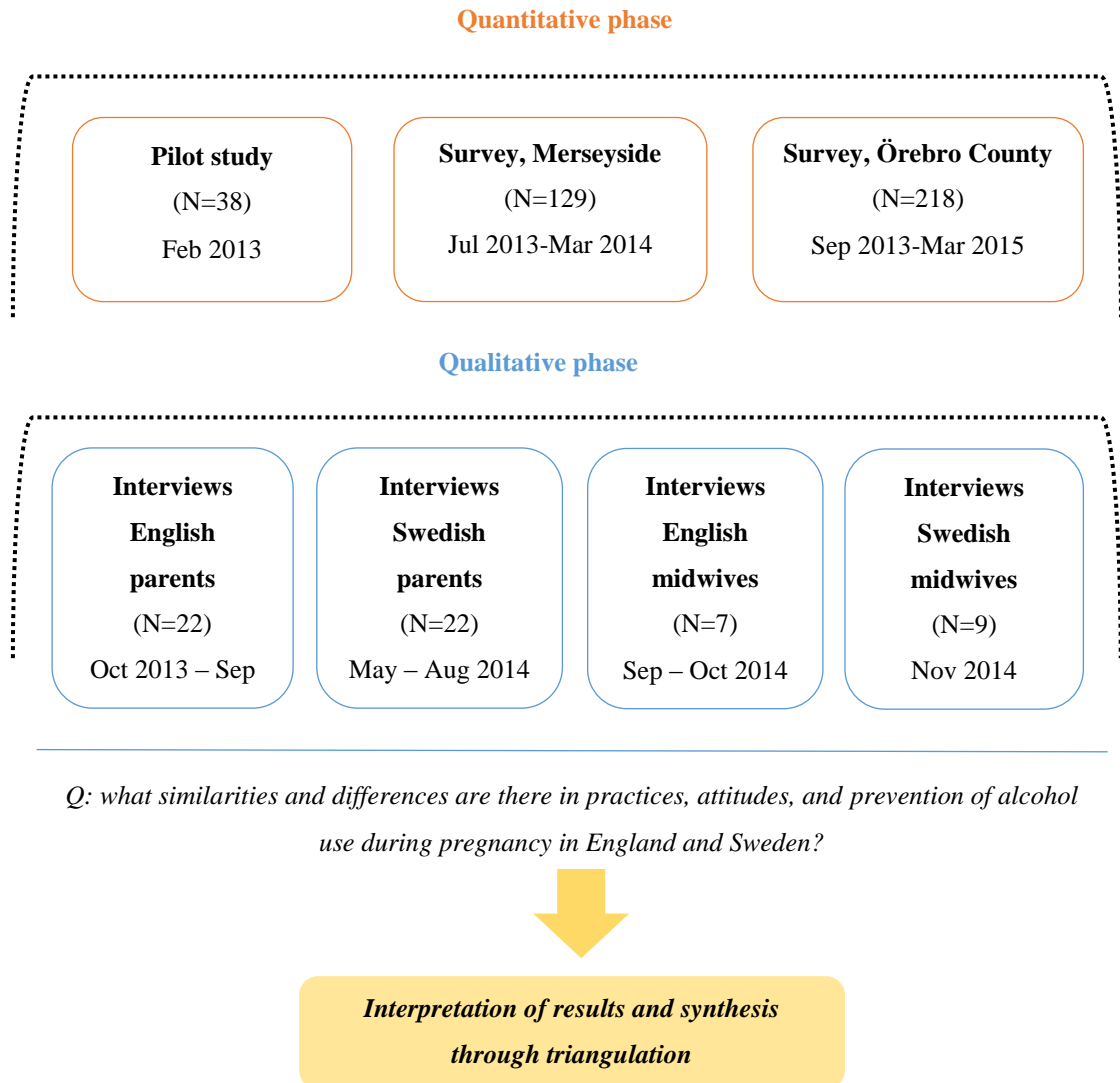
The second reason relates to the application of a theoretical lens to the research topic. Whilst alcohol use during pregnancy is viewed as an important public health issue, it is a medicalised issue with less attention paid to social aspects. There is some tension between the medical paradigm focusing on the foetus and the social paradigm, putting the woman's autonomy at the centre (Lupton, 2012; Markens, Browner & Press, 1997). Applying a public health perspective to this topic, through a MMR design, would therefore contribute to greater understanding of these competing views.

### ***3.3.3 Parallel convergent design***

This MMR study was conducted using a parallel convergent design. The main features of this approach are that data for each phase of the study are collected concurrently and results from the qualitative and quantitative strands are interpreted in a synthesised analysis at the end of all phases (Creswell & Plano Clark, 2011). Figure 6 shows the sequence in which each step of the project was conducted.



**Figure 6. Implementation of the parallel convergent study design**



The convergent design allows for addressing exploratory questions (within the qualitative strand) and confirmatory questions (within the quantitative strand). In the current study, the quantitative phase was initiated first, and the pilot study of the questionnaire informed the qualitative phase. Specifically, the interviews were designed to cover topics of interest in the questionnaire (such as alcohol consumption on special occasions and partner's drinking during pregnancy) (Teddle & Tashakkori, 2006). This design was chosen due to the limited time to undertake the research, as well as the equal priority the two strands were given (Creswell & Plano Clark, 2011).

Whilst the convergent design has the advantage of verifying as well as generating theory within the same study, there are limitations. According Teddle and Tashakkori (2006) there are three aspects of concurrent design that are important in relation to designing and implementing this type of approach. Firstly, as the same topic is explored together and

separately, through different methodologies, this approach requires expertise. Secondly, the synthesis of the collected data can be difficult in order to create a coherent picture within ‘meta inferences’ at the final stage. Finally, any discrepancies in the findings may be difficult to interpret for an inexperienced researcher. Due to the challenges with running multiple strands simultaneously, it means that the design is more suitable for collaborative teams; as a single researcher it can be difficult to keep the strands completely independent. However, despite these limitations in the operationalisation of the research, it was the most appropriate design for the topic covered in this thesis.

This research was commenced in 2013 and data collection was concluded in early 2015. The three studies included in this mixed methods study and the specific methods used for each one are outlined in Table 3. In the following sections of this Chapter, I will describe the methods for each of the included studies.

**Table 3. Overview of the research project**

Study	Study design	Recruitment	Participants	Data collection	Data analysis
I	Cross-sectional survey	Children’s centres (Merseyside), GP/Child Health Care Centre’s (Örebro County), and online survey (Merseyside)	Parents who recently had a baby ( $\leq 12$ months) in Merseyside and Örebro County	Questionnaires of retrospective reports by women and partners regarding alcohol use during pregnancy (N=347; England n=126, Sweden n=218)	Descriptive, between samples comparisons, and hierarchical regression analysis
II	Interpretive qualitative study	Children’s Centres (Merseyside), GP/Child Health Care Centre’s (Örebro County), social media (e.g. Facebook) and informal networks (both)	Parents of children aged $\leq 18$ months in Merseyside and Örebro County	Semi-structured interviews (N=44; England n=22, Sweden n=22)	Inductive thematic analysis
III	Interpretive qualitative study	Local maternity health care services (Merseyside) and regional maternal health care (Örebro County)	Midwives working in antenatal care in Merseyside and Örebro County	Semi-structured interviews (N=16; England n=7, Sweden n=9)	Inductive thematic analysis

## 3.4 Quantitative phase

The main objective of quantitative public health research, situated within the positivist paradigm, is to study health in a population. Survey research aims to provide generalisable data for a large population in a systematic way, which is ideally done using randomised sampling techniques to assure representativeness (Neale, 2008). Study I was a cross-sectional survey, conducted July 2013 to March 2014 in Merseyside, and September 2014 to April 2015 in Örebro County. The study was designed to further add to the literature on alcohol use during pregnancy, with specific focus on i) differences in prevalence of prenatal use between two countries with different guidance on drinking during pregnancy, ii) the influence of partner drinking, and iii) whether the option of ‘special occasion’ drinking would fill a previous gap in the literature and provide further explanation of nuances of alcohol use during pregnancy. The study utilised a questionnaire developed for the purpose of the study. A self-completed questionnaire was chosen as the method for this study, as anonymity may encourage more accurate reporting of alcohol use. As stigma around prenatal alcohol use is a known issue (Room, 2005), this method was appropriate given the sensitivity of the topics included. Retrospective reporting was chosen for two reasons; i) the anticipated sensitivity of asking women about drinking whilst pregnant and ii) to enable comparison of drinking throughout the entire pregnancy. Initial scoping of the literature showed that retrospective reports had previously been used up to 13 months post-birth, with accuracy similar to those reports taken during pregnancy (Alvik et al., 2006a).

### 3.4.1 Aim and objectives

The aim of this study was to investigate the prevalence of and factors associated with alcohol use during pregnancy among women in England and Sweden, and addressed 1–2 of the overall research questions (see 3.2). The specific research question was:

- What is the prevalence of retrospective self-reported alcohol use during pregnancy in England and Sweden and what factors are associated with continued use?

The specific objectives of this study were to:

1. Estimate the prevalence of retrospectively reported alcohol use during pregnancy among women who had recently been pregnant;
2. Examine factors associated with continued alcohol use during pregnancy, in particular the influence and significance of perceived alcohol consumption in the partner's on women's reported alcohol use during pregnancy; and
3. Compare prevalence and associated factors in a sample of English and Swedish parents.

### ***3.4.2 Pilot study***

A pilot questionnaire was developed based on a scoping of the literature to capture seven areas, in addition to demographic information; i) pregnancy (such as number of times pregnant), ii) alcohol consumption before, during, and after pregnancy, iii) mental wellbeing and happiness, iv) information about alcohol, v) partner's consumption before, during, and after pregnancy, vi) health behaviours during pregnancy (such as diet and smoking), and vii) attitudes and perceptions around lifestyle during pregnancy. The included questions were taken from previously used questionnaires, as well as developed specifically for the purpose of the current study (for details of included questions in the final version see section 3.4.4). All questions were discussed with the supervisory team.

A pilot study was conducted in February 2013 to test the developed questionnaires. A convenience sample of 19 English and 19 Swedish parents (N=36) were recruited through informal networks. The questionnaire was translated into Swedish and back-translated (see section 3.6) to ensure accuracy of the included items. The questionnaires were tested through interview mode, where questions were read out to the respondent to allow for feedback on items that were unclear. Items that were not regarded as relevant were removed after the pilot study. For example, current alcohol consumption (post-pregnancy) was removed as the time since birth varied greatly among parents and was not directly related to the research question. General health and well-being questions were removed as they were not directly relevant to the research question. The remaining items however were relevant and no participant expressed feeling uncomfortable with any of the questions.

### ***3.4.3 Sampling strategy***

The study employed two different recruitment strategies, which were a result of the opportunities provided in each country. As shown in Table 2 (section 3.3.3), recruitment of participants in England was more opportunistic than in Sweden. Merseyside has 26 Sure Start Children's Centres (from here on referred to as 'children's centres'), which are local services for parents relating to, for example, health or parenting. Initially, all children's centres in Merseyside were contacted with a request to participate in the study, to which only a few responded. The children's centres either offered to distribute the questionnaires at organised activities for new parents at their premises, or invited me to their premises to distribute questionnaires myself. Due to difficulties with this recruitment method, an online version of the questionnaire was created and shared on social media (Facebook and Twitter, for example see Appendix A) and online forums, such as MumsNet, to increase number of respondents.

In Örebro County collaboration with the regional child health care coordinator was established with help from the collaborating institution Örebro University. This allowed a more systematic approach, as all parents attending a five-month check-up were invited to take part in the study. The questionnaires were distributed by the child health nurses, who see babies several times within the first year post birth. As access was granted to distribute the questionnaires through all child health care centres from the head of child health care in the region, no online survey was created for the Swedish part of the study. Parents were invited to take part in the study over a six-month period.

#### **Sample size calculation**

The estimated sample needed in the two locations was 376 women in Merseyside (based on a 50% response rate; 5% margin of error; 95% CI; and the total 16,537 births/year) and 344 women in Örebro County (based on a 50% response rate; 5% margin of error; 95% CI; and the total 3,208 births/year in Örebro County). The pilot study had indicated some difficulties in recruiting partners for the study, corresponding to 60% of the number of women who were recruited. Based on a figure of 60% and 50% response rate, ~6.5% margin of error, with a 95% CI meant that 222 partners were needed in Merseyside and 206 in Örebro County.

### **3.4.4 Questionnaires**

Following the pilot study, the final questionnaires (Appendix C and D) included the following measures.

#### **Socio-demographic questions**

Both parents were asked about their age, level of education, employment status, household income, and relationship status. These questions were included to assess relationships between socio-demographic factors and alcohol use during pregnancy. Due to the cross-cultural nature of the study, ethnicity was excluded as a variable. National surveys in Sweden do not include ethnicity; the national survey on living conditions and public health instead includes the variable ‘country of origin’ (PHA, 2014b). Although the English version of the questionnaire included ethnicity as a standard socio-demographic question, as these items would not be comparable they were excluded from the analysis. Background data was also collected relating to parent experience (first-time parent or more than one child), time since birth, and whether the pregnancy was planned. Women were asked how many weeks pregnant they were at pregnancy recognition. Household income was collected in both samples but due to difficulties with accurately comparing wealth between the two countries household income was not included in any analyses.

#### **Pregnancy-related lifestyle changes**

Women were asked whether they had made any changes to their diet in regards to healthy eating, intake of supplements, and avoidance of certain foods. Women were subsequently asked about changes in lifestyle once they realised they were pregnant relating to smoking, illicit drug use, and alcohol consumption. All these questions were drawn from an unpublished maternal health survey designed by Centre for Public Health (Morleo, unpublished data).

#### **Alcohol consumption**

Participants were asked about frequency of drinking, with the options of ‘never’, ‘once per month or less’, ‘two to four times per month’, ‘two to three times per week’, or ‘daily or almost daily’. Participants were asked to provide number of drinks as defined in commonly used standard measures in the UK (Morleo, Cook & Bellis 2011) and Sweden (SNIPH, n.d) (Table 4). Each category of alcohol reported was converted into grams of pure alcohol by using each country’s definition of a standard drink (England 8g and Sweden 12g). Women

were asked about their consumption during four time periods; in the three months before finding out they were pregnant, first trimester, second trimester, and third trimester. Partners were asked about their consumption in the three months before they found out the woman was pregnant and while the woman was pregnant. The choice to only include the partner's alcohol habits over the course of the entire pregnancy was a pragmatic decision to shorten the items for the partners and comparing the trimesters for women are of importance in relation to biological effects on the foetus. It was therefore regarded as beyond the scope of this study to elucidate detailed drinking data from the partner within each trimester.

**Table 4. Drinks measures included in the questionnaires, divided by country**

Beverage type	Drink size, England	Drink size, Sweden
Wine	Regular glass, 12% (175ml) Large glass, 12% (250ml)	Regular glass, 13% <sup>a</sup> (150ml)
Beer/lager/cider	Can/bottle, 5% (330ml) Pint, 5% (568ml)	Can/bottle, light/medium/strong <sup>b</sup> (330ml) Can/bottle, light/medium/strong (500ml)
Alcopop	Small bottle, 5% (275ml) Large bottle, 5% (750ml)	Bottle, 5% (275ml)
Spirits	Shot, 40% (40ml)	Shot, 40% (40ml)
Fortified wine	Glass, 18% (50ml)	Glass, (80ml)
Cocktails	Glass (undefined) <sup>c</sup>	Glass (undefined) <sup>d</sup>

<sup>a</sup> ABV for wine as standard is 12–14% (SNIPH, n.d) and 13% was chosen as an average

<sup>b</sup> Light beer approximately 2.2% ABV, medium beer 3.5% ABV, and strong beer 5.0% ABV

<sup>c</sup> Calculated as one measure of 40ml spirits (8g alcohol)

<sup>d</sup> 60ml of spirits (SNIPH, n.d)

In addition to typical drinking, participants were asked if they had consumed alcohol at any special occasions (e.g. wedding, funeral) during the given time period with the options yes or no, and the number of such occasions. Under-reporting is a consistent issue in alcohol research and previous research has indicated that using a different set of questions, asking more details around non-typical drinking, can produce more accurate data (Bellis et al., 2015). In other populations the use of context-specific questions have been found to account for some of the difference observed in survey data as compared with alcohol sales data (Casswell et al., 2002; Morleo, Cook & Bellis, 2011). Most women who continue to drink report consuming small amounts of alcohol infrequently (Alvik et al., 2006; McAndrew et al., 2012; Skagerström et al., 2013), and considering the potential benefit

with accounting for under-reporting using context-specific questions, the study included the additional question of context specific drinking during pregnancy.

### **Relationship satisfaction scale**

Participants were asked about the relationship with their partner, if they had one, including to happiness in relationship and experience of problems in the relationship with their partner. The relationship satisfaction scale is made up from three questions measured on a five point likert scale; 'how happy are you in your relationship', 'how easy do you find it to talk about problems with your partner', and 'how often do you quarrel with your partner. The scale is a modified version of the Conflict Tactics Scale, which has been used in research on women's health in relation to for example alcohol use and suicidal behaviour (Wilsnack et al., 2004), but also specifically in research on alcohol use during pregnancy and influence from the partner (Bakhireva et al., 2011).

### **Information and advice**

Participants were asked what kind of information they had received in antenatal care on alcohol, smoking, illicit drug use, and nutrition. Subsequently, parents were also asked about what they were recommended in terms of alcohol use during pregnancy, to further investigate how the drinking guidelines were communicated in antenatal care. Parents were also asked whether their partner had been included in the discussion on alcohol use by being recommended to also abstain and whether they had obtained information about alcohol and pregnancy from sources other than antenatal care.

### **Attitudes towards lifestyle during pregnancy**

Parents were asked a series of questions relating to their attitudes towards the four health behaviours (diet, smoking, alcohol, and illicit drugs) during pregnancy and their perceptions of risks. Attitudes were measured on a five-point likert scale ranging from 'strongly disagree' to 'strongly agree'. In relation to the attitude questions parents were also asked if they believed there to be a safe limit of alcohol consumption during pregnancy ('yes', 'no', or 'I don't know'). For the 'yes' response, a follow-up question was included of what amount they believed to be safe. Women were also asked about the reasons to why they changed their alcohol habits when they found out they were pregnant. This question were used in the 2010 IFS (McAndrew et al., 2012). Whilst previous research has used validated scales or measures from behavioural models such as Theory of Planned Behaviour (Duncan, Forbes-McKay & Henderson, 2012), the current study was



designed based on several behaviour change theories and models. As no there was no existing scale based on teachable moments, HBM, and the socioecological model of health, non-validated items were used for this part of the questionnaire.

### ***3.4.5 Validity and reliability***

In quantitative research an important aspect is the rigor of the measured variables, defined as validity and reliability. Bryman (2008) defined the concept of validity as whether a measure really captures what it is meant to measure. Reliability relates to whether there is consistency in the measure.

The tool used in this quantitative study was a questionnaire developed through a combination of existing measures as well as items developed for the current study (see 3.4.4). No testing of the validity and reliability of the included items in the current study was done. However, several included measures have previously tested for their validity and reliability. Furthermore, items were thoroughly discussed with the supervisory team and tested in the pilot study.

The lack of validity and reliability testing is a limitation as the items used in the questionnaires may not have sufficient validity and reliability within the two different countries. Furthermore, the questionnaire was developed with assistance from the supervisory team, whom of several have expertise in conducting survey research, and members of the midwifery team at Liverpool John Moores University for specific input on the context of antenatal care. The pilot testing of the questionnaire (see 3.4.2) will have further improved the reliability. Nonetheless, the use of non-validated items for alcohol consumption as well as the section on attitudes towards drinking during pregnancy and alcohol advice has impact on the reliability (Bryman, 2008). Despite the pilot testing, which refined items in their appropriateness for the target population, this did not affect the issue with limited reliability from using non-validated items.

Social desirability, where respondents answer in a way believed to be socially acceptable (Johnson & van De Vijver, 2003), is a common issue in survey designs, and self-reported alcohol consumption often underestimates actual consumption (Morleo, Cook & Bellis, 2011). However, the level of under-reporting varies across the population (Livingston & Callinan, 2015). Underreporting of alcohol use during pregnancy has been demonstrated in studies using biomarkers (such as meconium) as a validation for self-reports. The use of

biomarkers in meconium has identified prenatal alcohol use about four times that of self-reports (Lange et al., 2014). It is therefore likely that the study suffers from bias related to social desirability as underreporting is a recognised issue with pregnant women.

External validity relates to the generalisability of the findings (Bryman, 2008) and the current study have several limitations that affects the external validity. First of all, the research was conducted in one Nordic and one Western European country. The generalisability to other countries within Europe or outside of Europe may be limited due to the specific drinking cultures and external factors (such as policy) that operates within these countries. Furthermore, the study excluded parents who did not have good command of English or Swedish. Alcohol use during pregnancy may differ among parents originating from cultures other than England or Sweden and the levels of drinking amongst the women included in the study may therefore have over or underestimated the true levels of drinking.

### ***3.4.6 Procedure and participants***

Participants in the study were women and partners of women who had given birth in the last 12 months. Further inclusion criteria included living in either Merseyside or Örebro County and good command of English or Swedish. All partners who took part in the survey were male.

#### **Merseyside**

In Merseyside, 142 parents completed the questionnaire, either in paper version or an online version. A total of 13 questionnaires were excluded due to; participant lived in an area other than Merseyside (n=8), participant was still pregnant (n=1), baby was older than 12 months (n=4). This left a total sample of 129 parents for analysis (see table X for participant characteristics).

The initial recruitment strategy aimed to get a representative sample from the Merseyside area, whereby all children's centres in the county were approached and asked to support the study by either distributing questionnaires through activities or allowing researcher access to distribute questionnaires. This approach, rather going through the National Health Service (NHS) was a pragmatic decision in relation to time and resources, as a study using NHS patients would require additional ethical approval. In total, 15 children's centres agreed to support the study, however only 2% of questionnaires that were sent out

to the centres for distribution by staff were returned. For questionnaires that were distributed in person in waiting rooms of children's centres, 39% of approached parents returned a completed questionnaire either in person or by sending it through post at a later time. To complement the paper-based survey, due to low response rate and difficulties with engaging with a larger number of services, an online version was created, using Bristol Online Surveys (Bristol Online Surveys, n.d). The online version constituted the majority of the final number of completed surveys (61%). Recruitment and data collection was carried out between July 2013 and March 2014.

Approval to collect data at the above mentioned services was obtained from coordinators at the individual children's centres, forum administrators, and administrators of for example parent support groups on Facebook. Parents were approached on the basis that they had given birth in the last 12 months, or if their partner had given birth in that time period. Participants were provided brief information of the study either verbally or in conjunction with a link to the online survey. If participants expressed interest in taking part in the survey, or clicked on the link for the online survey, they were provided a participant information sheet (Appendix B), which outlined the details of the study, that their data would be kept confidential, and that they could withdraw their participation at any time. In the online survey participants were asked to provide a unique code (made up by their own and their partner's initials and year of birth) and each paper copy of the survey had a unique code. Withdrawal from the study was therefore made possible if the participant provided their code, however no respondent withdrew their participation. A completed questionnaire was regarded as the participant having given consent to take part by submitting the survey. Data was collected from July 2013 to March 2014.

### **Örebro County**

In Örebro County questionnaires were distributed through 25 of the 26 child health care centres, which are based within local GP practices. One centre was removed from the study as the children's nurse was unable to distribute the questionnaires due to heavy workload. In total, 218 parents completed (see table X for participant characteristics) the questionnaire which corresponded to a response rate of 25.1%, ranging from 0% to 80% at individual clinics. No data were collected on the characteristics of non-responders. All parents who attended the child health care for their five-month routine check-up with the child health care nurse were approached and provided verbal brief information. Parents who indicated interest in taking part in the study were provided two participant information

sheets, two questionnaires, and two pre-stamped envelopes to send the survey back individually. The same principles regarding consent were followed as in Merseyside (see above). Recruitment and data collection was carried out from September 2014 to March 2015. In Sweden a good collaboration was already established between the collaborating institution -Örebro University- and the regional child health care system. This facilitated setting up recruitment through the child healthcare centres with help from the regional head of child health care. Furthermore, the process for ethical approval from the regional ethical review board did not require additional approval. Given that this arrangement was possible, a Swedish online version was not created due to time limitations.

### **Participants**

Descriptive statistics for the sample (N=347; median age: 32.0, 37% English, 63% Swedish) are presented in Table 5. For the 342 parents who provided their age, Mann Whitney U test indicated that there was no significant difference in age between English parents (Mdn=32.0) and Swedish parents (Mdn=32.0),  $U = 13089.50$ ,  $z = -.064$ ,  $p = .52$ . The relationship variable was divided into three categories; married, de facto (in a relationship but not married), and single/divorced/other. The majority of English parents were married (70%) which was significantly higher than among Swedish parents (46%), where more than half were living in de facto relationships (52%) which was higher than among English parents (26%),  $p < 0.001$ . Significantly more parents in the English sample were first-time parents (70%) compared to the Swedish sample (48%),  $p < 0.001$ .

The majority of pregnancies in both samples were planned (82%). Education was dichotomised into less than university degree level and having a university degree (undergraduate or higher). There was no significant difference in the proportion with a university degree in England (63%) and Sweden (60%). There was no significant difference between proportion of parents who were in employment in the English (91%) and Swedish sample (92%).

**Table 5. Participant characteristics for Study I (N=347), n (%)**

	England (n=129)	Sweden (n =218)	Total (N=347)	p-value
<b>Gender</b>				
Female	103 (80)	128 (59)	321 (67)	
Male	26 (20)	90 (41)	116 (33)	
<b>Age, Mdn (min-max)</b>	32.0 (21–54)	32.0 (21–52)	32.0 (21–54)	0.523
<25	10 (8)	21 (10)	31 (9)	0.643
26-35	94 (74)	149 (69)	243 (71)	
>36	23 (18)	45 (21)	68 (20)	
Missing	2	3	5	
<b>Education</b>				0.582
< University degree	46 (37)	86 (40)	132 (39)	
University degree	79 (63)	130 (60)	209 (61)	
Missing	4	2	6	
<b>Relationship status</b>				<.001
Married/Civil part.	88 (70)	100 (46)	188 (55)	
De facto relationship	33 (26)	112 (52)	145 (42)	
Single/Divorced/Other	5 (4)	5 (2)	10 (3)	
Missing	3	1	4	
<b>First-time parent</b>				<.001
Yes	90 (70)	102 (48)	192 (56)	
No	38 (30)	112 (52)	150 (44)	
Missing	1	4	5	
<b>Employment status</b>				0.849
In employment	116 (92)	201 (93)	317 (92)	
Student/unempl/other	10 (8)	16 (7)	26 (8)	
Missing	3	1	4	
<b>Planned pregnancy</b>				0.961
Yes	105 (82)	176 (82)	281 (82)	
No	23 (18)	38 (18)	61 (18)	
Missing	1	4	5	

---

*The presented percentages are non-missing proportions*

### 3.4.7 Data analysis

All quantity measures of alcohol use were analysed as grams of pure alcohol, calculated from the defined standard drinks used in the questionnaire in each country (see Table 3, 3.4.4). Variables of consumption that were of particular interest for the analyses were HED, any alcohol use before pregnancy, and any alcohol use during pregnancy. The construction from questionnaire items and coding of these three measures are described in Box 2. The HED definition of intake of 60g (equal to 7.5 UK units) in one occasion is used by WHO (see for example WHO, 2014a) and has been used in previous research on alcohol and pregnancy (Skagerström et al., 2013). This definition was used as a measure comparable between the two countries, as national drinking guidelines on daily or weekly limits differ.

#### Box 2. Construction and coding of alcohol consumption variables

##### Coding of consumption variables

**Heavy episodic drinking (HED)** – intake of more than 60g at typical (Q9) or special drinking occasions (Q11) before pregnancy was coded as HED (=1), whereas consumption of less than 60g per drinking occasion was coded as not HED (=0).

**Any alcohol use before pregnancy** – any alcohol consumption at typical (Q9) or special occasions (Q11) before pregnancy was coded as any alcohol use before pregnancy (=1), whereas no drinking at either drinking occasion was coded as no alcohol use before pregnancy (=0).

**Any alcohol use during pregnancy** – any alcohol consumption at typical (Q13, Q17, Q21) or special occasions (Q15, 19, Q23) before pregnancy was coded as any alcohol use before pregnancy (=1), whereas no drinking at either drinking occasion was coded as no alcohol use before pregnancy (=0).

Constructing the variable using reported intake on both typical and special occasions was based on the presumption that women may not report on drinking using the frequency question. This was confirmed as there were big discrepancies in frequency of alcohol use (see Table a, Appendix O) and the ‘any alcohol use’ variable. A detailed breakdown of women coded into this variable is outlined in Table b, Appendix O. This mapping exercise also generated an overall view of the trajectories of alcohol use during pregnancy (see Figure 13, section 4.3.1), to explore whether women drank at one or more stages of their pregnancy and at typical and/or special occasions. Whilst there are acknowledged limitations with using this variable, in relation to accurately describe alcohol use during

pregnancy (which may differ across trimesters), this was the most appropriate method to ensure that sufficient numbers were obtained to carry out further analyses. Furthermore, when comparing the variable for frequency of drinking during pregnancy, there were discrepancies in the number of women reporting drinking. The any use variable was deemed as more appropriate as the type of drinking occasions could be determined and mapped out over the three trimesters.

Due to small numbers in many categories, variables were recoded into fewer response categories than in their original number of categories in the questionnaire (see Appendix C and D). This included relationship status (married, de facto relationship, other), education (less than university degree, university degree), and employment status (in employment, student/unemployed/other). Data was analysed using IBM SPSS Statistics 22. Frequency tables and descriptive statistics were computed to explore prevalence of alcohol use during pregnancy, as well as alcohol consumption prior to pregnancy.

Differences between the two countries and drinking status during pregnancy were explored using  $X^2$  test and Fisher's exact test (when any cells had expected frequency of  $n < 5$ ) for categorical variables. For continuous variables that had a non-normal distribution, Mann-Whitney U test was used to explore the difference in medians between groups. For effect size of the Mann-Whitney U test, conversion of z-scores was calculated as recommended by Field (2009):  $r = \frac{z}{\sqrt{N}}$ . For comparison of continuous variables before and during pregnancy, Wilcoxon signed-rank test was used as the data was non-normally distributed.

Data was collected from both women and partners for the purpose of this study. Due to the small numbers of partners in the study and the number of partners who were actually matched with a woman, there were not sufficient data to explore partner's influence on alcohol use through matched pair analyses, as intended. However, because the data had been collected it has been kept in the thesis. The data of the partners is presented in relation to their reports of the woman's drinking during pregnancy, as a proxy measure to explore characteristics of partners who reported that the woman drank during pregnancy compared to those who did not.

Logistic regression models were used to calculate the odds ratios (OR) and 95% confidence intervals (95%CI) for the associations between a number of demographic, lifestyle and advice variables and reported alcohol use during pregnancy. Significantly

associated factors at the univariable level were included in a multivariable model and retained if the overall effect estimate did not change by more than 10%. Upon construction of the final model all individual variables that were not significant at the univariable level were entered into the model one-by-one to see if they were now significant.

### **3.5 Qualitative phase**

In contrast to quantitative research, where the description of a phenomena is the focus, qualitative research aims to gain a deeper understanding of the interpretation and understanding of the phenomena and the social world (Bryman, 2008). The initial scoping of the literature on alcohol and pregnancy showed that few studies had explored these issues qualitatively and to date no studies have compared the practices and attitudes of drinking during pregnancy in two different countries. These two qualitative studies were conducted between October 2013 and October 2014 (Merseyside) and May-November 2014 (Örebro County). These studies focused on gaining a better understanding of practice of alcohol use during pregnancy, as well as attitudes among parents and midwives.

The epistemology that underpins qualitative research is how reality is constructed from individual experiences (Creswell, 2012) meaning there is no single reality but multiple realities are experienced by different people. For this topic, which is a sensitive issue to discuss, individual interviews were perceived more suitable for parents to feel able to discuss their experiences without potentially feeling unable to disclose alcohol use during pregnancy, which may occur in a focus group setting. Whilst interviews can be regarded as less appropriate than questionnaires for sensitive issues (Gill et al., 2008), given the limited knowledge of the phenomena a qualitative approach using interviews was suitable. By doing so, the research could capture aspects that questionnaires could not. The following sections present the design, approach, and methods used within Study II and Study III. This section concludes with an overview of the aspects of trustworthiness in qualitative research.

#### **3.5.1 Study II**

##### **Aims and objectives**

The aim of this study was to explore the perceptions of alcohol use during pregnancy and alcohol advice in antenatal care among parents living in Merseyside, England and Örebro County, Sweden, and addressed number 3 of the overall research questions (see 3.2).



More specifically, the objectives were to:

1. Understand how women and their partners alter their drinking habits in relation to pregnancy;
2. Explore what influence the partner of the pregnant woman has on her drinking behaviour during pregnancy;
3. Investigate attitudes towards drinking during pregnancy among parents who recently were pregnant;
4. Explore parents' experiences and perceptions of alcohol advice in antenatal care; and
5. Compare attitudes, practices of alcohol use, and perceptions of advice during pregnancy in England and Sweden.

### **Sampling strategies**

The procedure for data collection followed the same process as far as possible in the two countries. A range of approaches was used to recruit participants Facebook, informal networks, children's centres (Merseyside), and child health care centres (Örebro County). Snowball sampling was also utilised as parents who took part in the study were asked to share the information about the study with parents in their peer group. For advertisement online, at children's centres, and at GPs, I approached appropriate administrators and managers for permission any recruitment advertisement was posted. Advertisements (Merseyside example in Appendix E, same information was used in Örebro County) provided brief information about the study and contact details. Potential participants contacted the researcher and were provided a participant information sheet (Appendix F), which included the purpose of the study, procedure for participation, confidential management of the data, and that participation in the study could be withdrawn at any time. The study was conducted October 2013 to September 2014.

### **Interview schedule**

The interview protocol (Appendix G and H) was developed based on existing literature on alcohol use during pregnancy. The areas of interest were mainly the parents' practice of alcohol use during pregnancy, attitudes towards drinking alcohol during pregnancy, and provision of advice during antenatal care. The questions were piloted with supervisor (LP). As acknowledged by Burnard et al. (2008), topics arose during initial interviews that were probed further in subsequent interviews; an example was the perception of risks as well as advice about smoking in comparison to drinking alcohol which arose in early interviews.

In addition to these areas of interest the interview also included a discussion point around different types of health promotion material (Appendix M) on alcohol and pregnancy. The leaflets were from different countries and selected to reflect a variety of approaches. For example, one leaflet featured a foetus in a drinks glass, used in a wide reaching campaign in Italy (Bazzo et al., 2012). This fear appeal was contrasted against, for example, a Norwegian leaflet, which set out the risks with drinking during pregnancy and the potential social pressure that may be put on women to drink alcohol. Green and Thorogood (2014) noted that using visual prompts is an effective way of challenging participants' views on the subject discussed. Attitudes towards alcohol use during pregnancy can be influenced by many different factors and using visual aids can challenge pre-existing knowledge or attitudes. Participants were either given paper copies of the pamphlets or provided an iPad, and looked through each of them in their own time with the only instruction to look at each of the pamphlets and provide their opinion of it. The interviews were semi-structured and interviewees were encouraged to talk freely around the questions the researcher asked, however the schedule was used to gain overall structure of the topics to cover.

### **Procedures and participants**

Participants were recruited through children's centres (England), GP surgeries (Sweden), and in both countries advertisements were placed on Facebook. Parents were eligible to participate in the study if they had an infant aged 18 months or less, were over 18 years of age, lived in the specified regions, and had good command of English or Swedish. Previous research has indicated that retrospective reports of alcohol use during pregnancy are accurate up to 13 months after giving birth (Alvik et al., 2006a), which justified using a parent sample rather than expectant parents. Furthermore, as women may have different attitudes towards alcohol use in the later stages (Loxton et al., 2013) it was desirable to allow participants to reflect on the entire pregnancy. Eighteen months was judged as an appropriate cut-off point as it would allow recruitment from a larger population and as focus was on perceptions rather than specific quantities of alcohol, recall bias was less of a concern.

The sampling frame used initially resulted in a fairly homogenous sample in terms of education and age, so specific services were contacted towards the end of the study to try and recruit parents from more diverse backgrounds. Despite such efforts the final sample was overall homogenous. Upon agreement of the conditions specified in the participant information sheet, a time and place of convenience for the participant was decided. At the

time of the interview participants were asked to provide written consent to take part in the study (Appendix L). Participants chose the location for the interview to ensure their comfort, which was a particular concern as many had their children present, and an environment where the participant feels at ease can have a positive impact on the interview (Green & Thorogood, 2014). Interviews were conducted at a site of preference to the participants including their own home, at university premises or in two cases at a cafe. Interviews lasted between 15 and 50 minutes (mean time 34 minutes) and were conducted individually to avoid bias from the partner, however due to practical reasons two couples were interviewed together. All interviews were audio recorded. Participants were provided a £10 (or equivalent amount in SEK) shopping voucher for their participation.

The final sample comprised of 44 parents; 22 in Merseyside and 22 in Örebro County. It proved difficult to recruit partners; the study only included four in Merseyside and six in Örebro County. The aim was to recruit a minimum of ten women and ten partners in each country. The small number of partners recruited is a limitation of the study (see further discussion in section 3.9). Partners were invited to take part in the study, but there was no requirement that both partners had to participate. Among the partners interviewed, one English partner and one Swedish partner took part in their study without their female partner. The sample of parents interviewed in Study II is presented in Table 6. In the Merseyside sample, parents were on average 32 years old. Most were married, had a university degree, and only had one child. In Örebro County, the average age of parent was 29.6 years. Most parents were cohabitating, had a university degree, and had two children.

**Table 6. Participant characteristics for Study II (N=44), n (%)**

	England (n=22)			Sweden (n=22)		
	Women (n=18)	Partners (n=4)	Total (N=22)	Women (n=16)	Partners (n=6)	Total (N=22)
<b>Age (mean)</b>	31.7	33.3	32.0	29.7	29.3	29.6
24–30	7 (39)	1 (25)	7 (32)	11 (69)	4 (67)	15 (68)
31–36	9 (50)	2 (50)	12 (54)	3 (19)	1 (17)	4 (18)
37–40	2 (11)	1 (25)	3 (14)	2 (12)	1 (17)	3 (14)
<b>Marital status</b>						
Married	12 (67)	4 (100)	16 (73)	5 (31)	2 (33)	7 (32)
Cohabiting	5 (28)	-	5 (23)	11 (69)	4 (67)	15 (68)
Separated	1 (6)	-	1 (5)	-	-	-
<b>Education</b>						
<University degree	6 (33)	1 (25)	7 (32)	3 (19)	3 (50)	6 (27)
University degree	12 (67)	3 (75)	15 (68)	13 (81)	3 (50)	16 (73)
<b>Number of children</b>						
One	13 (72)	2 (50)	15 (68)	6 (37)	3 (50)	9 (41)
Two	5 (28)	2 (50)	7 (32)	10 (63)	3 (50)	13 (59)

*Due to rounding the percentages may not equal 100%*

### **Data analysis**

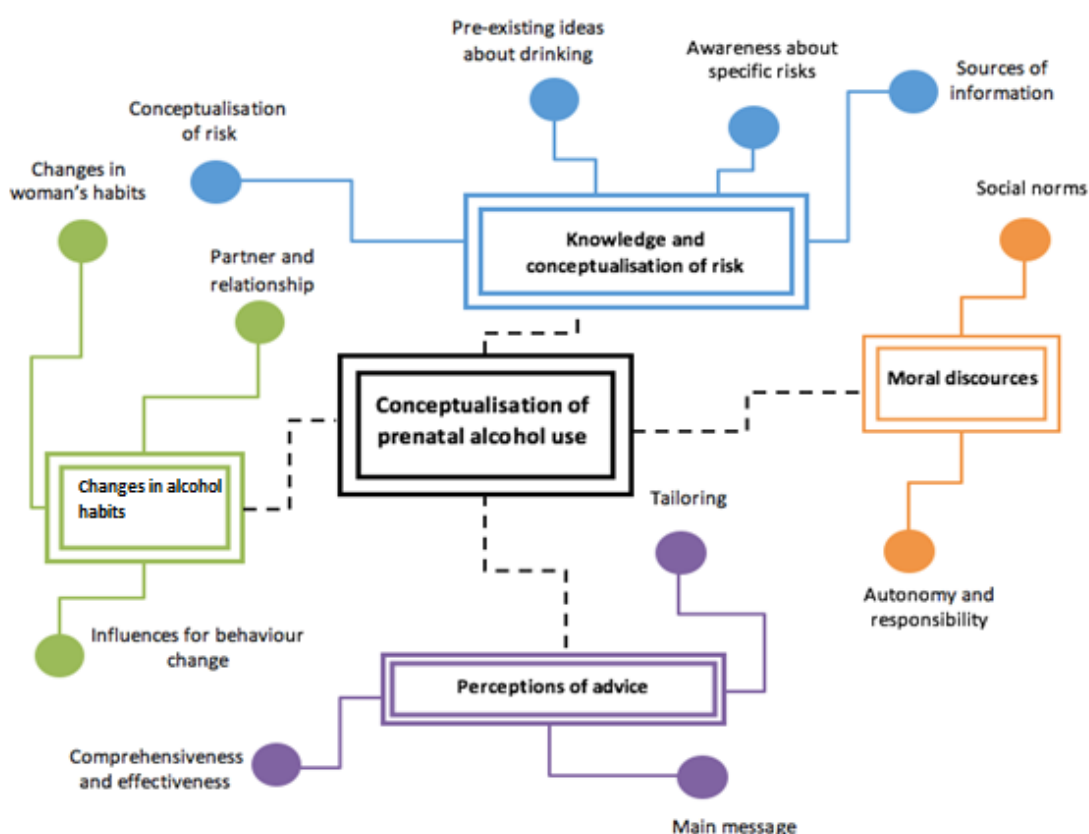
All interviews were audio recorded with permission from the participants and transcribed interview verbatim. The Swedish interviews were transcribed in Swedish and translated as closely to the original transcript as possible (see section 3.7 on translation). Transcripts were read through to gain an overall understanding of the narrative for each participant before coding was initiated. Data were analysed using NVivo10 (QSR International Pty Ltd, 2012) for initial coding of transcripts and organisation of subthemes and main themes. The analysis adopted an inductive approach, where codes and themes were data-driven, as referred to by Braun and Clarke (2006).

All transcripts were coded initially through open coding, creating a large amount of individual codes. In a later step these codes were reviewed to merge similar codes and subsequently codes were collected in subthemes and main themes. This process of

refinement of themes was an iterative process as revision of initial interviews was necessary as new data was added following new interviews.

As a structured and systematic way to guide the data analysis thematic networks were created to assist the interpretation and exploration of the data (Attride-Stirling, 2001). Figure 8 shows the themes identified in Study II. The coding and thematic analysis of the data was done by me and the coding framework was discussed at several points in time with supervisor (LP) to ensure consistent application throughout the data. This type of verification of the coding process improves the reliability of the qualitative analysis of the data (Green & Thorogood, 2014). The final refinement of codes into themes resulted in four main themes under the global theme ‘conceptualisation of prenatal alcohol use’. These four main themes included twelve sub-themes. Each main theme is described in detail in Chapter 5. Thematic saturation was considered achieved as no new codes or themes emerged in the data after approximately ten interviews in each sample.

**Figure 7. Thematic network map of emerging themes in Study II**



The quotes presented in Chapter 5 and Chapter 6 are presented as indented and italicised, with the following guide to transcription mark-up is used:

“[...]” – text has been removed from the quote or indicates an inaudible section

“...” – participant paused as they were talking

“[laughter/laughing]” – participant laughed

### **3.5.2 Study III**

#### **Aims and objectives**

The aim of this study was to explore midwives’ experiences of working with prevention of alcohol use during pregnancy in antenatal care and their perceptions of national guidelines and available resources for prevention, and addressed 4–5 of the overall research questions (see 3.2). The specific objectives were to:

1. Investigate midwives’ perceptions of alcohol use among pregnant women;
2. Explore how midwives approach the subject of alcohol use with pregnant women in antenatal care;
3. Examine the extent to which midwives include the pregnant woman’s partner in the discussions around alcohol;
4. Explore midwives’ attitudes towards national guidelines on alcohol use during pregnancy; and
5. Contrast similarities and differences of alcohol prevention between English and Swedish antenatal care.

#### **Sampling strategies**

A recruitment letter (Appendix I) was disseminated to midwives working at a major maternal health service in Merseyside and the regional maternal health care in Örebro County. Managers at the two sites sent out an email to midwives working in the area with the information and contact details to the researcher if they wanted to take part in the study. A recruitment letter was also published in the maternity service newsletter in the English study site. Midwives who contacted the researcher were provided a participant information sheet (Appendix J) and arrangements for the interview was arranged to suit the participant. In addition, I also visited the maternity services in Merseyside and midwives who were off call could take part in the study on those days.

#### **Interview schedule**

The interview schedule (Appendix K) was developed based on existing literature and focused on midwives’ practices around alcohol prevention in antenatal care. The main

focus was to explore how midwives felt about talking to pregnant women about alcohol, whether the partner is involved in such a discussion, and how they perceived the advice is best provided. Midwives in both countries were asked about the NICE guidelines endorsed in England, which suggested women should avoid alcohol but could consume smaller amount after the first trimester. Similar to the parent interviews, midwives were also provided a variety of visual aids in the form of leaflets from different countries (Appendix M) for discussion around provision of advice and different approaches to inform pregnant women about the risks with drinking alcohol. These were the same pamphlets that were used for the parents in Study II. No pilot interview was conducted, but the questions were discussed in detail with supervisor (LP) before interviews commenced.

### **Procedures and participants**

Sixteen midwives working in Merseyside (n=7) and Örebro County (n=9) were interviewed between October and November 2014. The interviews included midwives who provided lifestyle advice, including alcohol, to pregnant women in various capacities. However due to differences in the health care system in England and Sweden the roles of the midwives were slightly different. Among the English midwives, some were hospital based whereas others worked as community midwives. In Sweden all midwives were based within GPs, where women go for antenatal and pre-conception care. Each interview was conducted by me and all interviews were individual.

The majority of interviews were conducted at the place of work of the participants; however one interview was conducted at university premises and one in the participant's home. Before each interview commenced the participant was reminded about the purpose of the study, that participation was voluntary, and that they could withdraw their participation at any time. Written consent was obtained for all participants (Appendix L). All interviews were audio recorded and lasted between 30 and 60 minutes (average time 49 minutes). All midwives were provided a £10 (or equivalent amount in SEK) voucher for their participation. Sixteen midwives expressed interest and agreed to take part in the study, seven in Merseyside and nine in Örebro County. In both countries the midwives were on average 48 years of age. In Merseyside the average years of experience were 14.1 in Örebro County 16.6 (Table 7). All midwives were female.

**Table 7. Participant characteristics for Study III (N=16), n (%)**

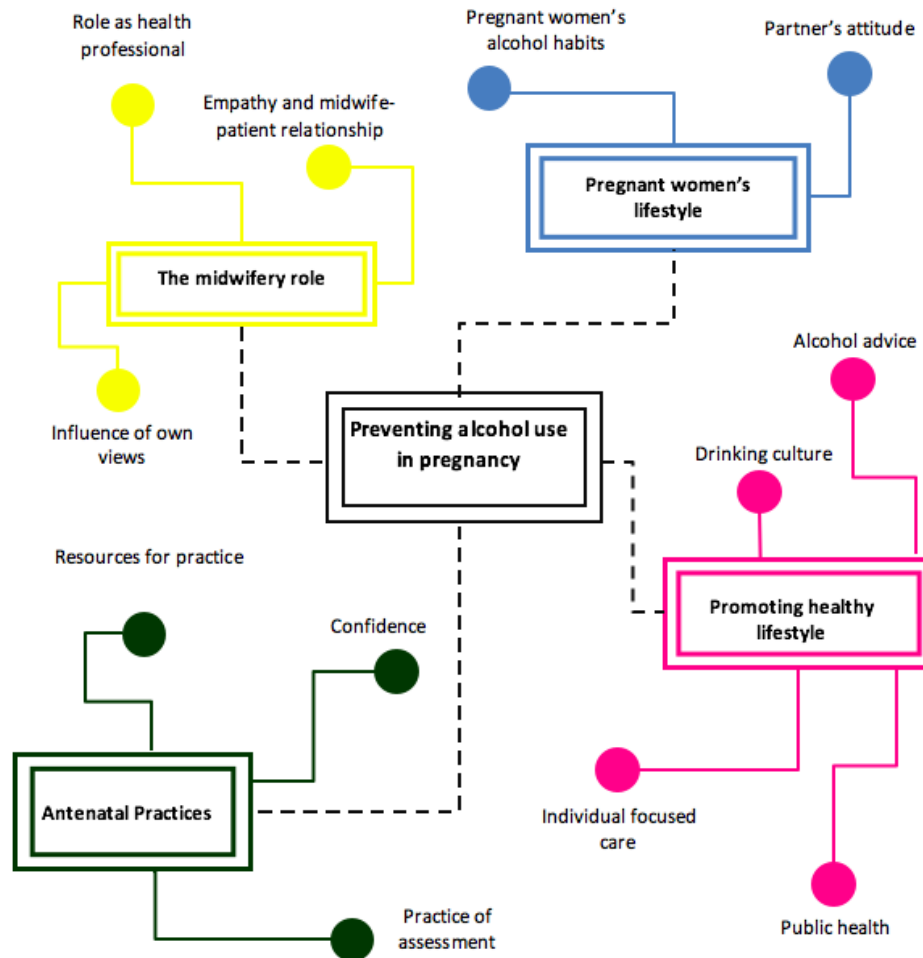
	England (n=7)	Sweden (n=9)	Total (N=16)
<b>Age (mean)</b>	47.6	48.0	47.8
<35 years	1 (14)	3 (33)	4 (25)
36–45	2 (29)	1 (11)	3 (19)
46–55	2 (29)	2 (22)	4 (25)
>56	2 (29)	3 (33)	5 (31)
<b>Years of experience (mean)</b>	14.1	16.6	15.5
<5	1 (14)	2 (22)	3 (19)
6–15	4 (57)	2 (22)	6 (38)
16–25	–	3 (33)	3 (19)
>26	2 (29)	2 (22)	4 (25)

### Data analysis

The interviews with midwives took place after the interviews conducted in Study II and the analytical process was underpinned by ideas emerging from the interviews with parents. However, I also focused on exploring concepts that were not mentioned by parents. The analysis was therefore done in a combination of inductive and deductive coding. Data was analysed using NVivo version 10 (QSR International Pty Ltd, 2012) for initial open coding of the transcripts and subsequently used to create and organise emerging themes. Data was analysed using thematic analysis (Green and Thorogood, 2014) in six steps as described by Braun and Clarke (2006). The emerging themes from Study II, for example that midwives tailor their advice and guidance to the individual, served as a tool for the researcher to look further in the data for commonalities in accounts, however without prescribing any pre-determined themes for exploration. Figure 9 shows the emerging themes from Study III. Refinement of codes into themes followed the same procedure as in Study II. The global theme ‘preventing alcohol use during pregnancy’ included four main themes, with twelve subthemes. These are described in more detail along with excerpts from midwives in Chapter 6.



**Figure 8. Emerging themes in Study III**



### ***3.5.3 Trustworthiness***

In quantitative research, reliability and validity are important concepts to ensure rigor of the findings and its generalisability. These concepts do not however apply to qualitative research, and researchers such as Guba (1981) introduced concepts that can be used to assess the trustworthiness in qualitative research, which have been further expanded on in more recent work (Krefting, 1991; Shenton, 2004). Guba (1981) specified four aspects of trustworthiness; truth value, applicability, consistency, and neutrality. Later work has framed these to fit qualitative research as credibility, transferability, dependability, and confirmability (Krefting, 1991; Shenton, 2004). Credibility relates to how well the findings reflect reality, and according to Krefting (1991) the focus is on illuminating any unexplained aspects of the data.

Having strategies for ensuring the validity and reliability of qualitative research findings is important, yet these concepts do not apply to qualitative research. While generalisability of findings to a larger population is neither possible nor the aim of qualitative research, consistency is a concept that addresses issues of the wider applicability of the findings. Consistency, reliability in quantitative terms, relies on exploring individual experiences rather than 'average experiences'. Kreftling (1991) emphasised that for this reason, deviating experiences (outliers in quantitative research) are important to present. An honest representation of the data therefore means to not only look for common experiences but also 'outliers'. Alongside aspects such as the applicability of the findings in other contexts, one of the obvious differences between quantitative and qualitative research is neutrality (Krefting, 1991). Less distance between the researcher and the data, through interaction and understanding of the participant, was an important part of this part of the current research.

As a reflection on aspects of trustworthiness of the research, table 8 summarises four strategies for ensuring trustworthiness in qualitative research, based on Guba (1981) and how these were employed in the current research.

**Table 8. Strategies to ensure trustworthiness in qualitative research (Guba, 1981)**

Strategy	Criteria
<b>Credibility</b>	<p><b>Reflexivity:</b> Field notes were taken for each interview and a research diary was kept throughout to guide the analysis as a later stage. This also included reflecting upon my own background (young woman with no children) in relation to the participants that I interviewed</p> <p><b>Interview technique:</b> Interviews were conducted in a semi-structured format and prompts were used to re-phrase questions and also ask about other's experience to contextualise the participant's own experiences (e.g. "I always ask all pregnant women about alcohol, but other midwives don't")</p> <p><b>Peer examination:</b> Discussions and reflections on the process were held throughout the studies with a supervisor who specialises in qualitative research methods. This also included the development of codes and themes, as a way of addressing accurate interpretation of the data</p>
<b>Transferability</b>	<p><b>Comparison of sample to demographic data:</b> Early on in the research, it was noted that participants were all in their late twenties or in their thirties, and may therefore not represent the experiences of parents of younger (or older) age. The recruitment process attempted to address this by supplementing recruitment from e.g. children's centres with more targeted services (for young/teenage parents and smoking cessation)</p> <p><b>Dense description:</b> Each step of the process was clearly outlined which allowed for transferability, which Kreftling notes happens when the data are used in another context but for the data to be transferable the researcher must provide a comprehensive and transparent description of the context. Conducting research in two countries meant that comparisons of the same phenomena in two different contexts allowed for exploring whether findings may be transferable.</p>
<b>Dependability</b>	<p><b>Peer examination:</b> As mentioned above, the data collection and analysis process was reviewed by a supervisor who is a qualitative researcher. Ongoing discussions facilitated continued improvement throughout the studies.</p>
<b>Confirmability</b>	<p><b>Reflexivity:</b> The reflective process of the interviews was an important strategy to ensure confirmability. One of the main conclusions from this mainly relied on my own position as a young woman without any children. In regards to distance, and neutrality, this allowed me to approach each participant with no pre-determined lived experiences. In the interview situation, this meant parents (and to some extent midwives) 'educated' me on this. As a researcher, I could analyse the data and with less subjective bias in their experiences. This allowed me to be more distanced from the data than I might have been if I had shared their experiences and had a more distinct position on the subject.</p>

### **3.6 Translation of research tools and results**

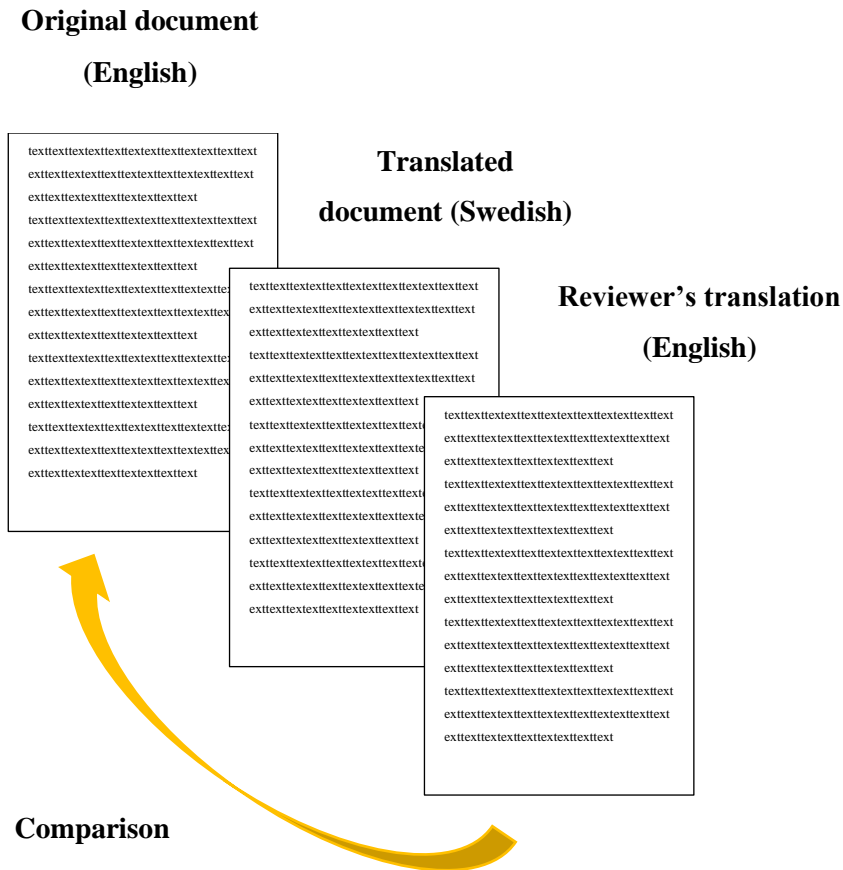
A specific issue in cross-cultural research is the issue of translation and conducting the research in different languages. In this research I have had the advantage of being a bilingual researcher, fluent in both English and Swedish (native speaker). I was therefore

able to plan and conduct the research without any need for assistance with translation; however some strategies were adopted to ensure consistency and validity in the translated material.

All documents for the research (research proposal, ethics application, data collection tools) were initially developed in English and subsequently translated into Swedish once collaboration had been set up with the collaborating institution Örebro University. While it is important to acknowledge translation issues in quantitative research (such as ensuring applicability of concepts in another language, as well as comparability), there are specific issues relating to qualitative research. For example, van Nes et al. (2010) and Green and Thorogood (2014) noted that translation in qualitative research is complex, as the focus is on participants' accounts and interpretation of a phenomena. Researchers therefore have to be attentive to situations such as where figure of speech, such as metaphors, or non-translatable concepts (that are culture specific) are used. The researcher's role is therefore to ensure that concepts are presented in a way that makes sense in that specific context. Green and Thorogood (2014) refer to this as the researcher not only being bi-lingual but also "bi-cultural" to interpret the spoken word in the cultural context in which they occur.

As I am Swedish myself, and a native speaker, the interviews were conducted with these aspects in mind. To ensure validity in the translations, the questionnaires used in the survey and the interview schedules used for the semi-structured interviews in study II and III were subject to back-translation. Back-translation is a method of validating translated materials to ensure that they can be understood by the targeted audience and that culture-specific items have been considered (Cha et al., 2007; Del Greco et al., 1987). Figure 9 shows the process of back-translation of documents, from the original into translated versions which were given to a reviewer to translate back into the original language.

**Figure 9. Back-translation validation process**



For Study I, the questionnaires were back translated by two independent reviewers, who were both native in Swedish and fluent in English. The reviewers translated the research tools back to English, which was subsequently compared to the original document to identify any discrepancies. Overall, only minor discrepancies were identified in a few documents which related to choice of words, but did not change the meaning. The translations were therefore considered to be accurate. Following amendments of the few identified, the final Swedish versions were checked by the Swedish co-supervisor (CE). The questionnaires were translated by two reviewers and all other documents, including a shorter sample from two interviews, were only translated by one reviewer. The interview guides for Study II and Study III were not subject for back-translation, but were reviewed by supervisor (CE) to ensure that the wording was appropriately translated.

Translation of qualitative findings developed throughout the analytical process as a result of reflection on my own interpretation and understanding of the data. For Study II, I translated all transcripts into Swedish, with back-translation verification from one reviewer (same as for Study I) who reviewed two pages of transcribed data from two separate interviews. I then analysed the translated transcripts for coding and creation of themes.

However, it has been suggested that translation may lose part of the meaning of the data (Temple & Young, 2004), and my own perception of this process was that it was difficult to get a feeling for the meaning of specific narratives when they had been translated to English. This mainly related to issues with ‘hearing the participant’, that is remembering the tone of their voice and choice of words. For this reason, I decided to not translate the transcripts from Study III, but instead analysed each interview in the original language. This allowed me to ‘hear’ the participant throughout the analysis, and I then only translated relevant excerpts from that interview to present representative quotes. Acknowledging the challenges of translating qualitative research, it should be noted that the differences in analytical approach and translation in Study II and Study III may have had impact on the level of interpretation.

### **3.7 Ethics**

Ethical approval was obtained for all parts of the research from Liverpool John Moores University in England (13/HEA/078 and 14/EHC/027), Uppsala Ethical Review Board in Sweden (2014/132), and the local maternity services in England (RE:033) (Appendix N). No additional ethical approval was needed for data collection in child health care or antenatal care services in Sweden; these were covered under the full ethical application to Uppsala Ethical Review Board.

In Study I, respondents of the survey were provided written information about the purpose of the study, that their participation was voluntary, that their data would be treated confidentially, and that they could withdraw from the study at any time. Brief verbal information was provided to potential participants when they were approached either by me or by staff. The staff was informed to highlight the information from the participant information sheet when approaching parents and encourage them to read the written information carefully before deciding about taking part. In the information provided local alcohol services were listed in the event that experienced distress following the survey or had additional questions regarding their alcohol use. In addition, respondents were also advised to contact their GP if they had concerns. A completed and returned questionnaire was considered as consent to participate in the study. For the online version, respondents had to consent to move on to the first question.

In Study II, participants were provided brief information about the study and after seeing

the information interested participants contacted me for further information. All participants were provided with a participant information sheet outlining the purpose of the study and procedure before the interview and were given the opportunity to ask questions. Furthermore, all participants were informed that they could stop the interview at any time; that they could withdraw from the study at any time; and were ensured their accounts would be kept confidential. It was considered that discussing alcohol use during pregnancy, or other related topics that may have emerged within the interviews, could cause distress with some participants. Participants provided written consent to confirm that they understood the circumstances of the study (Appendix L). All interviews were coded and identifiable data were removed from the transcripts.

In Study II, and Study III, several measures were taken to ensure confidentiality of the participants. As only a small number of midwives were interviewed, no identifiable data such as age or years of experience was presented with verbatim quotes. Participants were able to choose the location for the interview to ensure they had the necessary privacy. The participants were informed both in writing and verbally that their participation was voluntary and that they could withdraw from the study at any point. Written consent was obtained from all participants (Appendix L), in which midwives confirmed they agreed with the conditions of the study and that they had been provided sufficient information. All collected data from Study I-III were stored on a password protected server.

### **3.8 Limitations**

While this research contributes to the literature on alcohol use during pregnancy with a novel comparative approach, the study has several limitations. Firstly, the recruitment strategies chosen were opportunistic and pragmatic in nature, which resulted in a somewhat homogenous sample of parents who were on average 30 years or older, whose experiences may not represent those of younger parents. Due to the pragmatic nature of the recruitment and data collection in the survey, there may be limitations to how comparative the results are. The less structured approach in England introduces selection bias in the results as the Swedish survey was distributed to all parents attending child health care. Furthermore, social desirability is a known difficulty in research on topics such as alcohol (Johnson and van De Vijver, 2003) and specifically during pregnancy where women may not report drinking due to stigma. For the same reason, women may have underreported their alcohol consumption but it is also plausible that recall bias may have had further

impact on the results as post-pregnancy reporting was chosen. Finally, this research was conducted in two smaller regions of England and Sweden and may not be representative of the whole population or in other countries.

### **3.9 Chapter summary**

This chapter provided an overview of the underpinning paradigm for the methodology chosen for the research, and in detail outlined the mixed methods parallel convergent design. The three studies were outlined; a cross-sectional survey, an interview study with parents, and an interview study with midwives. The specific aspect of cross-cultural research was also discussed and how rigor was achieved in the translation of the research tools. The sample was made up of 347 parents in Study I, 44 parents in the Study II, and 16 midwives in Study III. Several strategies were employed to ensure rigor (validity and reliability in the quantitative phase and trustworthiness in the qualitative phase). The overall methods of the three studies were described, including the context of the study sites where the data was collected. Finally, the chapter discussed the ethical implications of conducting the research and what steps were taken to ensure the safety of the participants. The chapter concluded with an overview of the limitations of the study. The next chapters present the findings from the three studies, presented individually for Study I (Chapter 4), Study II (Chapter 5), and Study III (Chapter 6), and concludes with the mixed methods synthesis and general discussion (Chapter 7).



## **Chapter 4: A cross-sectional survey of the prevalence and factors associated with alcohol use during pregnancy**

### **4.1 Introduction**

In this chapter I present the results from a survey of retrospectively, self-reported alcohol use during pregnancy among parents in Merseyside, England and Örebro County, Sweden using. This study aimed to further explore gaps in the research concerning prevalence, pattern of drinking during pregnancy, and influence of partner's drinking. Despite great differences in reported prenatal alcohol use between countries, existing research has thus far thus not explored these differences in greater detail. Whilst international comparisons have been undertaken between English speaking countries (O'Keeffe et al., 2015), little is known about how prevalence of alcohol use during pregnancy differs between European countries with different drinking patterns and alcohol policies (WHO, 2013a). The current study utilised retrospective recall of alcohol use throughout the whole pregnancy, and also included measures on partner's drinking and relationship satisfaction along with other possible associated factors.

### **4.2 Aim and objectives**

The aim of this study was to investigate the prevalence of and factors associated with alcohol use during pregnancy among women in England and Sweden, and addressed 1–2 of the overall research questions (see 3.2). The research question was:

- What is the prevalence of retrospective self-reported alcohol use during pregnancy in England and Sweden and what factors are associated with continued use?

The specific objectives of this study were to:

1. Estimate the prevalence of retrospectively reported alcohol use during pregnancy among women who had recently been pregnant;
2. Examine factors associated with continued alcohol use during pregnancy, in particular the influence and significance of perceived alcohol consumption in the partner's on women's reported alcohol use during pregnancy; and
3. Compare prevalence and associated factors in a sample of English and Swedish parents.

## **4.3 Results**

### ***4.3.1 Sample characteristics***

A total of 231 women provided responses to the questionnaire and were included in the final sample. Table 9 shows that the median age was 31 years; the majority had at least an undergraduate degree, were in employment, and had planned the most recent pregnancy. A significantly higher proportion of English women were married and first-time parents, compared to Swedish women. Before women found out they were pregnant, the majority (90%) drank alcohol.

**Table 9. Socio-demographic characteristics of women, n (%)**

	England (n=103)	Sweden (n=128)	Total (N=231)	p-value
<b>Age, Mdn (min-max)</b>	31 (21–42)	30 (21–50)	31.1 (21–50)	0.48
<25	10 (10)	16 (13)	26 (11)	0.79
26-35	77 (76)	92 (73)	169 (74)	
>36	15 (15)	18 (14)	33 (15)	
Missing	1	2	3	
<b>Education</b>				0.72
Less than university degree	35 (35)	42 (33)	77 (34)	
University degree	64 (65)	85 (67)	149 (66)	
Missing	3	1	4	
<b>Relationship status</b>				< 0.001
Married/Civil partnership	68 (68)	55 (43)	123 (54)	
De facto relationship	27 (27)	72 (54)	95 (42)	
Single/Divorced/Other	5 (5)	4 (3)	9 (4)	
Missing	3	1	4	
<b>First-time parent</b>				<0.001
Yes	82 (71)	59 (48)	131 (58)	
No	30 (29)	65 (52)	95 (42)	
Missing	1	3	4	
<b>Employment status</b>				0.43
In employment	90 (90)	118 (93)	208 (92)	
Student/unemployed/other	10 (10)	9 (7)	19 (8)	
Missing	3	4	7	
<b>Planned pregnancy</b>				0.76
Yes	84 (83)	104 (84)	188 (83)	
No	18 (18)	20 (16)	38 (17)	
Missing	1	3	4	
<b>Drank before pregnancy<sup>a</sup></b>				0.71
Yes	92 (91)	112 (90)	204 (90)	
No	9 (9)	13 (10)	22 (10)	
Missing	2	3		

*The presented percentages are non-missing proportions, <sup>a</sup> Any alcohol use (see section 3.4.7)*

From this point on, all analyses are based on the outcome variable of any alcohol use during pregnancy (see definition and construction of variable in 3.4.7) and women who abstained. Data was available for 226 women, as data was missing for five women who were excluded from the analysis. A total of 48 women (21%) reported any drinking during

pregnancy whereas 178 reported no drinking (79%). This was significantly higher among English women (44%) than Swedish women (4%) ( $X^2(1) = 53.01$ ,  $p < 0.001$ ) (Table 10).

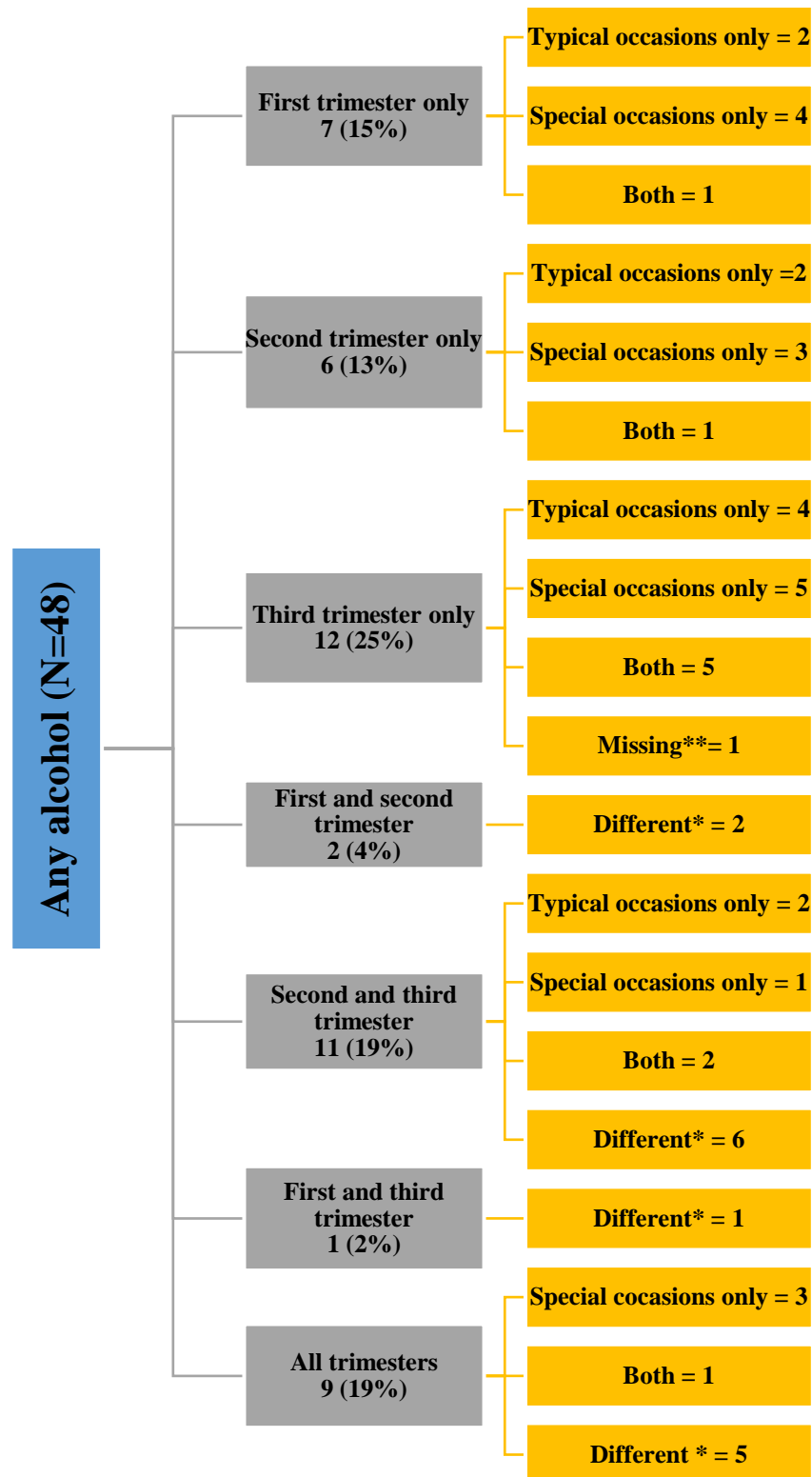
**Table 10. Any alcohol use during pregnancy by country, n (%)**

	England (n=98) <sup>a</sup>	Sweden (n=128)	Total (N=226)	p-value
<b>Any alcohol</b>	43 (44)	5 (4)	48 (21)	$< 0.001$
<b>Abstained</b>	55 (56)	123 (96)	178 (79)	
<b>Missing</b>	5	0	5	

*The presented percentages are non-missing proportions*

Looking closer at the women who reported any use during pregnancy the following can be said; the most common way of drinking was in the third trimester only (25%), in the second and third trimester (23%) and in all three trimester (19%). A smaller proportion of women drank in the first trimester only (15%), second trimester only (13%), first and second trimester (4%), or in the first and third trimester (2%). The trajectories of drinking, including drinking occasion, are shown in Figure 13. It can from this figure be concluded that there was not one single typical trajectory for women who continued to drink. The numbers for these variables were too small to do any comparisons between groups, particularly since only five Swedish women reported any use during pregnancy according to this variable. It is however notable that 60% (n=29) of women abstained in the first trimester, but drank in the later part of pregnancy (second, third, or second and third trimester). Among the women who consumed any alcohol during pregnancy, the majority reported consuming less than 25g per occasion, equal to approximately three UK units (data not shown). This was true for each of the drinking occasions and in all three trimesters.

**Figure 10. Drinking trajectories throughout pregnancy, according to trimester and drinking occasion**

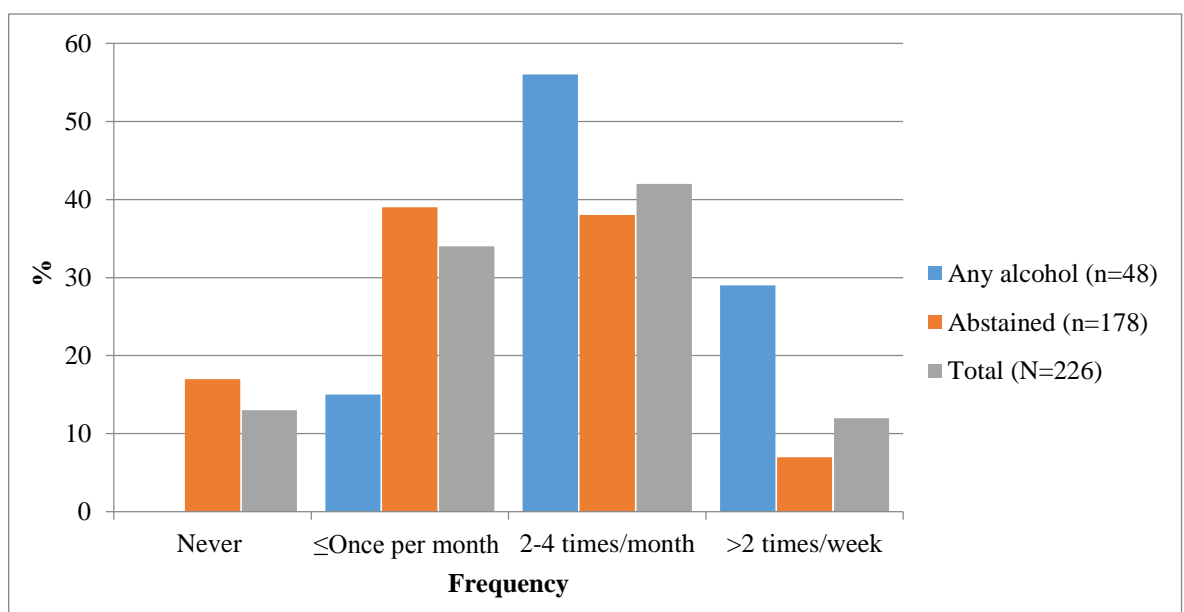


*\*Drinking occasions differed in different trimesters in regards to whether women drank only on typical or special occasions, or at both \*\* Data missing on amount at special occasions (ticked 'yes' but provided no amount) but reported amount for typical occasion, whereby the woman was still defined as having consumed alcohol*

### 4.3.2 Women's alcohol use before pregnancy

The first comparison between the any alcohol and abstainer groups was on alcohol consumption measures before pregnancy. Figure 14 shows frequency of women's drinking before pregnancy, by drinking status during pregnancy. In the three months before pregnancy a minority (13%) of all women reported never consuming alcohol. The majority (42%) drank two to four times per month, a third drank once per month or less (34%), and around a tenth of all women drank twice per week or more often (12%). Chi square test showed that women who reported any use drank significantly more frequently before pregnancy than women who abstained. More women who had consumed any alcohol reported drinking 2–4 times per week (56%) than abstainers (38%), as well as twice per week or more (29% and 7%, respectively),  $p < 0.001$  (Figure 11).

**Figure 11. Women's frequency of drinking before pregnancy, by drinking status ( $X^2(3) = 34.43, p < 0.001$ )**



In addition to frequency, comparisons of amount consumed at drinking occasions before pregnancy showed that women who reported any alcohol use drank significantly more per occasion before pregnancy. For the 192 women that data was available on amount consumed per typical occasion and drinking status during pregnancy, women who reported any use ( $Mdn_{Any} = 53.88$ ) drank approximately 20g more than women who reported no use during pregnancy ( $Mdn_{None} = 32.95$ ), which was a significant difference,  $U = 2341.5$ ,  $z = -3.35$ ,  $p = 0.001$ ,  $r = -0.25$ ). Similarly, on special occasions data was available for 149 women, where women who reported any use ( $Mdn_{Any}=78.80$ ) consumed approximately

30g more per special occasion before pregnancy than women who reported no alcohol during pregnancy ( $Mdn_{None} = 57.90$ ),  $U = 1507$ ,  $z = -3.12$ ,  $p = 0.002$ ,  $r = -0.026$ . As evident, whilst these differences were significant, the effect sizes were under the threshold for medium effect size of 0.3 (Field, 2009).

### ***4.3.3 Demographic characteristics***

The next step of the analysis included exploring differences in demographic characteristics between women who reported any use and women who reported complete abstinence.

#### **Age**

The median age between women who reported any alcohol use was not significantly different to the median age of abstainers ( $Mdn_{Any} = 32$  and  $Mdn_{None} = 31$ , respectively),  $U = 3653$ ,  $z = -1.23$ ,  $p = 0.217$ ,  $r = -0.08$ . Data was missing for 3 women on this variable.

#### **Education**

Level of education did not significantly differ between women who reported any alcohol use and those who abstained; Chi square test showed that proportion of having a university degree was 72% and 63%, respectively ( $X^2(1) = 1.11$ ,  $p = 0.29$ ). Responses were missing for 5 women on this variable.

#### **Relationship status**

Women who reported any alcohol use during pregnancy were significantly more likely to be married, compared to abstainers; 70% and 49%, respectively ( $X^2(2) = 6.31$ ,  $p < 0.05$ , Fisher's exact test). Data was missing for 4 women on this variable.

#### **First-time parent**

Significantly more women who were first time parents reported any alcohol use during pregnancy, compared to women who abstained; 73% and 53%, respectively ( $X^2(1) = 3.33$ ,  $p < 0.05$ ). Data was missing for 5 women on this variable.

#### **Employment**

The vast majority of all women were in employment, and there was no significant difference between any alcohol use and abstinence on this variable; 98% and 90%, respectively ( $X^2(1) = 3.02$ ,  $p = 0.13$ , Fisher's exact test). Data was missing for 4 women on this variable.

### Planned pregnancy

Among women who had consumed any alcohol during pregnancy, as well as women who abstained, 83% reported that their most recent pregnancy had been planned ( $X^2(1) = 0.12$ ,  $p = 0.91$ ). Data was missing for 5 women on this variable.

### 4.3.4 Advice and attitudes towards drinking

Two questions were of particular interest regarding differences between women who reported that they had consumed any alcohol and those who abstained; advice about drinking less alcohol, advice to completely abstain, and recommendation that small amounts were acceptable. These were multiple choice questions, so women could indicate more than one option. Table 11 shows that there was no significant difference in abstinence advice between women who drank any alcohol and those who abstained. However, more women who reported any alcohol use had been advised to drink less and that small amounts were acceptable compared to abstainers.

**Table 11. Advice regarding alcohol use during pregnancy by drinking status, n (%) (multiple choice question)**

	Any alcohol (n=48)	Abstained (n=178)	Total (N=226)	p-value
<b>Advised to abstain</b>	36 (75)	122 (69)	158 (71)	0.44
Missing	0	2	2	
<b>Advised to drink less</b>	17 (36)	16 (9)	33 (15)	< 0.001
Missing	1	2	3	
<b>Advised small amounts were okay</b>	14 (29)	11 (6)	25 (11)	< 0.001
Missing	0	2	2	

*The presented percentages are non-missing proportions*

Another important question, which was also a multiple choice question, to compare differences between the two groups was the reason for changing drinking habits. Overall, 98% of women reported that their baby's health was the reason why they had changed their drinking habits, with no significant difference between women who reported any use (94%) and women who abstained (99%), ( $X^2(1) = 4.55$ ,  $p = 0.92$ , Fisher's exact test). In contrast, 23% of women who consumed any alcohol reported that they had changed their drinking habits because alcohol made them feel sick, compared to 5% among abstainers ( $X^2(1) = 9.66$ ,  $p = 0.006$ , Fisher's exact test). Women were also asked whether they believed that there is a safe limit of drinking during pregnancy. Table 12 shows that significantly more women who drank any alcohol during pregnancy believed that there was a safe limit, compared to women who abstained.



**Table 12. Is there a safe limit of drinking by drinking status, n (%)**

	Any alcohol (n=48)	Abstained (n=178)	Total (N=226)	p-value
<b>Yes</b>	21 (45)	23 (13)	44 (20)	< 0.001
<b>No</b>	20 (43)	129 (73)	149 (67)	
<b>Don't know</b>	6 (13)	25 (14)	31 (14)	
<b>Missing</b>	1	1	2	

*The presented percentages are non-missing proportions*

Finally, women were asked four attitude questions relating to alcohol. Table 13 shows that women who had consumed any alcohol during pregnancy were more likely to agree that advice is unclear, disagree that alcohol use always presents a risk, agree with that small amounts may not be harmful, and agree with avoiding alcohol only in the first trimester.

**Table 13. Attitudes towards prenatal alcohol use and advice by drinking status, n (%)**

	Any alcohol (n=48)	Abstained (n=178)	Total (N=226)	p-value
<b>"Advice about alcohol is unclear"</b>				0.018
Strongly agree/agree	18 (39)	34 (20)	52 (24)	
Don't know	4 (9)	26 (15)	30 (14)	
Strongly disagree/disagree	24 (52)	114 (66)	138 (63)	
Missing	2	4	6	
<b>"Drinking alcohol is always a risk to the baby"</b>				< 0.001
Strongly agree/agree	26 (54)	153 (87)	179 (80)	
Don't know	14 (29)	16 (9)	30 (13)	
Strongly disagree/disagree	8 (17)	7 (4)	15 (7)	
Missing	0	2	2	
<b>"If a woman feels good by having just one glass of wine it is not harmful"</b>				< 0.001
Strongly agree/agree	20 (42)	24 (14)	44 (20)	
Don't know	13 (27)	28 (16)	41 (18)	
Strongly disagree/disagree	15 (31)	124 (71)	139 (62)	
Missing	0	2	2	
<b>"Drinking should only be avoided in the first 12 weeks"</b>				0.005
Strongly agree/agree	8 (17)	17 (10)	25 (11)	
Don't know	9 (19)	10 (6)	19 (9)	
Strongly disagree/disagree	31 (65)	148 (85)	179 (80)	
Missing	0	3	3	

*The presented percentages are non-missing proportions*

### 4.3.5 Relationship satisfaction and partner drinking

Relationship satisfaction was used to explore whether women there was a difference in relationship with a partner between women who drank any alcohol during pregnancy and those who abstained. Mann Whitney U test showed that there was no significant difference between women who reported any alcohol use ( $Mdn_{Any} = 4.33$ ) and women who abstained ( $Mdn_{None} = 4.33$ ),  $U = 3984$ ,  $z = -0.191$ ,  $p = 0.849$ ,  $r = -0.01$ . Data was missing for 3 women on this variable.

A key question to the study was whether partners' drinking habits during a woman's pregnancy has impact on continued drinking. The indicator used for this was the woman's own perception of her partner's alcohol habits during the time she was pregnant. Table 14 shows that women who reported any use during pregnancy also reported that their partner drank more frequently before and during pregnancy.

**Table 14. Frequency of partner's drinking before and during pregnancy, as reported by the woman, by drinking status, n (%)**

	Any alcohol (n=48)	Abstained (n=178)	Total (N=226)	p-value
<b>Frequency of partner's drinking before pregnancy</b>				0.028
Never	1 (2)	9 (5)	10 (5)	
≤Once per month	5 (10.6)	48 (28)	53 (24)	
2–4 times/month	26 (55)	76 (47)	106 (49)	
>2 times/week	15 (32)	33 (19)	48 (22)	
Missing	0	8	8	
<b>Frequency of partner's drinking during pregnancy</b>				0.04
Never	1 (2)	9 (5)	10 (5)	
≤Once per month	13 (28)	77 (45)	90 (42)	
2–4 times/month	17 (36)	64 (38)	81 (37)	
>2 times/week	16 (34)	20 (12)	36 (17)	
Missing	0	8	8	

*The presented percentages are non-missing proportions, \*Fisher's exact test*

### 4.3.6 Determinants of any alcohol use during pregnancy

From table 10 (see section 4.3.1), it can be seen that only  $n = 5$  women from Sweden reported any drinking during pregnancy. Logistic regression was therefore only performed on data from the English population as any model built on the Swedish data would be

unstable. In addition, abstinence before pregnancy was shown to perfectly predicted abstinence during pregnancy so these women were excluded from the analysis and the model was built only on those English women reporting some alcohol consumption prior to pregnancy. The dependent variable for the model was any alcohol use during pregnancy (construction of variable described in 3.4.7).

Table 15 shows the univariable analysis of all variables of interest for the model, which found that only three variables were significant at the univariable level; having been told to drink less during pregnancy (OR = 2.64, 95% CI 1.02–6.89), having been informed or advised that small amounts were acceptable to consume (OR = 4.83, 95% CI 1.44–16.18), and higher frequency of drinking before pregnancy (OR = 3.98, 95% CI 1.10–14.37).

**Table 15. Univariable logistic regression for any alcohol use during pregnancy (English women only, dependent variable: abstained = 0, any alcohol use = 1)**

	Abstained (n=45)	Any alcohol (n=43)	OR	95% CI
<b>Age</b>				
<25	5 (11)	3 (7)	<i>reference</i>	
26–35	33 (73)	34 (81)	1.72	0.38–7.77
>36	7 (16)	5 (12)	1.19	0.19–7.46
Missing	–	1		
<b>Education</b>				
<University	18 (40)	13 (32)	<i>reference</i>	
University degree	27 (60)	28 (68)	1.44	0.59–3.49
Missing	–	2		
<b>Employment</b>				
In employment	39 (87)	40 (98)	6.15	0.78–53.49
Student/unemployed/other	6 (13)	1 (2)	<i>reference</i>	
Missing	-	2		
<b>Relationship status</b>				
Married	30 (67)	28 (68)	1.87	0.16–21.74
De facto	13 (29)	12 (29)	1.85	0.15–23.07
Other	2 (4)	1 (2)	<i>reference</i>	
Missing	–	2		
<b>First-time parent</b>				
Yes	32 (71)	31 (72)	1.05	0.41–2.65
No	13 (29)	12 (28)	<i>reference</i>	
Missing	–	–		
<b>Planned pregnancy</b>				
Yes	36 (80)	36 (84)	1.29	0.43–3.83
No	9 (20)	7 (16)	<i>reference</i>	
Missing	–	–		
<b>Frequency before pregnancy</b>				
Once per month or less	15 (36)	7 (16)	<i>reference</i>	
2-4 times per month	20 (48)	23 (54)	2.46	0.84–7.25
>2 times per week	7 (17)	13 (30)	<b>3.98</b>	<b>1.10–14.37</b>
Missing	2	–		

	Abstained (n=45)	Any alcohol (n=43)	OR	95% CI
<b>Amounts per typical occasions</b>				
<b>before pregnancy</b>				
1–3 units	8 (19)	3 (7)	<i>reference</i>	
4–6 units	7 (17)	10 (23)	3.81	0.74–19.66
7–10 units	18 (43)	22 (51)	3.26	0.75–14.12
>10 units	9 (21)	8 (19)	2.37	0.46–12.14
Missing	3	–		
<b>Amounts per special occasions</b>				
<b>before pregnancy</b>				
1–3 units	3 (9)	1 (3)	<i>reference</i>	
4–6 units	3 (9)	3 (8)	3.00	0.19–47.96
7–10 units	13 (38)	14 (38)	3.30	0.30–35.11
>10 units	15 (44)	19 (51)	3.80	0.39–40.34
Missing	11	6		
<b>Partner's frequency before</b>				
Never	2 (5)	1 (2)	<i>reference</i>	
Once per month or less	9 (21)	5 (12)	1.11	0.08–15.53
2–4 times per month	16 (37)	24 (57)	3.00	0.25–35.910
>2 times per week	16 (37)	12 (29)	1.500	0.12–18.54
Missing	–	–		
<b>Partner's frequency during</b>				
Never	3 (7)	1 (2)	<i>reference</i>	
Once per month or less	6 (37)	12 (29)	2.25	0.21–24.20
2–4 times per month	3 (30)	15 (36)	3.46	0.32–37.47
>2 times per week	11 (26)	14 (33)	3.82	0.35–41.96
Missing	–	–		
<b>Relationship satisfaction</b>				
Mean score	4.36	4.27	0.73	0.13–1.68
Missing	3	–		
<b>Informed to drink less</b>				
<i>Indicated (yes)</i>	9 (21)	17 (41)	<b>2.64</b>	<b>1.02–6.89</b>
Not indicated (no)	35 (80)	25 (60)	<i>reference</i>	
Missing	1	1		
<b>Informed/advised to not drink at all</b>				
Indicated (yes)	25 (57)	31 (72)	1.96	0.80–4.80
Not indicated (no)	19 (43)	12 (28)	<i>reference</i>	
Missing	1	–		

	Abstained (n=45)	Any alcohol (n=43)	OR	95% CI
<b>Informed/advised that small amounts were okay</b>				
<i>Indicated (yes)</i>	4 (9)	14 (33)	<b>4.83</b>	<b>1.44–16.18</b>
Not indicated (no)	40 (91)	29 (67)	<i>reference</i>	
Missing	1	–		
<b>Is there a safe limit of drinking</b>				
Yes	17 (38)	19 (45)	1.86	0.56–6.22
No	18 (40)	17 (41)	1.57	0.47–5.28
Don't know	10 (22)	6 (14)	<i>reference</i>	
Missing	–	–		

---

*The presented percentages are non-missing proportions*

Variables that were significant in the univariable model were inputated into a multivariable logistic model using the enter method. The model two variables; advised that small amounts were acceptable and frequency of drinking before pregnancy (Table 16). The model was significant ( $X^2 = 11.85(3)$ ,  $p = 0.008$ ), explained between 13.0% (Cox and Snell R Square) and 17.4% (Nagelkerke R Square) of the variance, and correctly classified 64.7% of the cases. Women who had been informed that small amounts were acceptable to consume were over four times more likely to consume any alcohol information that small amounts was acceptable was associated with consuming alcohol (OR = 4.7, 95% CI 1.35–16.33). Furthermore, women who drank twice per week or more were four times more likely to drink any alcohol during pregnancy (OR = 4.01, 95% CI 1.10–15.51). Advise to drink less was no longer significant when entered into the model with these two variables, neither were any of the previously presented variables on demographic, alcohol, advice and attitude, or relationship and partner drinking.

**Table 16. Multivariable logistic regression of any alcohol use during pregnancy (English women only, dependent variable: abstained = 0, any alcohol use = 1)**

	Abstained (n=45)	Any alcohol (n=43)	OR	95% CI
<b>Informed/advised that small amounts was okay</b>				
No	40 (91)	29 (67)	<i>reference</i>	
<b>Yes</b>	4 (9)	14 (33)	<b>4.69</b>	<b>1.35–16.33</b>
Missing	1	–		
<b>Frequency of drinking before pregnancy</b>				
Once per month or less	15 (36)	7 (16)	<i>reference</i>	
2–4 times per month	20 (48)	23 (54)	2.56	0.83–7.49
<b>&gt;2 times per week</b>	7 (17)	13 (30)	<b>4.06</b>	<b>1.06–15.51</b>
Missing	3	–		

*The presented percentages are non-missing proportions*

## 4.4 Results - Partners

In total, 116 partners returned a questionnaire for the study; 26 English partners and 90 Swedish partners. Table 17 shows the socio-demographic characteristics of partners included in the study. Significantly more English partners were married and were first time parents, compared to Swedish partners.

**Table 17. Socio-demographic characteristics of partners, n (%)**

	England (n=26)	Sweden (n=90)	Total (N=116)	<i>p</i> -value
<b>Age, Mdn (min–max)</b>	31.0 (21–42)	31.0 (21–50)	34.0 (23–54)	0.95
<25	–	5 (6)	5 (4)	0.72
26–35	17 (68)	57 (64)	74 (65)	
>36	8 (32)	27 (30)	35 (31)	
Missing	1	1	2	
<b>Education</b>				0.66
Less than university degree	11 (42)	44 (49)	55 (48)	
University degree	15 (58)	45 (51)	60 (52)	
Missing	–	1	1	
<b>Relationship status</b>				0.034*
Married/Civil partnership	20 (77)	45 (50)	65 (56)	
De facto relationship	6 (23)	44 (49)	50 (43)	
Single/Divorced/Other		1 (1)	1 (1)	
Missing	–	–	–	
<b>First-time parent</b>				0.054
Yes	18 (69)	43 (48)	61 (53)	
No	8 (31)	47 (52)	55 (47)	
Missing	–	–	–	
<b>Employment status</b>				0.20
In employment	26 (100)	83 (92)	109 (94)	
Student/unemployed/other	–	7 (8)	7 (6)	
Missing	–	–	–	
<b>Planned pregnancy</b>				1.00
Yes	21 (81)	72 (80)	93 (80)	
No	5 (19)	18 (20)	23 (20)	
Missing	–	–	–	

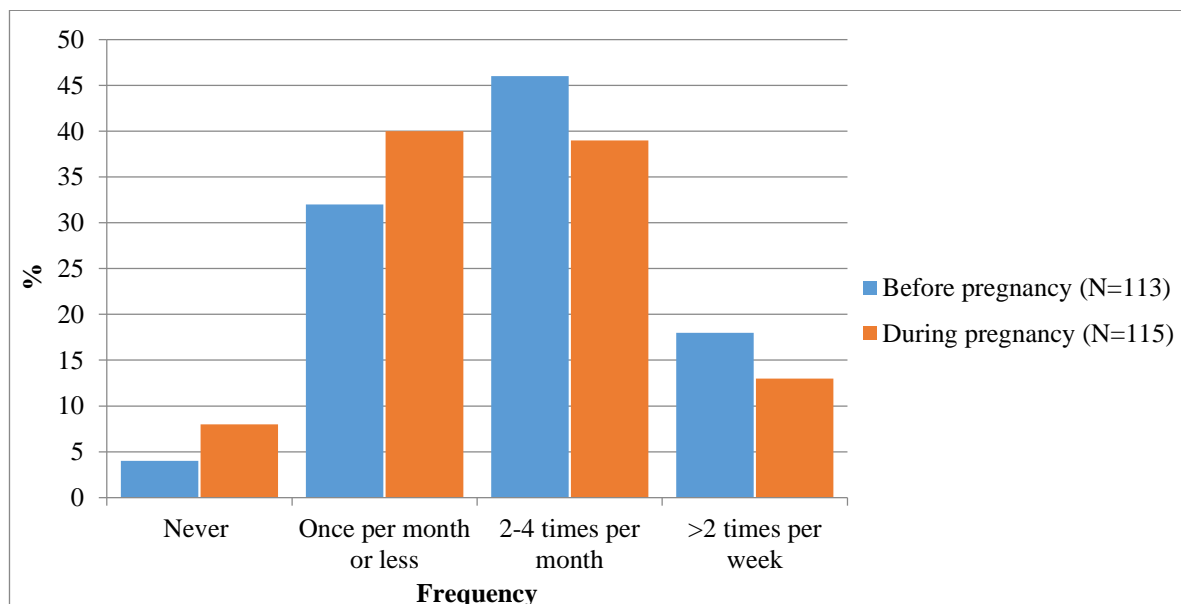
*The presented percentages are non-missing proportions, \*Fisher's exact test*

As described in section 3.4.7, matched pair analyses were not possible to elucidate the partners influence on women's alcohol use during pregnancy. However, the collected data was explored to elucidate potential changes in partners drinking habits during pregnancy,



as compared to before pregnancy. Figure 15 shows the frequency of drinking among partners before and during pregnancy, where a slight shift was evident towards less frequent drinking.

**Figure 12. Partners' frequency of drinking before and during pregnancy**



Comparing amount consumed before and during pregnancy indicated that partners on average drank less both at typical and special occasions during pregnancy. Before pregnancy, the median intake of alcohol on typical drinking occasions was 45.0g, compared to 39.6g during pregnancy. Wilcoxon's ranked test indicated that this difference was statistically significant ( $Z = -5.37$ ,  $p < 0.001$ ). Similarly, the median intake on special drinking occasions before pregnancy was 99.0g, compared to 80.0g during pregnancy ( $Z = -2.79$ ,  $p = 0.00$ ). Overall, it appeared that partners reduced their drinking whilst their partner was pregnant, albeit to a limited extent in regards to amount consumed. Converted into UK units this change equated to a reduction of 0.6 units on typical drinking occasions before and during pregnancy (5.6 and 5.0 units, respectively), and 2.4 units on special occasions (12.4 and 10.0 units, respectively). However, there were also significant differences between the two countries; English partners drank significantly more on typical occasions before and during pregnancy, and on special occasions during pregnancy compared to Swedish partners (data not shown). There was no significant difference on amount consumed on special occasions before pregnancy.

## 4.5 Discussion

The aim of this quantitative study was to compare the prevalence of and factors associated with alcohol use during pregnancy among parents in England and Sweden. Overall, the findings showed significant differences in the prevalence of any alcohol use during pregnancy between the countries, however low numbers of Swedish women who reported any alcohol use during pregnancy limited further analyses on associated factors. In this section I will discuss the implications of the results in relation to the existing literature and suggestions for future research and practice.

The findings from this study indicated that if pregnant women are asked if they are drinking alcohol, responses will vary depending on when during pregnancy we ask the question. This was highlighted by Ethen et al. (2009), who explored alcohol use during pregnancy in a study of 4,088 American women. The study found that alcohol use decreased from 22.5% in the first month, to 8.5% in the second month, and to 5.5% in the third month of the first trimester. In the second trimester, any use increased to 7.4%. In the third trimester 7.9% reported any alcohol use. Binge drinking on the other hand decreased from 7.4% in the first trimester to 0.5% in the third trimester (Ethen et al., 2009). The current study showed that whilst most women reported consuming 25g or less per occasion, 60% of women who reported any alcohol use did not drink in the first trimester but did drink later during the pregnancy. O’Keeffe et al. (2015) noted that one of the several methodological issues with accurately estimating the prevalence of prenatal alcohol use is at which stage of pregnancy women are surveyed. The literature around smoking has indicated that some pregnant women are ‘spontaneous quitters’ (Chamberlain et al., 2013), and it is possible that this is also the case for alcohol. However, more research is needed to explore whether women who quit also stay abstinent.

Official guidelines, which at the time differed between the countries, may have contributed to the advice given in antenatal care and subsequently influenced drinking during pregnancy. As shown, there was no significant difference between any use of alcohol during pregnancy among women who were given the abstinence advice (in the whole sample), however women who continued to drink were significantly more likely to report that the advice given in antenatal care was to reduce drinking than women who abstained. This is an important finding that reflects research suggesting that women who perceive the guidelines as accepting small amounts are more likely to drink (Nilsen et al., 2012). This

was a clear distinction between the countries, as significantly more women in England reported that they had been advised that small amounts were acceptable to consume than Swedish women. Midwives' approach to providing guidance and advice about alcohol will be further explored in Chapter 6.

Whilst initial analyses indicated that women who reported any alcohol use during pregnancy were more likely to be married, no socio-demographic factors were significant in the univariable logistic regression. A systematic review on predictors for alcohol use during pregnancy showed that that income or social class, as well as marital status, were less consistent or only infrequently found to be significant predictors for alcohol use during pregnancy (Skagerström, Chang & Nilsen, 2011). On the other hand, levels of drinking before pregnancy were significant in the final model and women who drank twice per week or more before pregnancy were significantly more likely to have consumed alcohol during pregnancy. The systematic review by Skagerström and colleagues found that levels of drinking before pregnancy was one of the strongest predictors for continued use (Skagerström, Chang & Nilsen, 2011), which has also been found in later studies (Callinan & Ferris, 2014; Mallard et al., 2013). Initial analyses also indicated that women, in the full sample, who reported any alcohol use during pregnancy consumed significantly more both at typical and special drinking occasions before pregnancy, which may relate to HED. Anderson et al. (2014a) found that women whose drinking patterns were binge drinking only before pregnancy were less likely to change their drinking habits during pregnancy and continued risky drinking also during pregnancy. In the current study 49% of women drank over the HED limit on special occasions, compared to 27% on typical drinking occasions, before pregnancy. Thinking about the type of drinking occasion as well as level of drinking may be ways of further understanding the trajectories into behaviour change during pregnancy. This will be discussed further in subsequent chapters.

Separating drinking occasions also related to the idea that underreporting could be reduced by allowing women to categorise their drinking patterns and drinking occasions. Previous studies have suggested that survey data often fail to account for alcohol recorded through sales data (Ekholm et al., 2011; Stockwell et al., 2004). Developing surveys including more in-depth questions and specific measures on quantity and beverage type can therefore produce more accurate data (Casswell et al., 2002). A survey in the UK (N=1,971) used so-called context specific questions of alcohol consumption and found that average weekly consumption was 20 units, compared to 15 units in previous surveys (a 33% difference)

(Morleo, Cook & Bellis, 2011). A more recent study aimed to include all types of drinking occasions over a longer time period. The findings showed that when people were asked about their drinking on special occasions, besides their typical drinking pattern, reported amounts increased. The authors concluded that the additional units of alcohol reported using this method could account for the gap of 41.6% between survey data and sales data (Bellis et al., 2015). The current study attempted to adopt a similar approach to explore whether questions of special occasion drinking may increase reported alcohol use during pregnancy. The prevalence reported in the current study is similar to previously published research from Sweden, where 6% of women reported any alcohol use (Nilsen et al., 2008), and from England where 44% of women had consumed any alcohol (McAndrew et al., 2012). Even though the reported prevalence is similar across studies, the current study showed that some women only drank at special occasions. This has implications for practice as addressing the type of drinking occasion pregnant women consume alcohol might provide useful information for health professionals to target and adapt their conversations about alcohol and understand when women may experience pressure and/or temptation to drink alcohol.

Asking about drinking at special occasions is not only be important in regards to accurately estimate amounts consumed, but also due to that drinking at special occasions may be seen as more acceptable. A study of 439 pregnant Danish women showed that 16% of women believed that it was acceptable to drink at special occasions (Kesmodel & Schiøler Kesmodel, 2002). Another study, which investigated public awareness and attitudes towards the risks associated with drinking during pregnancy, found that fewer respondents believed that pregnant women should abstain at special occasions (16%) compared to the option that pregnant women should “customarily abstain” (25%) (Little et al., 1981). In the current study there were similar proportions of women who reported only drinking at typical occasions and women reporting only drinking at special occasions. The numbers of women who consumed alcohol during pregnancy in the current study was very low and further analyses of the amount consumed by women who drank at typical or special occasions only, or at both, were not possible. Future research should explore whether amount consumed at different drinking occasions differ amongst women who continue to drink during pregnancy.

Using retrospective reports indeed has limitations as recall bias is a potential issue. Previous research has adopted retrospective design, as changes in prevalence of alcohol use across trimesters can be identified (Ethen et al., 2009). Many previous studies of prenatal alcohol use have assessed alcohol use at one point during pregnancy, for example, at ten to 12 weeks (Nilsen et al., 2008; Smith et al., 2014) or at 30 weeks (Alvik et al., 2006b; Göransson et al., 2003). In the light of the finding from the current study that 60% of women did not drink in the first trimester, studies that collect data particularly in the first trimester may underestimate the true prevalence of any alcohol use during pregnancy. Additionally, prevalence of alcohol use during the first trimester is higher before women know they are pregnant. A study from New Zealand found that 34% of women consumed alcohol at some point during pregnancy, but a smaller proportion (24%) continued to drink after they found out they were pregnant (Mallard et al., 2013). The fluctuations of prevalence of drinking during shorter periods during pregnancy, including unintended exposure, will further give a better understanding of the patterns of drinking. A prospective design with a larger sample would allow for this, which should also look at whether levels of drinking vary across the trimesters (e.g. higher towards the end). The current study did not indicate that such pattern existed within the sample.

An influence on alcohol use during pregnancy that was of particular interest was partner drinking. The current study found that women who reported any alcohol use during pregnancy also reported higher frequency of drinking in their partner before and during pregnancy. However, the partner drinking variables were not significant in subsequent analyses of English women that excluded non-drinkers prior to pregnancy. A study among Ukrainian women by Bakhireva et al. (2011) found increased likelihood of continued alcohol use if the partner was a heavy drinker. The current study had too low numbers, and poor response rate to achieve matched pairs of both woman and partner, and therefore relied on the woman's report of partner drinking. It is possible that the current study did not find such an association as alcohol use only was assessed in relation to frequency, and based on the woman's account. Previous research has also indicated that first-time fathers tend to cut down to a greater extent during pregnancy than fathers with previous children (Mellinger et al., 2013). As with partner drinking, alcohol use during pregnancy has higher among first-time mothers, however the partner may not necessarily have been a first-time parent. Further research using matched pair analysis is therefore needed to further explore if, and if so how, partner drinking may influence women's alcohol use during pregnancy.

One important finding, in the light of the new drinking guidelines which were announced by the UK CMOs in January 2016 (Department of Health, 2015), is the influence of type of advice. The current study did not find any significant difference between being advised to abstain in the group of women who abstained during pregnancy compared to those who reported any drinking. However, advice to drink less and that small amounts was acceptable to consume was significantly associated with a higher likelihood of any alcohol use during pregnancy. Nilsen et al. (2012) found that women who perceived the advice as cutting down on alcohol were more likely to drink during pregnancy. A recent qualitative study of women's perceptions and understanding of the previous drinking guidelines in England, and in Scotland, found that women in addition to official guidelines from health professionals also relied on lay advice. This included friends, family, and other people in their social environment but also acquisition of advice over the internet. Seeking information from sources other than health professionals may result in confirmation bias, some women sought out information that would support their own opinion or idea that small occasional amounts of alcohol would not be a problem (Schölin et al., unpublished).

The impact of the new abstinence advice (Department of Health, 2015), needs to be explored in future studies in relation to whether it has impact on women's decision to drink. Qualitative research from other countries that endorse complete abstinence, such as the Netherlands or Australia, has shown that despite strict guidelines, midwives advise women that they can drink some alcohol (Crawford-Williams et al., 2015b, 2015c; van der Wulp, Hoving & de Vries, 2013). Women's interpretation of information and practices of advice given by midwives are therefore important aspects to explore qualitatively, to gain a better understanding of reasoning of women as well as health professionals.

While the findings resonates with previous studies that higher levels of drinking before pregnancy (Skagerström, Chang & Nilsen, 2011) and advice about small amounts being acceptable to consume (Nilsen et al., 2012), the results might be affected by recall bias. (Green & Thorogood, 2014). Women may not have accurately recalled their level of consumption before pregnancy and subsequently reported higher frequency than was true. Furthermore, the recruitment methods, as has been described, may have sampled women who are not representative of the general population of pregnant women. Finally, many different factors may play part of these results, specifically confirmation bias. Women who continued to drink may have been more likely to report that they were advised that small amounts was acceptable to justify their decision. Furthermore, there was also some

indication in the initial exploration of the data that women who continued to drink were more likely to agree that there is a safe limit of drinking during pregnancy. This may also be related to a way to justifying their behaviour, as has been addressed in previous research (Loxton et al., 2013). Finally, while the model developed in this study found two variables which may explain why some women continue to drink alcohol, there may be additional influences that have not been collected in this study. The above mentioned aspects need to be taken into consideration for interpreting the findings of the model.

#### ***4.5.1 Strengths and limitations***

This study is the first of its kind to compare alcohol use during pregnancy in countries with different guidelines, including questions regarding special occasion drinking. Using the thinking of context specific questions, the study fills a previously scarce field of research and suggests that asking questions more openly about special occasion drinking may result in different answers than general drinking questions. Using special occasion drinking, in addition to typical occasions, over the course of the entire pregnancy allowed for outlining trajectories of women's drinking. This is an important finding as many previous studies have only asked about drinking at one point, often in early pregnancy. In addition to comparing prevalence of alcohol use, this study also focused on the closest social network around the woman that may impact on decisions to drink – their partner.

This study has several limitations that need to be addressed. In the North West of England, where Merseyside is located, alcohol consumption among adults is higher than the England average (Office for National Statistics, 2013), as are hospital stays for alcohol-related causes (PHE, 2015). In Örebro County on the other hand, risky drinking and hospital-admissions are lower than the national average (PHA, 2015c). The results may therefore not be generalisable to England and Sweden as a whole, as the samples have been drawn from populations with different levels of drinking than the national average.

Another limitation relates to the opportunistic sampling strategy, which is unlikely to have obtained a representative sample of women and partners. Due to the nature of the sampling approach, no data was collected on non-responding parents. The lack of information of number of distributed questionnaires at English children's centres, despite several attempts to follow-up, limits the ability to calculate the true response rate. Even so, in the instances where number of distributed questionnaires was known, the response rate was very low. Finally, the recruitment strategy may have targeted women who engage in parent-infant

services and support groups women who drank, perhaps at high levels, during pregnancy may not have been reached as they may not engage with such services or groups.

The use of non-validated scales and measures in the questionnaires is another limitation to the reliability to the items included and the validity of the results (Bryman, 2008). The use of questions developed specifically for this study reduces the comparability of the findings with other studies of alcohol use during pregnancy using other measures for alcohol consumption and other measures included.

Furthermore, the low responses from partners, particularly in the English sample where drinking was most prevalent, meant that paired analyses could not be conducted. Difficulties in recruiting men (all respondents who did reply were men) into health-related research has been demonstrated in previous research (Carpenter et al., 1999). The analysis therefore included women's own report of partner drinking as a proxy measure. It is likely that women did not accurately estimate the frequency of their partner's drinking, and the lack of a quantity measure to accompany frequency it is not possible to draw conclusions on the level of drinking by the partner. The proxy measure of partner drinking means that the results need to be interpreted with caution. Finally, almost identical questionnaires were given to partners for reporting on their alcohol use, attitudes, and many other questions asked to the women. However, in this thesis these data were less valuable in the absence of an indication how they matched up with the women's report on alcohol use during pregnancy.

Finally, methodological difficulties in asking about people's alcohol consumption is a well-known issue (van de Mortel, 2008). Social desirability, in which respondents answer a question in a way that they believe is socially acceptable, is likely to influence results in studies on sensitive topics such as alcohol use during pregnancy (Johnson & van De Vijver, 2003). Drinking during pregnancy is associated with stigma (Room, 2005), and this may be particularly true among Swedish women who had been exposed to the Swedish advice of complete abstinence. For this reason the pilot study, which was conducted in interview mode, also had a function in assessing whether respondents felt able to answer the questions. One way of limiting the potential for underreporting was for the questionnaires to be self-administered and anonymous in the full study. The wording was carefully thought through, and tested in the pilot study, to avoid judgemental questions. The possibility for women to quantify the amount consumed of a beverage may have reduced



under reporting. Asking about drinking at special occasions may also have reduced underreporting, as in some contexts perceptions around drinking at special occasions are somewhat permissive (Kesmodel & Schiøler Kesmodel, 2002; Little et al., 1981).

## **4.6 Conclusions**

This quantitative study of 321 women in England and Sweden showed that women in England are significantly more likely to report any drinking during pregnancy than Swedish women. Multivariable logistic regression indicated that higher frequency of drinking before pregnancy and advice that small amounts were acceptable increased the likelihood of any drinking during pregnancy among English women. This may be important for designing interventions and for health professionals who advise pregnant women about alcohol. The finding that alcohol use during pregnancy was associated with getting advice to cut down on alcohol is very relevant in relation to the new drinking guidelines in England. From a harm reduction perspective future research should look further into whether women who drank at higher levels before pregnancy were likely to get advice to reduce their drinking. Whilst abstinence indeed is the only way to know no harm is caused to the foetus, a reduction in consumption will reduce the risk even though not removing it completely. The findings also show that pre-pregnancy interventions for women drinking frequently as well as asking pregnant women throughout the entire pregnancy about their alcohol use are important areas for practice and future research.

### Box 3. Key findings from Chapter 4

- Previous research has attempted to explore the extent to which women continue to drink in pregnancy and which factors are associated with continued use, however there is limited knowledge of similarities and differences between countries
- This study aimed to investigate the prevalence of and factors associated with alcohol use during pregnancy among parents in England and Sweden
- Significant differences were found in prevalence of any alcohol use during pregnancy; 44% of English women reported any alcohol use during pregnancy compared to 4% of Swedish women ( $p < 0.001$ ).
- Further analysis of factors associated with continued use was only performed including English women, due to the low number of Swedish women who reported any alcohol use. Logistic regression of English women who were drinkers prior to pregnancy indicated that women who drank more frequently before pregnancy (more than twice per week) were significantly more likely to continue to drink during pregnancy (OR = 4.30, 95% CI 1.13–16.34) as were women who had been advised that small amounts was acceptable (OR = 4.79, 95% CI 1.37–16.7).
- This study has limited ability to draw conclusions regarding alcohol use in pregnancy, but the findings indicate that health promotion strategies to prevent alcohol use during pregnancy may be targeted towards women of childbearing who drink frequently and to advise women to not consume alcohol during pregnancy.

## **Chapter 5: Exploring parents' views on alcohol use and alcohol advice during pregnancy**

### **5.1 Introduction**

The aim of this qualitative study was to explore parents' perceptions of alcohol use during pregnancy. The different guidelines in place at the time of the study (see 2.6.2) in essence interpreted the same evidence in two different ways. While the English guidelines stipulated that low levels of drinking are unlikely to cause harm (NICE, 2008), the Swedish approach of abstinence rather suggests that any drinking could be risky (Leppo, Hecksher & Tryggvesson, 2014). These different approaches may therefore have had different impacts, both in terms of on how pregnant women in England and Sweden perceive the risks of drinking whilst pregnant, but potentially also how the general population views these risks. This was demonstrated in Chapter 4, as significantly more English women believed that there was a safe limit of drinking when compared to Swedish women.

This chapter presents findings from a qualitative study, with an interpretivist qualitative design. The study included interviews with 44 parents in Merseyside and Örebro County (see table 6 in 3.6.1). The concepts of the health belief model (HBM) (see 2.8) guided the design of the study to elaborate on aspects known to influence behaviour change. However, in addition to intrapersonal factors of the HBM, the study considered wider factors that may influence behaviour.

The partner, as part of an interpersonal level of influence in the socio-ecological model of health, was theorised as a potential influence for women to continue to drink. I was therefore interested in exploring changes in alcohol habits for both the woman and her partner during pregnancy. This chapter shows how alcohol use during pregnancy is viewed in diverse ways within different cultures, and how moral beliefs underpin perceptions and attitudes. In this chapter I will present the key findings from the themes (see 3.5.1) which emerged from the thematic analysis. I will discuss how this contributes to the existing literature.

## **5.2 Aims and objectives**

The aim of this study was to explore the perceptions of alcohol use during pregnancy and alcohol advice in antenatal care among parents living in Merseyside, England and Örebro County, Sweden, and addressed number 3 of the overall research questions (see 3.2). More specifically, the objectives were to:

- Understand how women and their partners alter their drinking habits in relation to pregnancy;
- Explore what influence the partner of the pregnant woman has on her drinking behaviour during pregnancy;
- Investigate attitudes towards drinking during pregnancy among parents who recently were pregnant;
- Explore parents' experiences and perceptions of alcohol advice in antenatal care; and
- Compare attitudes, practices of alcohol use, and perceptions of advice during pregnancy in England and Sweden.

## **5.3 Perceptions around drinking during pregnancy, guidance and advice by women and partners**

### ***5.3.1 What is 'drinking'?***

Forty-four parents were interviewed for the study. The parents' age ranged from 24 to 40 years and the majority were educated to degree level (see table in 3.5.1). There was some variation in life circumstances before they had children; however, most parents appeared to be in a place in their lives where starting a family was a welcomed and often planned situation. Several parents worked in areas including health care, research, criminal justice, and education where they had encountered individuals with confirmed or suspected FASD. While the purpose of qualitative research is not to generalise findings to the general population (Bryman, 2008), it is worth mentioning that the parents who took part in the study may have had greater understanding of the topic than the general population due to their professional experience.

Among the women interviewed, none of the Swedish women had drunk alcohol during pregnancy and nine out of the 18 English women had drunk alcohol. For the purpose of this study I talk about women as either abstainers or drinkers, similar to other studies (Meurk et al., 2014) and the presented findings in Chapter 4. However, throughout this section I will discuss the aspects of women's drinking, as drinking sometimes was just occasional or sporadic rather than a regular habit. An interesting observation that emerged initially however is what women classed as drinking. I was interested in understanding this concept, and it is important to acknowledge the way I have defined women's drinking and how they defined it themselves. I have not categorised women as drinking during pregnancy if they had a sip of alcohol at one or several points during pregnancy. Rather, when women described that they had consumed 'a drink' I regarded this as drinking. But one initial important question in order to discuss drinking during pregnancy is what women themselves considered as drinking? One English woman initially stated that she avoided alcohol during pregnancy, but later described several occasions where she drank wine, for example, in relation to celebrations.

*I just tried to avoid so I didn't drink alcohol when I was pregnant [...] I did allow myself to have the odd sip every now and again [...] I think at one point I had a small glass of wine probably a handful of occasions that I could count on one hand that I had a small glass of wine*

English woman 5

In light of the issue regarding underreporting of alcohol use during pregnancy, it is important to understand these views women may have in regards to drinking. The account from this English woman suggests that she did not perceive herself as a drinker as she says "so I didn't drink alcohol when I was pregnant", despite having a small glass of wine on "a handful of occasions". As Meurk et al. (2014) suggested, women may underreport their drinking if they cannot account for occasional drinking. This is also evident later in this chapter, as some English parents differentiated between what they classed as 'responsible' (smaller amounts, controlled moderate drinking) and 'irresponsible' (larger amounts, disregarding the guidelines). In the following sections I will present the four themes covering parents' perceptions of alcohol use during pregnancy: i) knowledge and conceptualisation of risk, ii) changes in alcohol habits during pregnancy, iii) moral discourses, and iv) perceptions of alcohol advice.

### 5.3.2 What is risk?

**Table 18. Theme I: Knowledge and conceptualisation of risk**

Subtheme	Illustrative quote
<b>Pre-existing ideas about drinking</b>	<i>I was never in that frame of mind really. I feel like I needed to not drink if you know what I mean</i> English Woman 6
<b>Awareness of specific risks</b>	<i>Well I can imagine that it affects the whole life so that it can have sustained effects but, exactly what disabilities you can get, I don't know but I can imagine that it is related to delays in development, perhaps some form of retardation</i> Swedish Woman 1
<b>Conceptualisation of risk</b>	<i>You just want the best for them and you want to make sure that you know, nothing (you did) [...] (can be) blamed for anything that might have gone wrong or anything like that</i> English Woman 1
<b>Sources of information</b>	<i>Through work (nurse) yes and personally from the appointment that (wife's name) attended you know when she was first pregnant</i> English Partner 1

This theme included the knowledge or attitudes parents had even before they got pregnant, their awareness of risk, how they conceptualised those risks with drinking, and which sources had informed their knowledge. It was evident that parents had knowledge or views on whether pregnant women should drink or not earlier in life, before starting a family was on the agenda. Most parents could not recall when they had heard that alcohol was something to be avoided during pregnancy; this was rather perceived as tacit knowledge.

*I think I had always known... before I got pregnant, before I even thought about getting pregnant I thought that I would cut my alcohol down if I got pregnant and just everything, you know you just have to look after yourself a bit more... so more than just someone telling me what to do it was more pre-decided*

English Woman 2

*It's always been there, even if no one has said it explicitly that you shouldn't drink, it's like always been there*

Swedish Partner 6

Despite pre-existing ideas that alcohol should be avoided during pregnancy, information given during pregnancy further informed women. One English woman described how she initially had been of the view that she would abstain from drinking during pregnancy but when she looked at the NICE guidelines the information given there had changed her mind about abstaining.

*I was just always of the opinion that I just wouldn't have anything but then when I actually got pregnant I did slack in a little bit and like "ah I don't think the odd glass of wine is not going to matter too much" so I think my views before becoming pregnant were different to after*

English Woman 5

For this woman, the guidelines allowed her to have a more relaxed attitude towards drinking. For other English women, the limits given within the NICE guidelines did not change their views about abstaining.

When discussing the existing knowledge about alcohol and pregnancy, many parents mentioned that it was passed on from family members or relatives. However, several parents also had experiences of family members or relatives from older generations having more liberal and relaxed attitude towards drinking. One Swedish woman described how her grandmother had offered her a drink, with the suggestion that; "it's okay, she can have a little bit". For this woman, she felt that this situation presented an opportunity for her to educate her older relative; "We have talked about that, that you might have done that when she was young and was expecting... then you could drink a little bit and it wasn't all that strict" (Swedish Woman 12). Others also described evaluating their own knowledge with that of their parents or older relatives, concluding that their views differed quite substantially.

*A lot of it was looking at it ourselves so what we read ourselves, what we looked online with our first child and differences between what the opinion was [...] the opinion that we had ourselves did seem to differ so with our parents (they) would have had a drink a couple of times during the week and that what you are brought up with from their point of view, probably great-grandparents even more so*

English Partner 4

The previous quote came from the partner of a couple that I interviewed. In this case, the woman had drunk alcohol in both her pregnancies (excluding a period during one of her pregnancies where she experienced complications that needed medical attention). They both shared the attitude that some alcohol was acceptable, however the partner here mentions that even though they had liberal views and accepted some drinking, their parents would have consumed more alcohol when they were pregnant. Despite this couple being comfortable with their choice of consuming some alcohol during pregnancy, anecdotes from family members concerning what they classed as safe levels were treated with caution. Another English woman, who drank during pregnancy, described how her mother had been relaxed about both smoking and alcohol use. The woman had been a smoker herself before getting pregnant, and noted that the recommendations were stricter now compared to when her mother had been pregnant.

*She said the same about everything, that they didn't stop anything when they were pregnant because there were no health recommendation so she smoked at the beginning of the pregnancy and that has obviously changed [...] she had the same attitude as me that surely one every now and again isn't gonna, not gonna harm.*

English Woman 2

While this woman agreed with this more relaxed attitude, she noted that older generations smoked or drank due to lack of health recommendations. Increased research and knowledge around harmful substances during pregnancy was seen as a reason to be more cautious, but this woman also felt that there were some levels of drinking that would not harm. However, she was clear on that she believed smoking was not acceptable during pregnancy.



The guidelines in place in England at the time stated that “at this low level there is no evidence of harm to the unborn baby” (NICE, 2008) (see box 1, p.5), which led me to wanting to understand parents’ perceptions of the risks associated with drinking. It became clear that parents knew that alcohol was harmful, especially in large quantities. The specific risks from drinking were however not necessarily known. One Swedish partner said; “like I know that it’s not good, but then *what* it is that can affect the baby itself I don’t really know” (Swedish Partner 4). In contrast, ten of the English parents and one Swedish woman specifically named FAS or FASD as a consequence of alcohol exposure in utero. As already mentioned, these parents had professional experience of individuals affected by alcohol exposure during pregnancy. The tacit knowledge that many parents described, which may have been reinforced by social norms against drinking during pregnancy, dominated any contradicting information that parents came across in the media or through people in their family or peer group.

The actual conceptualisation of risk presented itself differently among parents. Many women described being very risk averse when it came to alcohol, with the belief that any alcohol could harm the baby. This was often discussed as a way of balancing modifiable risks with unpredictable complications. Women therefore argued that if they did not drink alcohol, they could not be blamed for any adverse outcomes for the baby.

*I just didn’t want any complications to happen and be like “is it because I drank, is it because I smoked” is it because I didn’t look after myself?” If anything was to happen I will know that I have done my best... and that would be beyond my control*

English Woman 3

*Because I think that, because there are so many things you worry about, you – me, during the pregnancy. So if I can like cut some of them out [laughing] or something like so it would feel a bit easier. Because it is things like that you can influence*

Swedish Woman 10

The quote by the English woman above represents an important aspect of pregnancy that is commonly discussed in the literature; responsibility. While the woman here talks about effects from not “looking after herself”, this is also a representation of expectations of

pregnant women to adapt certain behaviours that are deemed appropriate to ensure a healthy pregnancy and a healthy baby (Lupton, 2012). Her reference to adverse effects being “beyond her control” also suggests that responsibility and blame plays a part in how she conceptualised risk of drinking. In the second extract, the Swedish woman discusses modifiable risks, where alcohol is seen as a risk that can be cut out, perhaps easily. Many women who abstained noted that for them alcohol was not a “big thing” to cut out from their normal lifestyle, which made the choice to abstain an easier change in behaviour.

Women who continued to drink interestingly discussed risks in relation to “feeling the effects of alcohol”. Intoxication was seen as a threshold for harm, because if the pregnant woman could feel the alcohol then the foetus could as well.

*I sort of planned for it and allowed for “well okay if you feel like it, you know what go ahead and have a drink” and so I had a drink on Christmas day but you know it lasted for like two hours, two-three hours that glass of sparkling wine of five percent or whatever it was ‘cus I was really clear about not really wanting to feel in anyway drunk or tipsy because I would have just felt really guilty then so, the purpose of it which would have been pleasure would have just been completely negated by that*

English Woman 12

*I definitely would take that very seriously and not want to sort of be drunk if I was pregnant. Or having much alcohol at all because then it is very dangerous to the baby’s developing brain and can lead to quite a lot of problems that they can have in life*

English Woman 7

An interesting observation made was that some women who continued to drink did have knowledge of FASD. English woman 7, quoted above, was one of these. She had a postgraduate degree and worked with children who had mental disabilities, including children who had been exposed to alcohol during pregnancy. In these discussions, women expressed their knowledge that specifically FAS is caused by heavy drinking and therefore occasional drinking was not considered to be a risk, as it would not be at the levels which could cause FAS. One woman took the evaluation of risk further, as she compared her own occasional drinking with her friends’ drinking behaviour.

*A friend actually had a quarter of a bottle of Jägermeister and smoking joints a couple of days before she gave birth [...] it was like “but at least I am not doing that, at least I’m not necking Jägermeister with her (the baby) inside of me”*

English Woman 18

This woman was the youngest of the sample and lived in a fairly deprived area, and from her descriptions of her social environment it was clear that it was very different to the other women who I interviewed. Because she regarded her friends’ behaviour as riskier than her own, it provided her with a comparator against which she could judge her own behaviour.

Midwives were the most common source of information mentioned by parents, but as previously demonstrated many parents believed they already had the knowledge required before they went for their first appointment. There were additional sources too with parents stating that pregnancy meant reading a lot of different material in order to learn and prepare for several aspects of the pregnancy.

*I think most parents with your first child you look everywhere really, and you would look at every source so one of them might be, was it the travel or guide to pregnancy [...] We did look at websites, I can’t recall what website we looked at and whether it was NHS direct or what it was, I can’t recall”*

English Partner 4

This appeared to be a conscious process of information seeking, as some had actively been reading up on the pregnancy. This was not the case for all parents, and some mentioned that in their contact with healthcare they had been given a large number of leaflets, which led to a feeling of ‘information overload’ (Anderson et al., 2014b; Loxton et al., 2013). For this reason, parents felt that they may have missed information specifically relating to alcohol, as there was a lot of other information to get through. Due to the number of potential different sources that parents might be exposed to, including media, friends and families (Holland, McCallum & Blood, 2015) I asked an open question about what source they found was reliable in terms of alcohol and pregnancy. The vast majority of parents said that midwives, healthcare in general, were the most reliable source.

*I think the ones that the hospital give you because you think oh well it's NHS it's going to be you know good stuff surely, and then there's you know things that other people say like my mum said "oh go on have a gin and tonic it will be fine" and you go [sceptical voice] "well... yeah" [laughing]*

English Woman 17

*That the midwife has mentioned it, that you got to fill out a paper at the booking in at MVC (antenatal care) where you got to describe your alcohol habits and then you got a leaflet about alcohol and pregnancy. And then they said that you shouldn't drink so it's probably from there [...] you do trust the midwife*

Swedish Woman 9

### ***5.3.3 How do women change their alcohol habits change when they get pregnant?***

**Table 19. Theme II: Changes in alcohol habits during pregnancy**

Subtheme	Illustrative quote
<b>Changes in woman's habits</b>	<i>I drank the night before I found, well the week before I found out that I was pregnant [...] which I still felt really awful about and then, I just didn't bother then, because as well I thought like if you have one then the temptation is to have another and who knows where that cut-off point is</i> English Woman 11
<b>Influences for behaviour change</b>	<i>I don't know but I am of the view that from the minute that you decide to proceed with the pregnancy, whether it's planned or if it's (not), I think that if you make that decision, you owe it to the baby to do everything that you can, to be healthy. And I don't just mean alcohol I mean eating properly, smoking, you know</i> English Woman 10
<b>Partner and relationship</b>	<i>I mean when we were out partying it was together so when (wife's name) wasn't there it wasn't, so I didn't party so then we were sitting at home instead and watched TV instead and had coca-cola and chips instead</i> Swedish Partner 3

One issue that was noted among several women, regardless of whether they had planned their pregnancy or not, was consuming alcohol before they were aware that they were pregnant.

*When I found out that I was pregnant and I knew I had been out for my birthday and so I went for my scan and I was “oh I had too much to drink” and the midwife said “to be honest it won’t really matter, because in the early stages they are literally just a pea”. So she said not to worry too much about it, “you know now so just don’t worry about it but don’t carry on drinking heavily”*

English Woman 17

*In hindsight I realised that I had drunk alcohol (when I was pregnant) and you go “no but oh my god what have I done?”. And then it was that in relation to a visit with the doctor we talked about it and then he said that, and sure they probably don’t want you to break down, but so then he said as an example “in other European countries for example France, there are a lot of women who drink their entire pregnancy because that’s the philosophy that they have”. So that, that’s about it. But so it was a doctor that referenced, so that I wouldn’t have so much anxiety about that I had some wine when I was pregnant”*

Swedish Woman 10

In this first extract, the woman had drunk consumed alcohol before realising that she was pregnant, however she did not seem particularly concerned, possibly because she had been reassured by her midwife that it was not a major problem. In contrast, the second extract was from a woman who had experienced a miscarriage before the pregnancy, referred to in the quote. Before the miscarriage, she had taken a lot of care in regards to alcohol and had not been drinking in case she conceived. However, after the miscarriage she did drink alcohol before being aware that she was pregnant again, as she had not expected to conceive so soon after the miscarriage. She expressed a lot of concern and guilt because of this. What is interesting here is how the doctor refers to “in other European countries” to reassure the woman with that other women elsewhere do drink during pregnancy.

One recurring theme was around changes in alcohol before conceiving, which for some women was seen as unnecessary unless there were difficulties with conceiving. Skagerström, Häggström-Nordin and Alehagen (2015) noted that some women see the pregnancy as the point where alcohol use should be ceased, as conceiving may take a long time. This was noted by one Swedish woman, who had been trying to get pregnant for about a year. She here talks about herself and her husband, and the changes they made whilst trying to conceive.

*We didn't do anything, it took a while, a year. We didn't do anything the first six months or something like that but so we just lived on like usual just yeah as normal as possible. So then when it didn't work after six months or eight months or something like that you started thinking that "right should we do something [laughter] about this" so then we started cutting down, me specifically, cut down on the alcohol [...] we didn't stop completely but we did continue with the beer on the Fridays, but not a bottle of wine and that but cut down on that then. And maybe had one beer instead of two on the Friday. But it was just as often so to speak*

Swedish Woman 16

I interviewed this couple on separate occasions and noted that drinking was a big part of their weekly routine. The 'Friday beer', which they both talked about, was an important ritual after the work week and represented the start of the weekend and winding down, often accompanied with cooking a nice meal. Not wanting to break this routine seemed to be important, and as the woman says here they cut down on the amount that they were drinking, rather than the frequency.

For others, the pre-conception period included careful planning in relation to health behaviour. This included planning around the menstrual cycle and considering when it could have been possible for a baby to be conceived.

*So depending what week of my cycle I was on, it was either, it was zero for two weeks or I would have one glass of wine on a Friday, and Saturday and on a Sunday and then nothing for the rest of the week. And then if I hadn't got pregnant that month I probably would have a bottle of wine [laughing]*

#### English Woman 12

It is interesting to note here how this woman regarded health during pregnancy as important, and did not wish to expose her foetus to alcohol, but did not have concerns about her consumption of a whole bottle of wine (which equates around nine units, three times the previous daily recommendation for women) when she knew that she was not pregnant. This suggests that she may not have been concerned about the impact of drinking on her own health.

When asked about the reason for changing drinking habits during pregnancy unsurprisingly most of the women said that the welfare of the baby was the most important reason. This links back to what has already been discussed around 'what if' something was wrong with the baby, and the blame potentially being due to one's own lifestyle. For women who had continued to drink, alcohol was sometimes diluted with soft drinks, which was a way to reduce the risk to the baby. Similarly, when women justified their intake, the argument was often that it was 'just one drink' which was seen as a low level of risk.

In addition to alcohol exposure, general lifestyle during pregnancy was seen as important, including not taking drugs or smoking. Only a few women had been smokers before pregnancy, and one of these women talked about how she perceived the risks with smoking to be higher than drinking. She stopped smoking when she was pregnant the first time, and held strong opinions against it.

*I just don't think it's my place to judge but with smoking I just can't understand why anyone would smoke when they are pregnant it's just it's obviously wrong [laughing] so why would you smoke but with alcohol it definitely feels, I definitely have less of a, I think instinctively when you see someone having a drink it probably does, you probably would take a second look, it always looks wrong. But I wouldn't judge someone for doing it because it could just be that she's just having one drink and that's the only one she's had throughout the all her pregnancy so, you know. That's fine"*

English Woman 2

Moral judgements about women's lifestyle during pregnancy started to develop in these narratives. The extract above indicated that this woman made it clear that for her, smoking was a much bigger risk factor than alcohol. When she discussed her partner's attitude to her having alcohol during pregnancy she noted that he had approved of her drinking, but she was adamant that he would not want her to smoke when she was pregnant. For some participants smoking was perceived to pose a greater risk to the foetus than alcohol. Only one woman talked about drug use, with this woman having smoked a lot of marijuana before the pregnancy. She had been aware that this was a problem, and subsequently sought help to stop. To her, smoking marijuana was more risky than occasionally drinking alcohol.

*To be fair before I got pregnant I was a proper stoner. I used to just smoke weed all the time so that was one of the first things that you went oh that needs to stop or at least very much cut down and then she (sister) went "oh yeah and then don't you replace weed with drink, because you know it can cause all kinds of problems" [...] I feel proud of how little I did drink, at the same time I did drink so there's that little bit of iffiness with me, but I think that's just because of the fact that I set really high standards for myself especially with using marijuana and that stuff. And that didn't stop but I did cut down as much as I physically could, even mentally could. So the alcohol, it feels like it's so easy, in comparison*

English Woman 18



The weighing up of risk here is interesting, as she noted that she felt some “iffiness” with the fact that she had been drinking in her pregnancy. This was compared to how she felt about cutting down her drug use, and in the wider context it seemed that when compared to her lifestyle before pregnancy she had done as well as she could during pregnancy. This was also related to behaviour in her peer group (see p. 129), as friends of her had been drinking large amounts of alcohol and also smoked marijuana.

Overall, the lifestyle changes that came with the pregnancy were seen as important, the baby’s health being the primary objective. Adaptation of lifestyle is part of the transition into motherhood, but changes in activities and lifestyle may conflict with women’s self-identity (Bailey, 1999). One woman described her usual drinking pattern before her first pregnancy as frequent and related to socialising after work. She noted that the opportunities to drink were limited in the second pregnancy, due to having a child to care for, but in her first pregnancy she could still go out and socialise. Drinking was then seen as something she enjoyed and also a way to preserve her pre-pregnant self.

*I’d give myself a break and not give up everything that I enjoy so the odd glass of wine I thought was fine [...] I was still a little bit of me rather than so much change in one go but yeah I wouldn’t drink heavily [...] I think with (first child’s name), she was the first so I didn’t have any responsibilities at home so I still went out a fair bit and every couple of weeks if that I might have a glass of wine [...] I drank a lot less (in second pregnancy) not just because I was pregnant but because I didn’t want (first child’s name) to see me drinking. So that was like a different influence really rather than the actual pregnancy*

English Woman 2

While intrapersonal factors, such as attitude and feelings about becoming a mother played part in changes to alcohol habits, there were also narratives around the social environment and how that supported or discouraged abstinence. This was different to the anecdotes described earlier, as this was explicitly around being told to drink; “I think more people told me to drink than not to drink, generally” (English Woman 17). For one woman this pressure was very palpable and she felt that she could not get out of the situation by saying no.

*A few days before I gave birth it was (partner's name)'s birthday and his granddad he is, they're very old fashion they can't see why a pregnant woman can't drink a whole bottle of Cava. And it's like "because I am pregnant, no" but then I ended up having half a glass of that. But then there was loads of times where I would have a glass of alcohol and I'd either go "yes okay then" and have a spritzer version [...] But there were a few times where it was kind of, not that I had to (...) drink because, but it was like a very - I had to be socially polite, I couldn't just go "no I'm pregnant"*

English Woman 18

Influence from people around them was not found in narratives from the Swedish parents; apart from a few anecdotes of older relatives who felt small amounts would not be harmful (see 5.2.2). They spoke about social disapproval with drinking during pregnancy, and argued that if they saw someone who was doing it they would feel very uncomfortable. One woman described a dinner with her husband's friend and wife, whom she was just an acquaintance with. Both women were pregnant at the time of this dinner and while the woman I interviewed did not drink, the acquaintance did. The woman described feeling so uncomfortable that she did not want to see the couple again. One partner noted that in his social environment, abstinence from alcohol use or smoking during pregnancy was a certainty.

*Like with family and that, with me and (partner's name) it's nothing weird [pause] not among friends either really. What I [pause] like you might be like the ones you hang out with. That they have the same perception as yourself. Then I have read about or heard of, or I have even seen a pregnant woman smoke, who was daughter of someone I knew and then when I saw her smoke I was very perplexed, I didn't think you'd do that [...] Nothing like among friends and family who have questioned that she doesn't drink, never. It's probably been the other way around if (partner's name) had been having a beer, like 4.5%, then I think people would have looked at her and maybe and like wondered like "what is she doing"?*

Swedish Partner 1

This suggests that the social norms in Sweden strongly stigmatised drinking during pregnancy, which was not necessarily the case in England. One English woman described how being pregnant at the same time as her cousin who chose to drink, left her feeling that there was almost a negative attitude towards her for choosing not to drink. Just like the partner in the extract above who spoke about how there were some commonalities in the group of friends that he interacted with, one English woman described how she did not specifically experience pressure to drink, but rather that other women in her family had made the decision to have some alcohol and that she was being judged and perceived as different for choosing to abstain

*So that was like people was saying to me “oh well she’s doing it” and I felt like I was the one then who was, because I was saying I didn’t wanna do it, I felt like I was saying that she was wrong, you know what I mean. And I feel that people were a bit like, I don’t know like “stop being so” you know what I mean, like “loosen up a bit” kind of thing*

English Woman 11

This woman also noted that while this was the case in her family, her friends who were pregnant at the same time and had also chosen not to drink had created a more supportive environment, so for example when they went out for dinner together no one would pressurise her about drinking.

Changing alcohol habits was not just a process that affected the woman, but also included changes for their partners even if they did not cease drinking completely. One narrative that emerged was the concept of drinking within the couple, and having shared habits. As mentioned earlier, one partner spoke about that whilst the couple did not drink much at home, they did if they went out. However, when the woman was pregnant and did not go out, then neither did he. One woman spoke about the changes, which for her partner meant switching beverage from what they usually drank together.

*He didn't have that bottle of wine that we used to share every other week, he didn't drink that. However he might have had a few beers instead [...] but he never drank wine with dinner when we were alone for example [...] I think it was that he didn't want to drink an entire bottle himself so he felt that opening a bottle of wine was unnecessary*

Swedish Woman 2

Most women felt that the partner's drinking did not affect them and were happy for the partner to continue to drink. Interestingly several women had encouraged their partner to drink, as in these cases it was felt that although they could not drink then, their partner should be able to. This was also confirmed by some of the partners.

*No it didn't bother me whether he'd drink or not in fact I'd actually encourage him sometimes because I can't, you know if there is a situation where I can't then that's when I'd think that one of us should*

English Woman 2

*I felt that I have no right to sit here and have beer. But she has always thought that it was okay. And it has even been that she have gone to get the beer and "I have put beer in the fridge for you" and then it's like "yeah well okay then"*

Swedish Partner 6

Women were of the opinion that whilst they could not drink, this did not mean that their partner had to change their drinking habits. As evident from the quote from the Swedish partner above, which was confirmed by most of the other partners as well, they were somewhat wary about drinking as they did not want to do something that the woman could not do because she was pregnant; "It was kind of a solidarity thing so I felt bad if I was going out because obviously (wife's name) wasn't going out so I'd feel pretty bad if I were going out without her" (English Partner 2). Only one woman, who was currently separated from her partner, explicitly described how she felt that she was lacking support. While it did not change her decision to avoid alcohol, she felt that the presence of alcohol in the home plus the fact that her partner made no changes to his drinking habits made it harder for her.

*I thought he was gonna be a bit more supportive with having the child we wouldn't drink together or he would slow down... but he just carried on as before*

English woman 3

#### 5.3.4 What are the perceptions about right and wrong behaviour during pregnancy?

**Table 20. Theme III: Moral discourses**

Subtheme	Illustrative quote
<b>Autonomy and responsibility</b>	<i>If it's in moderate you know it is their decision isn't it. I would never do it but if it was, I don't feel like it's right to judge somebody else, especially when they have, that you say health professionals that advise it [...] it's not gonna harm the baby if they have a glass of wine every now and again. If I saw somebody going into an off-licence maybe buying loads of [laughing] like a big bottle of vodka it might be a bit...</i> English Woman 1
<b>Social norms</b>	<i>I did find when I was heavily pregnant, even that one beer. The one beer I was having, because of the attitude of other people. I felt that I couldn't even have that because I didn't want to deal with their... condemnation.</i> English Woman 13

One of the central themes of discourses concerning drinking during pregnancy was the conflict between the women being able to decide about their own bodies, and the rights of the foetus to not be exposed to alcohol; described in the literature as the maternal-foetal conflict (Lupton, 2012; Markens, Browner & Press, 1997). Both discourses were emotive, especially around the rights of the foetus. Ensuring the health of the baby was seen as being part of parent responsibilities, which was discussed among English as well as Swedish parents.

*It really sparks something within me. Yeah that you, but the baby can't choose. They just get it (alcohol) in them. No so I get really annoyed. Now I have never had anyone close who has done that then I would really have told them off [pause] no that is so not okay*

Swedish Woman 12

*Obviously it's everybody's personal choice to do that [...] but I do think it's wrong in the sense that if they know that it is putting the child at risk and then they go and carry on doing that then, I probably think that is a bit naughty really*

English woman 6

Strong adjectives were used by Swedish parents to discuss women who drink alcohol during pregnancy. Parents described drinking as “disgraceful” or that women who drink were “stupid”. English parents who disagreed with drinking during pregnancy used terms such as it being “naughty” or them feeling “uncomfortable” about it, which in contrast suggests a difference in social norms and how strongly alcohol use during pregnancy is stigmatised. In general, this was a reoccurring theme across the samples; Swedish parents were clearer in that they believed drinking during pregnancy was wrong which was an attitude with little nuance. It was seen as an issue that was black or white - you drink or you abstain; “I think it is disgraceful, but that’s just what I think. I don't think it is [pause] and if you have you chosen to have a child and you get pregnant then you have a responsibility” (Swedish Partner 1).

Among English parents, however, the official drinking guidelines were a reoccurring theme that impacted attitudes towards women’s responsibilities. Parents often felt they could not judge others behaviour as the guidelines in place at the time allowed for some levels of drinking. Therefore, autonomy had a central focus in English parents’ narratives.

*(Drinking is a) personal choice, keep it at a lower level. Because it isn't for very long, but equally I don't think that it helps women to be public property, when they are pregnant. To disengage their own brains*

English Woman 13

While the idea of women deciding for themselves was expressed in the extract above, one Swedish partner had explicit views on whether women have the right to decide. He described it as a political issue of gender equality, where he positioned himself against the idea that women’s drinking during pregnancy was a question of an autonomous decision.

*I think the difficult is, like we talked about it is this thing about... what is on the agenda who's body it is because we are equal so between the man and the woman so it is damn difficult, it is difficult not to bring it up because... where is the limit for autonomy for your own baby [...] I don't think it is that difficult to abstain and if you think it is difficult to abstain when you are pregnant then you have a different problem. That you might need to deal with before you are pregnant. But it's like if you are to be drinking and stuff when you are pregnant then maybe you shouldn't have children*

Swedish Partner 1

When anecdotes of practices in other countries were mentioned, it was not taken as evidence that prenatal alcohol use would appropriate or acceptable.

*You've heard that in USA and France and that it can be okay with a glass but it is really taboo in Sweden the way I see it that it is you don't drink when you are pregnant*

Swedish Partner 6

The cultural aspects, relating to differences in alcohol policy in Sweden and England, were also prominent as several women did not even want to go into a liquor store when they were pregnant. Swedish alcohol control policy states that alcohol over 3.5% ABV can only be sold in separate alcohol stores, leading women to feel that other people would presume they had gone in the store to buy alcohol for their own consumption. The perceived stigma was therefore not only related to drinking alcohol beverages in public, but to enter the liquor store with a visible pregnant abdomen.

A few English women described feeling uncomfortable consuming alcohol due to perceived judgement from others, yet the discussions around public opinions were more prominent among Swedish parents. One English woman, who continued to drink during pregnancy, felt that stigmatisation of drinking during pregnancy was related to social class and would be viewed differently depending on what socioeconomic grouping one belongs to and the environment of such groupings. This was also reflected in how English parents talked about acceptable (responsible) drinking when pregnant; most commonly the reference was made to wine. Previous research has suggested that certain drinks, such as

wine, are perceived as more acceptable during pregnancy (Ford, 2013) as wine drinking is perceived to be sophisticated and associated with a higher social class, which is then constructed as less problematic behaviour.

*I think there is sort of a taboo, depends on where you go to in terms of socioeconomic situation. Like if you went to like a working man's pub in a rough area you would probably see women sitting there smoking and drinking. Whereas the places where I am more likely to go would be more sort of middle class and people would be a bit more... looking down at you if you... certainly if you looked like you were drinking to a reasonable level*

English Woman 16

### 5.3.5 Perceptions of alcohol advice

**Table 21. Theme IV: Perceptions of alcohol advice**

Subtheme	Illustrative quote
<b>Main message</b>	<p><i>"We don't recommend that you drink at all, however if you do these are the limits that are advised"</i></p> <p>English Woman 10</p> <p><i>They probably just asked the question; "what is your view on this thing with alcohol" and then said that "no I am not going to drink anything", like why do they ask the question! And like "no, no that's good you shouldn't drink when you are pregnant"</i></p> <p>Swedish Woman 16</p>
<b>Comprehensiveness and effectiveness</b>	<p><i>I think there's not a huge amount given to you when you actually become pregnant and go to the midwife the only thing at the start was sort of the midwife saying how much you know how many units of alcohol do you drink a week normally or if do you drink anything now and that was sort of an in-the-air-question and it was never you know it was never touched on why it would be bad</i></p> <p>English Woman 5</p>
<b>Tailoring</b>	<p><i>I think that maybe if it had been more of an issue for me that they might have talked to me more</i></p> <p>English Woman 4</p>

There were distinct differences between the two countries in terms of advice given. All Swedish parents had been given the advice to abstain and that the best option was no alcohol at all. Among the English parents the advice however, the advice varied. Whilst



some parents had been recommended not to drink at all, several parents had been given the recommendation to only drink small amounts if they chose to drink. One partner described the advice as highly ambiguous, with the decision being left to the woman.

*I think generally they, because it's such a grey area they gave the grey. So they sort of said "there's more evidence to say not but it is advised not to, but a glass of wine is (...)" they didn't say definitively don't have a drop or definitely do. They sort of left it to our decision, so left it to (wife's name) to make that decision but I wasn't going to make that decision*

English Partner 1

While ambiguity was one aspect mentioned, which indicated a lack of clarity in the communication of the advice, conflicting advice was also mentioned by a few parents. In these occasions they had been given particular advice by one health professional, then different advice from another health professional. One woman, who had previously been discouraged to drink, was later advised to consume alcohol before giving birth.

*I was surprised that my midwife told me to not have any alcohol at all I probably went on google and saw what that [...] but it depends like with breastfeeding, because I'm breastfeeding and some people sort of say that you shouldn't be having any alcohol at all and some that you can have a bit of alcohol if you like and it's not really a big problem... and then there will be people in the middle [...] I probably found it that she didn't go into a lot of details but I imagine that the midwife just asked me a bit about what my alcohol habits were like and I sort of said that "oh I just have the odd you know odd half lager or the odd shandy" and she said "that was before you were pregnant, you're not drinking anything now?" and I said "no that's now" that's when she said that "you shouldn't be having anything now" [...] just a week before I went into labour my usual midwife was on holiday so I got a different lady and she sort of said "oh go home and have a curry and have a big glass of wine" and then I was thinking "what?! You can't tell me to have a glass of wine, because I have been told not to have any alcohol at all"*

English Woman 7

Confusion did not only relate to the practice of the midwife but also the official guidelines as well. One woman, who had two children and had been pregnant under former guidelines, expressed confusion relating to how the guidelines have changed over time.

*Well I think it seems to change every two minutes, really the essence of what I got when I had my first boy the advice that they gave was that you can have one or two units once or twice a week, and then when I was about 8 weeks pregnant they suddenly changed that to say you shouldn't have any alcohol at all in the first three months. And then this time around they said "oh you shouldn't really have any at all but if you do it is alright to have one or two units once or twice per week and said that again, but try not to sort of in the first three months". But didn't really get a great deal of information about it, it was literarily in passing that sort of what you should do*

English Woman 16

As has already been indicated, some parents noted that they had not been given in-depth information about alcohol and pregnancy. Some parents felt that because they only consumed low levels of alcohol pre-pregnancy, this led midwives to think drinking during pregnancy would not be an issue and did not need to be discussed; "I think it was like this that when she saw our (AUDIT screening) results and saw that "this couple doesn't drink that much" or "didn't drink much before pregnancy and this doesn't seem to be a problem" " (Swedish Woman 1).

*They talk you through like there's so much information so it's sort of like "you're not a risk factor" [...] I think if you say like "yeah I am alcohol dependent" or something they would be a lot more, because I was like "I don't drink or I drink once a month or whatever" they, I don't think they felt like they needed to pursue it with me*

English woman 14

*Then it wasn't much more about that, "yes we think it's bad" and "do you can contact us if there's something", like that. That was probably the feeling I got, it was not so much more than that. But I still think that there was a possibility for us to get information if you wanted, but we had already simply decided we didn't want to do it*

Swedish Partner 5

A few parents believed that their social class and level of education might have an impact on the amount of information they were given. One woman noted that in her first pregnancy she lived in a deprived area with high levels of teenage pregnancies. The midwife recommended her for to attend birth classes elsewhere, where she would have more in common with other expectant mothers; "I hate that sort of snobbery, like class snobbery but you know maybe it was a bit of that that she just thought that I wouldn't do anything" (English Woman 2). The assumption made by the midwife that she wouldn't drink appeared to be related to her higher level education as well as older age than many other women in the midwife's care.

Alcohol advice in Swedish maternity services was described as more structured. Most Swedish parents could recall filling out an AUDIT questionnaire, but this did not equate to more detailed information about the reasons for why alcohol should be avoided. One partner argued that; "They went through it with alcohol and nicotine that you should abstain from it when you are pregnant [...] but they never say like why, or what can happen" (Swedish Partner 3). Contrary to that statement, one Swedish woman felt that there was too much focus on alcohol despite her clear mind-set that she was not going to drink.

*Even though you said you didn't drink, yes before, I know that it was something you wouldn't do they still had to push the information on you and explain why it was so important. When it felt like it wasn't any concern [...] I think you got some leaflet and it said that about birth defects and that. And then that you had a foetus growing inside you. But I didn't really read that*

Swedish Woman 4

Among English parents, the fact that the discussion around alcohol had not been pursued further potentially was related to the fact that alcohol was not considered to be “a big thing”.

*They asked me you know what I was drinking, and I said the truth, and was it really. We didn't really move on from there. And from there I was handed a few leaflets. I can't remember it being a big thing, it wasn't really a big, I think it's so well publicised. It's not like, not like people don't know that they are not supposed to drink when you're pregnant*

English Woman 13

Some compared this to smoking, with one woman was perceiving this as being the main risk factor of focus; “Any leaflets or pamphlets were mainly arranged around smoking rather than drinking, it was a big push for not smoking during pregnancy rather than drinking” (English Woman 3).

A final consideration on the topic of health information was *how* to depict drinking during pregnancy. All parents were shown a variety of written health education material used in antenatal care (Appendix M) from different countries, through awareness campaigns or as promoted by FASD interest groups. One of the most discussed leaflets was an Italian awareness campaign called “Mama beve bimbo beve” (mom drinks baby drinks), featuring a foetus in a drinks glass. Some women found the picture repulsive and rather upsetting while others found that it got the message across that alcohol is harmful to the developing baby. An interesting observation was that although there were mixed opinions within the samples, only some of the English women questioned the accuracy of the image. They perceived the image to be misleading as they believed the placenta filters some of the alcohol and consequently the exposure to the foetus would not equal what the mother had consumed. Some parents believed that this would be a good approach to influence women to abstain from alcohol during pregnancy. Reasons given included the graphic nature of the image and because the image did not require the text to be read in order for the message to be understood.

## 5.4 Discussion

The aim of this study was to contrast the perceptions of alcohol use during pregnancy and alcohol advice in antenatal care among parents living in Merseyside and Örebro County. The findings from this study, which gives a greater insight into possible influences of behaviour change during pregnancy, can be used to inform policy and practice to prevent alcohol exposure, and support pregnant women to make informed decisions. The comparative approach also identified that social norms regarding alcohol use during pregnancy fits within a cultural context, which further highlights the need for clear information communicated in an appropriate manner.

One important aspect was the context in which women continued to drink. English women, who continued to drink, drank at special events such as at Christmas. Previous research which included pregnant women and new mothers showed that special occasions were considered exceptions when women felt it was acceptable to drink (Meurk et al., 2014). In addition, the current study also showed that narratives around drinking were related to socialising with friends, which may relate to a desire to retain self-identity in the many changes occurring during pregnancy. Bailey (1999) argued that while many women embrace the transition to motherhood, changes in lifestyle during pregnancy represent another way in which they were losing their self-identity. For many women this transition appears natural, where nine months of abstinence is not a problem (Meurk et al., 2014) and changing alcohol habits is viewed as part of preparing for parenthood (Skagerström, Häggström-Nordin & Allehagen, 2015). The current study has suggested that the changes women made in their drinking habits involved a re-definition and negotiation of their social role. Understanding the contexts in which women may drink is important in further designing health education and interventions to reduce or prevent alcohol use during pregnancy.

The notion that alcohol use during pregnancy can be harmful, and should be avoided, was mentioned by many parents as tacit knowledge that was not gained from health professionals. This knowledge was believed to exist in society amongst most people; however this argument was stronger amongst Swedish parents. This resonates with previous research from Sweden where a focus group study with 34 women (of fertile age) found strong agreements among women that pregnant women should abstain from alcohol (Skagerström, Häggström-Nordin & Allehagen, 2015). Among English parents in the

current study, there was a bigger emphasis overall on the ambiguity in the evidence around the risks of drinking small amounts. While the perception was that there is an element of common sense in avoiding alcohol, it was primarily noted that it is common sense to not drink heavily. This also seemed to influence some parents to use anecdotes and other women's experiences as a source of information, which affirmed perceptions that some drinking may be acceptable. Raymond et al. (2009) found that women found reassurance in anecdotal evidence from other women who had consumed alcohol during pregnancy without seeing any subsequent harm to the baby. There has also been unclear news reporting in British media, such as in *The Independent* which in 2012 stated that even small amounts of alcohol can harm the baby (Laurence, 2012), and then later in 2013 argued that moderate amounts will not harm the baby (Cooper, 2013). It is possible that there is less agreement among people in England on whether drinking in smaller quantities is a problem, based on such depiction within the media. Strong beliefs that alcohol is harmful to the baby, defined in the health belief model as 'perceived threat' (Sallis, Owen & Fisher, 2008), are likely to encourage women in Sweden to abstain due to their high perception of risk. The model stipulates that if women do not perceive the threat to be important (e.g. FAS is a risk that is only associated with high levels of drinking) and that the severity of the threat (FAS) is not related to own behaviour (drinking small or moderate amounts), the risk subsequently is not perceived as high and will not influence women to abstain especially if they also perceive benefits (e.g. relaxation or 'a treat') from drinking. The current study supports these constructs within the HBM, as some English women who chose to consume some alcohol argued that small amounts do not cause FAS. In contrast it was particularly clear that Swedish women perceived this threat as severe, as some would not even consume non-alcoholic beverages that contained very small amounts of alcohol.

There appeared to be less clarity or consensus in English healthcare on the main advice given to pregnant women and their partners. Swedish parents were clear that they were advised to completely abstain from alcohol, reflecting previous research that almost all pregnant women (85%) perceived that abstinence was the advice given in Swedish antenatal care (Nilsen et al., 2008). In contrast, figures from England have shown that only around a third of women were told to stop drinking completely (McAndrew et al., 2012). Qualitative research from England has also indicated perceptions of confusion and conflicting advice being presented in antenatal care (Raymond et al., 2009). However, this is also the case in countries that promote complete abstinence, such as the Netherlands and

Australia (Anderson et al., 2014b; Crawford-Williams et al., 2015b; 2015c; van der Wulp, Hoving & de Vries, 2013).

There is a great deal of focus on risks during pregnancy, and as such the pregnancy is highly medicalised (Rothman, 2014). However, few studies acknowledge that women may hold beliefs about benefits from drinking. Retaining self-identity may be viewed as a benefit, or reason, for women to drink. Raymond (2009) found that women also used alcohol as a way to cope with the stress of being pregnant which constituted a clear benefit for them. Furthermore, Loxton et al. (2013) found that women evaluated the risks with drinking in relation to the type of beverage they consumed, where beer or wine was considered safer than spirits. Similar opinions emerged in the current study where the narratives around “having a glass of wine” made it clear that there is something sophisticated with drinking, for example, wine which may influence women to perceive it as a ‘safe’ type of alcohol. Similar perceptions have also been found in a study in the general population (Little et al., 1981), where liquor is more commonly mentioned as harmful than beer or wine. Ford (2013) also argued that there is an association between type of drink and social class. In the current study English parents most commonly constructed drinking in terms of “a glass of wine”, sometimes specified as consumed with dinner. In contrast negative views were expressed regarding consuming beverages such as vodka or Blue Wkd. These distinctions, which appear to be rooted in perceptions of social class, are interesting in contrast to Swedish parents’ perceptions which suggested that all drinking was bad, without distinguishing between types of beverages.

Both abstainers and women who continued to use alcohol noted that if they consumed alcohol and there was something wrong with their child then there would always be a question about whether the harms were caused by the alcohol. Raymond (2009) noted that women who perceived the risks with drinking as high were more likely to abstain completely. Elek et al. (2013) also found that non-pregnant women who believed complete abstinence was the best choice were more likely to have a negative attitude towards any alcohol use during pregnancy. This was reflected in the current study as women who continued to drink acknowledged the ‘what if’ argument, but also argued that the small amounts they had consumed were not going to cause harm. A possible explanation for this reasoning may be that almost all parents attributed heavy drinking to risk of harm which reflects previous studies (Anderson et al., 2014b; Kesmodel & Schiøler Kesmodel, 2002; van der Wulp, Hoving & de Vries, 2013). It needs to be emphasised that the guidance

provided from NICE did at least to some extent influence the decision to drink for some English women in this study. One woman specifically described how she had intended to abstain, but changed her mind once she learned that small amounts could be consumed.

With the uncertainties around what the consequences of drinking during pregnancy are, in regards to small amounts, it is possible that women who continued to consume alcohol perceived the risk of harmful effects to the foetus as small, since they did not consume what they believed to be harmful amounts; in other words ‘heavy drinking’. In contrast, some Swedish women mentioned how they had felt apprehensive to drink or had even avoided drinking, for example, non-alcoholic wines that contained less than one percent alcohol. Lowe and Lee (2010) argued that the trend of moving towards recommending abstinence during pregnancy, as the British policy has since 2007 and emphasised even stronger in 2016, means that “policy makers have formalised a connection between uncertainty and danger” (p. 302). Related to the perception of risk in terms of quantity was the finding that several women who continued to consume alcohol described how they did not want to suffer from the effects of the alcohol. The association of alcohol harm and intoxication could be a modifying factor in terms of perceived susceptibility of negative consequences (‘if I can’t feel the alcohol my baby won’t feel the alcohol and the risk of harm is therefore low’). This could have resulted from an information gap, in that midwives had not described the process of transfer through the umbilical cord and the placenta. A few women were sceptical about leaflets that communicated that the baby ingests the same amount of alcohol as the mother, believing this to be false as the placenta filters the alcohol.

One particular focus of this study was the influence of partner drinking, in terms of alcohol consumption. Similar to previous research (Crawford-Williams et al., 2015b; van der Wulp, Hoving & de Vries, 2013) women in the current study perceived that they were not influenced by their partner’s drinking habits, although some women who drank noted that had their partner abstained or been a teetotal they would have been more likely to abstain themselves. Peadon et al. (2011) found that although women did not perceive their partner’s habits as important for their own behaviour, 38.3% said they would have been more likely to abstain if their partner had encouraged them to and 30.5% had abstained if their partner had stopped drinking alcohol as well. However, the study by Peadon and colleagues did not differentiate between heavy or light drinkers. Bakhireva et al. (2011) found that women whose partner was a heavier drinker were significantly more likely to



continue to drink during their pregnancy than women whose partner was a light drinker. The current study did not focus specifically on partners' level of drinking; however this may be an important focus for future research.

There were accounts from both women and partners that the partner's alcohol habits changed, regardless of whether the woman felt it had influenced her habits or not. One reason was that joint drinking habits changed once the woman got pregnant. Van der Wulp, Hoving and de Vries (2013) found that the feeling of losing their drinking companion was a reason for partners to cut down their own drinking. It is possible that partners were subconsciously preparing for their new social role as a father and the loss of the partner as a drinking partner had influenced their own consumption. However, women whose partner did not drink with them in the home did not necessarily change their habits as their drinking environment had not changed. The current study has not provided a convincing case that partners influence women's continued alcohol use during pregnancy. However, women who drink a considerable amount during pregnancy and whose partner was a heavy drinker may have been less likely to take part in the study. Women in the current study who continued to drink described their intake as small and occasional and partner's influence may be more of an issue in couples where one or two partners are drinking at high levels.

A major difference that emerged between the two countries was the consistency in alcohol screening in antenatal care. Among the English women there were varied experiences in how the question of alcohol was brought up; some had been asked about pre-pregnancy habits whereas others described it as more of a 'tick-box exercise' to get a yes or no answer as to whether they were currently drinking. Several studies have noted lack of consistency in advice about alcohol use during pregnancy, and that advice from health professionals does not always align with information found in other sources such as pregnancy books or the internet (Anderson et al., 2014b; Loxton et al., 2013; Raymond et al., 2009; van der Wulp, Hoving & de Vries, 2013). The experience among Swedish parents was however consistent in that they had filled out an AUDIT questionnaire to assess their drinking habits before pregnancy and discuss alcohol use during pregnancy. A Swedish study including 1,108 midwives surveyed in 2009, showed that 98% used a questionnaire to detect risky drinking among pregnant women. This was significantly higher than among midwives surveyed in 2006 (n=974), when 35% reported using a questionnaire ( $p \leq .001$ ). When asked to specify what questionnaire they used, all

midwives reported using AUDIT (Skagerström et al., 2012). The practices of midwives in the two countries is further described and discussed in Chapter 6.

A common theme in both samples was that the midwife did not pursue the topic of alcohol much further beyond the initial question asked. Women therefore perceived that since they were not at risk there was no need for more information. However, most parents also said they believed it would be beneficial if midwives did provide such information, where the preferred medium of communication was verbal information as there was an element of ‘information overload’ of written material from the midwife in regards to other health information. Previous research has suggested that women perceive that appearing a certain way influence how much and what kind of advice they receive. Edvardsson et al. (2011) showed that men and women who attended antenatal care felt that if they came across as healthy, the midwife would not provide further health-related information or advice.

Specifically related to alcohol, Jones et al. (2011) interviewed both pregnant women and midwives and found that women felt that alcohol had not been discussed beyond the initial screening questions at the booking-in appointment. Midwives said they would refer women to substance misuse services if they were concerned about misuse, however it seemed information was limited or absent unless a woman’s drinking was deemed as problematic. Similarly, Anderson et al. (2014b) found that the reason women believed they had been given limited or no information about alcohol was that they “looked” as if alcohol would not be a problem for them during pregnancy. Considering that parents in the current study were open to receiving more information about the risks with drinking, and that some described getting advice from family, friends, and media and were aware that the advice is different in other countries, antenatal care needs to be seen as an important arena to provide a clear message about the official recommendations. Furthermore, parents believed that health professionals are in the best position to advise on alcohol as they were perceived as a reliable source of information, which has been confirmed in previous research (Anderson et al., 2014b; Jones et al., 2011; Kesmodel & Schiøler Kesmodel, 2002; van der Wulp, Hoving & de Vries, 2013).

The current study showed divided opinions on whether a woman has the right to autonomy or if the developing foetus has precedence to the woman’s right to decide. Some parents felt that both aspects were important; while arguing that the foetus has a right to not be

exposed to alcohol they also expressed that women need to make their own choices. Whereas, Raymond et al. (2009) found that women believed they are responsible for their own health during pregnancy and that advice in health care will enable them to do so, the current study found that a lot of the opinions about the foetus' prevailing rights were related to perceptions of a societal attitude towards the welfare of the baby. Among Swedish parents, the focus on the foetus was much more prominent than in England, where parents tended to emphasise the woman's right to autonomy even when they expressed concerns for the baby's health. This is an interesting finding which may be rooted in deeper cultural differences in how women's drinking is viewed. Roumelitotis and Törrönen (2012) explored media coverage of women's drinking over a 60-year period in Swedish media. They found that drinking during pregnancy was described as a collective, societal issue in the 1970s whereas in media coverage in 2004 emphasised that the "problem was expected to be handled by a responsible female consumer with the aid of available information" (p. 466). Although media coverage does not necessarily reflect public perceptions, it may explain why many Swedish parents held these views. Several Swedish parents also expressed the belief that if a woman continues to drink during pregnancy it must be because she has a drinking problem or lack of knowledge about the risks with drinking. As previously discussed, English parents distinguished between patterns of drinking and some acknowledged that if women drink in moderation then their drinking can be regarded as responsible. This highlights a clear disparity between the countries, as all drinking was regarded as problematic in Sweden, compared to England where it was discussed on a spectrum.

The strong opinions against prenatal alcohol use tie in with theories of de-normalisation of behaviours that are viewed as unhealthy or even dangerous. De-normalisation policies have been discussed mainly within the context of tobacco, where policy measures such as restricted use in public places is likely to have had some impact on prevalence of smoking (Bell et al., 2010). In the case of alcohol and pregnancy, Sweden's traditionally restrictive alcohol policy and long endorsement of a complete abstinence policy for pregnant women may have worked to de-normalise alcohol use during pregnancy, leading to the sense of stigma attached to it. This is interesting from a public health perspective, as Bayer (2008) argued that when an (undesired) behaviour is less prevalent, people who engage with it are more likely to be marginalised. It is important to highlight, particularly in the light of lack of evidence for harm at low levels, that good intentions with abstinence policy may indeed lead to further stigma of women who drink (Broom, 2008). Even though limited evidence

of potential unintended consequences suggest that few women may seek abortions because of alcohol use due to concerns (O’Leary, 2012), informing women about the risks with drinking needs to be balanced against the potential upset it can cause. A further issue with de-normalisation and subsequent stigmatisation is that it can discourage discussing the issue with health professionals, which has been evident with smokers (Bell et al., 2010). Perception of risk and stigma has also been shown to influence, for example, late access to antenatal care among women who use drugs, due to concerns about judgement from health professionals (Stengel, 2014). As Swedish parents in the current study expressed strong social norms against drinking during pregnancy, women may be less likely to be honest about their drinking. Such ethical aspects should be considered amongst health professionals when discussing current drinking with pregnant women. The issue with identifying women who consume alcohol during pregnancy and encourage women to discuss their drinking habits will be explored further in Chapter 6.

As previously mentioned, continued alcohol use may have perceived benefits, which is based on the fact that alcohol has a social value in the society. Room (2005) argued that there are positive values associated with using psychoactive substances which “[...] demarcate the boundaries of inclusion and exclusion in a social grouping” (p.144). While alcohol is well-integrated in society and in social contexts for non-pregnant women, pregnancy constitutes a context where any alcohol use according to Room is stigmatised and may be viewed as morally wrong by others. The perceived stigma associated with drinking during pregnancy was framed in three ways in the current study: i) family and friends’ acceptance versus negative attitudes, ii) perceived societal attitude, and iii) structural barriers. Firstly, women who consumed alcohol often described an accepting attitude among family or friends who may have been doing the same during their pregnancies. Equally, women who abstained often, but not exclusively, described support from family and friends who shared the same views. It appeared that English parents who had family or friends who consumed alcohol during pregnancy, even if the couple chose not to, had a more liberal attitude to alcohol consumption. Despite their own perception of abstaining, they did not want to judge others who did. Secondly, the perceived social attitude was mentioned by several parents, some English women who continued to drink described feeling discouraged to have a drink at times due to the potential risk of being judged by others (Meurk et al., 2014). Finally, an interesting finding was that several Swedish women reported that they would not enter a liquor store when pregnant, in fear that people would think they were purchasing alcohol for their own consumption. The

inherent difference in access to alcohol, based on the Swedish retail monopoly system (Norström & Ramstedt, 2006), is interesting and this limited access may in fact discourage women from drinking. This may relate to the reoccurring narrative among Swedish parents that “everyone knows that drinking is bad”, which is supported in previous research (Jones et al., 2011). For example, seeing a pregnant woman drinking in a pub would therefore trigger negative emotions because parents suggested that it “looks wrong”. The overall policy environment may therefore contribute to attitudes towards pregnant women, as no English parents mentioned particular views on women purchasing alcohol in off-licenses or purchasing alcohol in supermarkets.

Considering the different experiences in the two countries concerning the messages within antenatal care, it is also worth considering the use of written health education material. As presented in 5.3.4, parents in the two countries reacted slightly different to the variety of examples they were provided within the interview (Appendix M). While some expressed liking of the strong image featuring a foetus in a drinks glass (“Mama Beve Bimbo Beve”), others expressed scepticism towards the accuracy of such imagery and perceived it as inappropriate. Hastings, Stead and Webb (2004) argued that while the evidence in laboratory based research on the effect of threat appeal on behaviour has shown a linear relationship with increased threat, the natural environment of exposure to social marketing includes factors that are not controlled for in a laboratory setting. This includes that self-reported behaviour does not equal actual behaviour and perception that fear appeal works for “others”. Furthermore, long-term exposure can create negative perception of the organisation conveying the message. One particularly important aspect is exposure to upsetting images to people who do not want to see them, and in the case of pregnancy the image displayed in the Italian campaign may, for example, appear upsetting to women who have had a miscarriage or a terminated pregnancy. An evaluation of the Italian campaign, including parents attending vaccination clinics with children aged 0–2 years (N=690), found that whilst 40% of parents expressed liking the approach of the campaign, 38% reported feeling distressed (Bazzo et al., 2012). Hastings and colleagues also noted that when the message reaches people not in the target group, it might contribute to increased stigma around the issue (Hastings, Stead & Webb, 2004). It has been argued that because of the potential for stigmatising particular groups through the framing of public health communication, ethical perspectives ought to be considered before implementing them (Guttman & Salmon, 2004). Furthermore, Lupton (2015) argued that using shocking imagery, or a “disgust” approach, may only reinforce perceptions of behaviour among

people who are already in marginalised segments of the population. Whilst the framing or content of alcohol information leaflets in different countries was not the main objective with this study, the findings around difference in perceptions and attitudes inform such research by emphasising the importance of being attentive to how the same message may be interpreted differently in different countries. Further discussion on this will be provided in Chapter 6.

Recent research exploring the perception of messages about drinking during pregnancy has revealed that a threat appeal alongside with focus on self-efficacy to modify drinking habits may be effective without having negative consequences. The majority of the study sample were non-pregnant women and despite showing promising results on women's perceptions and intentions to abstain or reduce their alcohol intake if they got pregnant (France et al., 2014), the real-life application of such an approach is debatable (Hastings, Stead & Webb, 2004). However, the study did not include graphic images, as used in the current study, so the two are not comparable in the strength of their threat appeal. France and colleagues however concluded that;

*If an honest and factual message is delivered by an expert and supportive source, along with an acknowledgement of the uncertainty surrounding risk to the fetus following low to moderate alcohol exposure in utero, then the message is likely to be persuasive as well as minimise counter-argument*

(France et al., 2014, p. 11)

This approach was also supported by parents in the current study, who acknowledged that the message needs to be clear and come from a credible source, which they believed to be antenatal care. These perceptions will be discussed and contrasted against the experiences of midwives in Chapter 6. Parents suggested that more information about the risks with drinking during pregnancy would be beneficial for expectant couples, in order to make informed decisions. Both women who consumed alcohol during pregnancy and women who abstained suggested that "other people" would benefit from information about the risks with drinking. It was however evident that they did not regard themselves in need of that information. Parents did not believe that leaflets were the best way of delivering the information but rather emphasised that verbal information from the midwife was the most effective mode of delivering the message. One reason they discouraged putting too much

emphasis on written information was that there is an element of ‘information overload’ (Anderson et al., 2014b; Loxton et al., 2013) limiting the attention paid to specific alcohol leaflets. It has been suggested that health professionals should not rely on written material to achieve desired behaviour change (Calabro, Taylor & Kapadia, 1996). This was supported by parents, who emphasised that contact with the midwife as well as verbal information were essential components to ensure the information is both delivered and received appropriately.

The overall perception of the written health education material was varied but most parents wanted factual information they could relate to. Information about how many units certain drinks contain was mentioned as beneficial by some English parents, especially in light of the NICE guidelines to ensure that women who chose to drink did not exceed the given limits. Others however felt that providing information about units may make women drink too much. Furthermore, some parents believed that including images were important to highlight what the leaflet was about, with no visual representation of alcohol in them meant that it could end up with other pregnancy leaflets, because they “all sound the same”. In summary, using visual aids in the interviews allowed parents to express how they preferred the information to be delivered by contrasting different approaches against each other. In antenatal care, verbal and written information were valued as important, but many parents felt more detailed information about risks is needed and that antenatal care is the best arena in which to deliver health promotion messages.

#### ***5.4.1 Limitations***

The study has several limitations that need to be acknowledged. The recruitment strategy resulted in a fairly homogenous sample with women who were well educated. English women were slightly older than the average age of first-time mothers in England (31.7 and 28.3 years, respectively) (Office for National Statistics, 2013), whereas Swedish first-time mothers were of similar age to the national average (29.7 versus 29.01) (Statistics Sweden, 2016). The findings in this sample are however relevant in conjunction with national statistics on alcohol use during pregnancy, as the 2010 IFS showed that the prevalence of any alcohol consumption during pregnancy was highest in the age groups 30-34 years (47%) and  $\geq 35$  years (52%). The IFS indicated that 7% of women consumed more than two units per week, but does not present amount according to age (McAndrew et al., 2012). In contrast, risky drinking among pregnant women in Sweden ( $>6$  points on AUDIT) in 2013 was 8% among women aged 17-29, compared to 4.7% among women over 30 years

of age. Due to the age of the sample it is therefore possible that women who drink at higher levels, who may be of younger age, were underrepresented.

Most pregnancies were planned and there may be other issues related to unplanned pregnancies that influence women's decision to abstain or continue drinking. Furthermore, social desirability and recall bias are always a potential issue with social research (Green & Thorogood, 2014) and it is possible that women chose not to report that they did drink alcohol due to perceived stigma associated with drinking, particularly in Sweden where social norms appear to discourage such behaviour. While the interview schedule included questions around participant's own habits they were discussed within context of also asking what they thought of other people's drinking. Furthermore, as the purpose was not to establish exact consumption levels, participants were asked to estimate their consumption in their own words about frequency and quantity unless it was too vague and they were encouraged to give a measure of estimate. Finally, the homogeneity of the sample may have contributed to saturation of data at an earlier stage than if the sample had been more diverse. Towards the end of the recruitment, specific services that focused on younger parents were approached in an attempt to recruit parents with different experiences. However, only one woman came through following contact with these services.

## **5.5 Conclusions**

The results from this study indicated that pregnancy is a teachable moment for many women to change their alcohol habits, but that a range of factors influence whether women abstain. Constructs HBM were evident; risk perception was a strong theme that appears to have an impact on attitudes and behaviour. Perception of risks with drinking alcohol during pregnancy appeared high among Swedish parents, whereas English parents were unsure that consuming small to moderate amounts was indeed harmful. For women who continued to drink whilst pregnant, drinking was part of social events or special occasions. Perceived benefits of consuming alcohol in such contexts may have mediated thoughts about risks. The study also found that partner drinking does not necessarily determine whether a woman ceases or continues to drink but may be an important source of support. Partners may change their drinking habits, more often as a result of losing their drinking companion. Parents appeared susceptible to receiving information about the risks of drinking during pregnancy and value midwives as a source for such information. However,



women access information from a variety of other sources, and in the English sample it was evident that conflicting advice was provided from different sources, reflecting the variation in official recommendations from health authorities at the policy level at the time of the study (see 2.6.2). The consensus among Swedish parents was that the message in antenatal care was complete abstinence. Meanwhile, no consistent message was evident across the English narratives; some midwives advocated abstinence while others just emphasised that heavy drinking was a risk to the baby and should be avoided. Antenatal care was considered to be the best arena to provide such information and Chapter 6 will explore the perceptions of midwives on providing that information.

### **Box 3. Key findings from Chapter 5**

- There is a lack of comparative studies exploring underpinning reasons why women may abstain or continue to drink during pregnancy
- This study aimed to explore the perceptions of alcohol use during pregnancy and alcohol advice in antenatal care among parents living in England and Sweden
- The narratives among Swedish parents focused on the rights of the foetus, whereas English parents also highlighted the importance of autonomy of the pregnant woman. Risk was interpreted at present at any level of drinking by Swedish parents, whereas the majority of English parents argued that small amounts may not harm the developing baby.
- Partner drinking did not directly influence women's decision about abstaining or consuming alcohol, however many partners adjusted when or what they drank which at times was a way to support the woman.
- Wider social norms appear to influence the views around drinking alcohol during pregnancy in England and Sweden. Future health promotion campaigns and health professionals should take this into consideration when developing preventive interventions.

# **Chapter 6: How do midwives address and prevent alcohol use during pregnancy?**

## **6.1 Introduction**

The focus of this study was to further explore the aspects of guidance around drinking during pregnancy, from the views of health professionals. It has been suggested that midwives have an important role in health promotion (Beldon & Crozier, 2005). For that reason, midwives are, in theory, well placed for screening and BI, but there is limited evidence as to what extent midwives are involved in these activities (Watson et al., 2010). In this chapter I present the findings from interviews with 16 midwives working in the two study locations. The overall aim was to explore their experiences of alcohol prevention and their perceptions around guidance on alcohol during pregnancy. The findings in Study I indicated that advice from midwives in antenatal care may be associated with continued use of alcohol during pregnancy, however Study II further suggested that there are other factors which play a part in women's choices around drinking and how social norms differ between England and Sweden. In the next section I present the findings (see 3.5.2 for methods) and the chapter concludes with a discussion on the findings in relation to the existing literature and implications for policy and practice.

## **6.2 Aims and objectives**

The aim of this study was to explore midwives' experiences of working with prevention of alcohol use during pregnancy in antenatal care and their perceptions of national guidelines and available resources for prevention, and addressed 4–5 of the overall research questions (see 3.2). The specific objectives were to:

- Investigate midwives' perceptions of alcohol use among pregnant women;
- Explore how midwives approach the subject of alcohol use with pregnant women in antenatal care;
- Examine the extent to which midwives include the pregnant woman's partner in the discussions around alcohol;
- Explore midwives' attitudes towards national guidelines on alcohol use during pregnancy; and
- Contrast similarities and differences of alcohol prevention between English and Swedish antenatal care.

## 6.3 Results

Nine Swedish midwives and seven English midwives participated in the study (see table 6 in section 3.5.2). The mean age of midwives in both locations was 48 years, however midwives in Sweden had on average slightly more years of experience than English midwives (16.6 and 14.1 years, respectively). All Swedish midwives were based at GP surgeries across Örebro County. Five midwives worked in the city of Örebro (population ~140,000 people) and four worked in rural areas (population less than 10,000 people). Among the English midwives, four were community midwives while the remaining three worked in specialised areas (obesity, alcohol and drugs, and teenage pregnancies). All midwives worked in the Liverpool city area. The interviews focused on midwives' practices around alcohol prevention and their views on drinking guidelines. Four themes emerged from the data; i) pregnant women's lifestyle, ii) the role midwives have as professionals, iii) how to promote healthy lifestyle to pregnant women, and iv) practical aspects of prevention of alcohol use during pregnancy in antenatal care. In the next sections I will present the findings from each of these themes.

### 6.3.1 Pregnant women's lifestyle

**Table 22. Theme I: Pregnant women's lifestyle**

Subtheme	Illustrative quote
<b>Pregnant women's alcohol habits</b>	<i>Most of them will say they have stopped drinking</i> English midwife 7
<b>Partners' attitude</b>	<i>That it (drinking) decreases. Not that they abstain completely but that it decreases. That's probably my general (view)</i> Swedish midwife7

I wanted to get a sense of midwives' perception of how common it is that women continue to drink, based on the statistics, which indicates that around 40% of English women (McAndrew et al., 2012) and 6% of Swedish women continue to drink (Skagerström et al., 2013). However, in both countries midwives noted that alcohol use during pregnancy was very unusual. The general experience was that women would say they had ceased drinking when they found out about the pregnancy.

*Most of them, what they tell me, so the area that I cover in Liverpool is quite an affluent area, quite a professional area, it doesn't mean that they can't do it they can probably afford alcohol more than in other areas of Liverpool but most of them will say that they have stopped drinking*

English midwife 7

*My general view is probably that, I perceive that they are pretty few, in relation to how many who drink alcohol before they get pregnant so to speak. Most of them manage to quit. Then it has to, then I think there is some underlying reason to why you continue to drink. I think so. But we know so little about the women we have in front of us*

Swedish midwife 4

The extract above from the English midwife introduced the idea of social class, where she noted that her area was rather affluent and the fact that women there could afford alcohol meant that they could drink if they wanted to. These views are important, as previous research has suggested attributes such as age or religion influence whether midwives address alcohol or drug use with the woman (Phillips et al., 2007). In contrast to parents' perceptions that their appearance in relation to education or social class meant midwives would not address alcohol, midwives did not appear to make any judgments of that kind. In general, midwives noted that most women drink, and many at high levels, before they get pregnant. This led them to express some level of surprise by the fact that so few women drink during pregnancy (see further 6.3.4). Many of the Swedish women talked about the pre-pregnancy drinking levels (see Chapter 5), and here an interesting contrast emerged between the countries. As maternity services in Sweden introduced screening using the AUDIT tool under the national 'Risk Drinking Project' (Nilsen, Wåhlin & Heather, 2011), many midwives used this tool and commented on drinking before pregnancy. Again, it was clear that despite high AUDIT scores women did not continue to drink after pregnancy recognition.

*What is interesting is that it happens that you have high AUDIT but you are very clear on no alcohol during pregnancy. I have probably experienced maybe two occasions where they were clear with that they had drunk alcohol during pregnancy*

Swedish midwife 7

The consensus among all midwives, even those with many years of experience, was that it was very uncommon that pregnant women continued to drink. In relation to their perceived low levels of reported drinking among the women they meet, midwives reflected on whether there is an issue with women not being honest about their alcohol consumption.

*I don't think we can quantify that because I don't know about the honesty [pause] of the women. If you take people on their face value and what they say what is happening I think the majority of women do stop drinking during their pregnancy. I honestly think that they do*

English midwife 1

There is almost a contradiction in this statement as the midwife says she does think that women stop drinking, but at the same time women may not be completely honest. Another English midwife noted that she believed that there was a difference in level of honesty depending on the stage of the pregnancy.

*It's very hard to get that message across really and I am not sure how honest women are when you interview them about alcohol during pregnancy. I think at booking they are quite truthful, but later during pregnancy they may not be as truthful*

English midwife 4

The argument about honesty developed later in the interview among some of the English midwives, where they would initially state that drinking was uncommon but later on discuss that some women may continue to drink. The question of honesty was not discussed with this sort of scepticism among Swedish midwives. This may relate to the difference in drinking guidelines, as one midwife in England specifically mentioned that because of the changes in guidelines over time, inaccurate and confusing information about safe limits of drinking were communicated to women.

*I would say that in my general opinion that most women have a little of alcohol during pregnancy partially because the information that we give them is very, you know misinformation really, the guidelines have changed and every year we seem to be giving them different information about alcohol what's safe and what's not safe so I think it's really confused as a professional to be honest*

English midwife 4

Because midwives argued that drinking was very uncommon, I was also interested to know whether they had come across babies with FAS, but midwives in both countries struggled to recall if they had indeed had a woman in their care who had delivered a baby with FAS. One Swedish midwife talked about her experience from working at the delivery ward, where she recalled having seen several babies affected by the mother's smoking during pregnancy. However, she noted that she had not seen any babies affected by alcohol.

Attitudes around pregnant women's drinking were not widely discussed, as most midwives had already noted that the majority of women give up alcohol. One midwife however associated higher social class with continued drinking. This was drawn upon her own experience as she said; "I have spoken to ladies who are general directors and they say that they really long for that glass of wine and they're not gonna stop or that gin and tonic [...] it's a form of relaxation for them (English Midwife 5). While the extract from the English midwife suggests that she acknowledged this potential social class perspective by specifying women who were 'general directors; and 'gin and tonic', Swedish midwives rarely came across women who felt comfortable with drinking. One Swedish midwife described how she had been involved in a discussion with a woman from a different country, who was temporarily living in Sweden. The midwives' experiences was that women continued to drink during pregnancy, which was influenced by the culture in that country. The midwife described this as an interesting learning point, and while the woman had seemed adamant that continued drinking was not a problem, the midwife had tried to explain why this was not a good idea.

As shown in Chapter 5, the social environment of women was seen as a potential challenge for abstaining from alcohol. Midwives noted that a woman's social life may not change just because she is pregnant and some were concerned that these situations could be a temptation for women to drink. Here, one midwife noted that special events, rather than

regular drinking, could be difficult for pregnant women. Interestingly, some parents in Study II argued that nine months is a short time in which giving up alcohol should not be difficult. In contrast, midwives described nine months as a long time and may therefore be challenging for women.

*Nine months is a long time and you think if you go to a wedding or you go to if there is a birthday, it's something that you would normally do, because if you know, you might go to a wedding and have a drink, you go to a birthday party and have a drink and I suppose it's challenging for women, not drinking in the week, or over the weekend or whatever it's probably not that difficult*

English midwife 6

*So maybe just not drinking on a day-to-day, or a week-to-week basis but drinking a big night when there might be drink, so certain times like the one off*

English midwife 7

This observation was explicitly addressed by one Swedish midwife, who told me that she would be attentive to special occasions that may come up during the pregnancy. She would notify women that there were many non-alcoholic wines or ciders at the liquor store, to make them aware that there were alternatives to alcohol but a way to still enjoy the occasion and feel included. Overall, strategies like that were not discussed among other midwives, which perhaps reflected the belief that most women abstain anyway.

One of the specific aims of this research was to further explore the role of the pregnant woman's partner. I therefore asked midwives about their views on partners' attitudes and behaviour during pregnancy. One Swedish midwife noted that more focus could be put on the partner as a potential influence; "The dad, because that can be raised a lot more I think, yes actually. And it might be where it fails a lot of the time that it's him who is pressuring" (Swedish Midwife 8)". However, the overall consensus was that partners of pregnant women expect them to abstain from alcohol; however they themselves were unlikely to alter their own habits. Some midwives perceived it to be difficult to engage with partners as they often were determined to continue with their lifestyle as before pregnancy.

*I have partners come in who talk about drinking, they'll say you know if they were concerned about something and I would reassure them, and they might say "oh good I can go out tonight then" you know "go out with the lads and get drunk" or something because that's what they've been planning on doing. You don't get the impression that they have given it up*

English midwife 6

*They're never gonna stop smoking, they're never gonna stop drinking, they're not gonna stop taking drugs. But women are in a really hard position living in that, living that lifestyle with perhaps partners who was doing the opposite of what we want them to do*

English midwife 4

Partners were seen as a source of either positive or negative influence, and one English midwife described her view that many partners believe that the responsibility is mainly on the woman throughout pregnancy; "Oh god yes, I mean he's done his bit, that's what he thinks, you know he's a sperm donor [...] he can carry on as before, but she's expected to do all the alterations" (English Midwife 5). As a result, midwives in both countries felt that it was hard to engage with partners.

### 6.3.2 "It's my job to talk about alcohol"

**Table 23. Theme II: The midwifery role**

Subtheme	Illustrative quote
<b>Empathy and midwife-patient relationship</b>	<i>You want to establish a good contact with (them), so that they can come and talk to you if there is something specific and that is hard if you have, yeah, stepped over the line so to speak</i> Swedish midwife 1
<b>Own views</b>	<i>You can inform them and say you know, but in the back of your mind you go "one's not gonna kill ya" but I prefer to say no, no drinking</i> English midwife 5
<b>Role as a health professional</b>	<i>I see it as our task as midwives to inform, about what the risks are but it's not task to treat where there is a need for it. Where there is abuse I am happy to hand over to those who know</i> Swedish midwife 6



Promoting healthy lifestyle during pregnancy was seen as an important role for midwives. However, this had to be done in a way that was sensitive to women and did not cause stress or seem judgemental. Showing empathy and building relationships throughout the pregnancy was seen as important and the first appointment was essential to build trust from the start. Midwives wanted to make sure that women came to them if they had any worries or concerns. One English midwife, who had a lot of experience of working specifically with women with substance misuse problems, stressed that regardless of women's lifestyle she felt that her role was to be supportive.

*I think that my job is to support, I don't really care how bad they are [laughing] because I want them to come back to me for midwifery care so, you know I am not going to give them a hard time because it doesn't work [...] you can't actually stop them from drinking or wanting to drink or wanting to smoke so it's a difficult one really. I think for me it's about not giving women a hard time, because I really I think the care and contact with the midwife is much more important than anything else. And that's the most important and that's my approach, that's the most important thing for me really for the ones who come to the clinic and engage with services*

English midwife 4

While prenatal alcohol use was seen as uncommon, it was acknowledged by a few that there may be specific situations where women may drink to deal with personal tragedies or stress, where one midwife gave a specific example where she would understand why women may cope by drinking alcohol. This extract indicated that promoting an ideal lifestyle of abstinence also needs to be balanced with empathy.

*You know someone who's had a bereavement or something, this is like hypothetical, but if someone's had a bereavement and would say "I feel really bad" and you know "I drank a bottle of wine because I couldn't think about what to do" then obviously you would be more empathetic about it*

English midwife 6

There was also some discussion about the limitations of their influence on women's decisions to drink. While some midwives acknowledged that the decision is ultimately the woman's, they have a responsibility to inform and ensure that women know what the risks are.

*Very few say that yeah "no but it's not dangerous and I have made my mind up about it", then it's more like a dead end. What you can do is to say "do you know what happens when you drink, how it affects your foetus?". But I mean after that I can't do more, it's the woman's decision. So you have to accept that as well. It's essential to have a good relationship with her, as well. I am not the police [pause] but that she knows what can happen, that is my responsibility*

Swedish midwife 3

In relation to the care of pregnant women, a theme emerged around tailoring the information, advice, and support to the individual. This meant midwives had to be attentive to the woman's situation and be sensitive to triggers that suggested she may need further information about alcohol.

*The most important thing is to be extremely responsive. Extremely responsive and like adapt. "What is this woman perceptive to?". I think that's my most important role. "What can I say and what is not as appropriate?", yeah. What should I say and I need to get her on-board to understand what I am saying but I don't want her against me. I can't be, so I am thinking it's not one information to everyone. But it's extremely adapted to who I have in front of me. Or the couple*

Swedish midwife 4

Despite the rare occasion that a woman reported intentional alcohol use during pregnancy, drinking before pregnancy recognition was a common issue discussed. This was once again a situation in which midwives emphasised that the relationship with women was important, to ease women's worry about harm they may have caused to the baby.

*There are women who may have drunk before they realised they were pregnant and feel very guilty about that and that's a time when I would try ease that guilt. If you don't know that you're pregnant how can you abstain?*

English midwife 6

*Should they be worried for nine months because they drank in the beginning of the pregnancy? And they can't rewind that, they can't change it. The only thing they can do now is to not drink, anymore. So that's the advice that I would give. But "it's happened, like let it go and move on because we don't know if it's caused something" like we don't know if it's caused any damage at all.*

Swedish midwife 1

This situation presented a dilemma for midwives, as they wanted to relieve any worry but noted that it was not possible for them to promise that no harm had been caused by drinking before knowing; "I never say that it's not dangerous. I don't think I have ever said that, but you are very tempted. Because you want to do good" (Swedish midwife 7). Two Swedish midwives specifically mentioned having access to the Timeline Follow Back (TLFB) tool, which is a way to retrospectively measure alcohol for a specific time period, to assess whether the woman had indeed been pregnant when she consumed alcohol. However, while it could be helpful to use TLFB tool which could indicate that the woman had actually not been pregnant when she drank, it could also have the opposite effect; "*So that can also be reassuring, but it can also be the other way [nervous laughter] that "you were actually pregnant" and it might create more worry*" (Swedish midwife 1). No English midwives mentioned the TLFB, however one specifically mentioned that it would be beneficial to have more information on how to support women.

*I would really like to know what advice could be giving to somebody say who've done it for about eight weeks. And maybe heavily. So I don't know what the implications of that are. So I should be able to give her that advice you know what we do*

English midwife 1

Midwives also talked about their role as a health professional and whether or not they should “tell women what to do”. In both countries midwives believed that it was indeed their job to inform about health behaviours that are harmful to the baby. A common theme was, therefore, the ethos of midwives to communicate information about what is good or bad for women’s health.

*I have no problem talking about any of them things, because I feel that I am a midwife and I am a health professional and actually that’s what I’m supposed to do. And I am predominantly the first health professional that they see*

English midwife 2

*It was the same with smoking in the beginning that you thought that it was too much of a personal question it was probably, people could do whatever they wanted. But today I see it was from the healthcare we have to say how it is. Because that’s our profession. Then they have their own choice, so I think that has changed. That the professions maybe should, of course a health worker should say that this is how it is*

Swedish midwife 8

Even though midwives indicated that it may seem that asking about alcohol could be a personal question, it was clear they believed it was their role. I therefore also asked how they felt about asking these questions, in terms of confidence and also in relation to other lifestyle-related behaviours. Some midwives indicated that it had taken them some time to develop a strategy of how to ask, but all felt confident in bringing it up.

*I feel absolutely fine about it. Because it, it’s not healthy for them to be drinking during pregnancy and it’s not that it’s not okay for them to drink but it’s not okay for the foetus that they drink, so I feel very confident about it to give a talk about the potential harms*

English midwife 7

### 6.3.3 How did midwives approach alcohol in antenatal care?

**Table 24. Theme III: Antenatal care practices**

Subtheme	Illustrative quote
<b>Confidence</b>	<i>I'll talk about anything. You know literally, and you know I will give them, you know I don't mind saying how bad it can be</i> English midwife 1
<b>Practice of assessment</b>	<i>There's a section in the booking in about smoking and we ask about alcohol so I say that "do you drink alcohol" and they say "no not now". So I say "well when you weren't pregnant what did you drink" and then try to compare, and then if they say that they've drank then I go into the usual you know "you should think about, you know you shouldn't be doing that"</i> English midwife 5
<b>Resources for practice</b>	<i>So I think that there, I think it's been great. In my own, yes my own to educate myself in this. Since we have also been offered and I have done motivating MI conversations, yes so I also think that's great to use in these types of conversations. So I think we have had good education</i> Swedish midwife 7

One central theme, and of main interest for the study, was how midwives work with alcohol prevention. With regards to assessment of women's alcohol habits it became clear that midwives in the two countries worked in different ways. While English midwives used a short assessment with a few questions on pre-pregnancy alcohol consumption, the Swedish midwives were using the AUDIT screening questionnaire to assess for drinking habits before pregnancy. Some of the English midwives expressed their concern about the method they used and its ability to capture women's alcohol consumption.

*I just ask them "have you drank, are you drinking at the moment" and most of them will say "no" or "I have stopped", so "okay you've stopped so what did you drink before" "if you're not drinking, did you drink before and how much was that? How many units of alcohol". And I tell them, so how many units of alcohol, and then I tell them you know a glass of wine is this many units of alcohol and they are like "what's a unit" because people are, that's what people are most unsure about what's a unit [...] But it's a section on the booking that you have to see anyway so that's when you discuss alcohol. You know "are they drinking, are they aware?", so I always fill that out in the form*

English midwife 5

*I would imagine that I go into quite a lot of detail when I speak to people but I know some midwives won't, they will just bypass that question. Assuming that. But they have to ask something but they will just say "have you stopped drinking since you've been pregnant?" "yes" "right okay, what did you drink before" and that's the end of the conversation*

English midwife 1

*If you ask a yes or no question, I don't think we know because we don't ask the question I don't know if that happens. So part of my big concern is that we don't integrate that within the notes, the antenatal notes the prompt. You know we are never gonna get passed that are we, some midwives may ask [...] but it will be very random. And I think we should be asking every single time*

English midwife 4

There were two important issues highlighted by English midwives; ensuring that the question of alcohol is consistently asked and that other midwives might not explore the question in-depth. In contrast, there was a consistent description among Swedish midwives of using AUDIT for pre-pregnancy drinking. Many midwives described how they fit it into a conversation to explore the woman's, or couple's, attitudes towards alcohol.

*Yes then I usually say that "what about alcohol" I usually say. "Are you drinking any alcohol" and then most of them say no, and then I say, specify, "but what was it like before you got pregnant" "well then I drank" so that's what usually happens [laughing]. And then I say "I have this AUDIT paper that I would like you to fill out and then I want you to fill out the past year but before you got pregnant". And then they fill that out and it usually takes some time, because the questions are quite tricky some of them are, there's one that they usually get stuck on, which is a bit tricky. And then they fill that out and I look at how many points they got then. And then if it is towards the lower scores, so three-four, five or something I usually say "how do you feel now" "no god no" they usually say then, thank god, so "no but now I abstain completely" [...]*

Swedish midwife 4

There was no agreement among Swedish midwives as to whether information should be given to everyone or only to those who scored high on the AUDIT test.

*Yes, they get to do the AUDIT first. And then I say, regardless of what score they get on this AUDIT I inform about pregnancy and alcohol. So I show this (picture of foetus in uterus) I show this then, so I use this when I inform [...] even if they have zero on the AUDIT I inform everyone*

Swedish midwife 5

Most Swedish midwives mentioned the AUDIT and a ‘menu’ of lifestyle areas as useful tools to have a good conversation with women. This ‘menu’, outlining several health behaviours and risks during pregnancy, was perceived as useful because “it shows in some ways that it’s something that I ask everyone and not specifically to you” (Swedish midwife 1). However, confidence in talking to women about alcohol however took time to build up, from training as well as practice. Midwives felt that more recently added routine questions, around domestic violence were more difficult to discuss. One Swedish midwife noted that domestic violence was “difficult to bring up in a good way, I don’t feel done with that [...] to learn a wording, you have to learn your verses. Like that sounds good and sits well in your mouth and feels good in your body” (Swedish midwife 5).

*We have practiced it a lot, it felt really weird in the beginning. But we have practiced it a lot so yeah. So it’s a general question together with a lot of other general questions that are quite intimate and you delve deeper it. Yeah, I actually don’t think that you get all the cards on the table right away but that you can open for discuss that you feel that this it is possible to bring up those questions*

Swedish midwife 8

*Very comfortable. It’s not an issue. But I don’t feel uncomfortable talking about violence, or to talk about smoking or like go into those bits either but it’s part of my job role eh and you can sit back on that quite a lot that it’s not something that I don’t, but it’s part of what is written and you can show that then if someone questions it, it says clearly what we are meant to do.*

Swedish midwife 6

Other midwives felt that there were wider positive outcomes of informing expecting parents about the risks associated with drinking alcohol, for example, to spread abstinence advice to their social group.

*And then I usually say “you can help me with this and tell your friends who don’t understand that you shouldn’t drink alcohol”. Then, then if there’s nothing more than that, if they are below the limits then I usually don’t talk much more about it then the first time*

Swedish midwife 8

All midwives felt very confident about talking to pregnant women about alcohol, as they believed it to be part of their role as a health professional. Many midwives however, acknowledged that they worked a lot with tailoring the conversation depending on who they had in front of them. It was acknowledged that alcohol was not part of the yearly update that English midwives at this local maternity service had to do, which made them feel less confident speaking about topics that were part of that update. Ultimately, midwives came back to the fact that it’s part of the job and it needs to be done.

*But I don’t, I don’t do it because, I don’t know but I probably would be much more confident in talking about the smoking aspect. But then, as midwives we have to have yearly updates. And smoking kind of gets more on that agenda, alcohol never does*

English midwife 1



*I feel quite confident talking about that and I think women expect to have conversations like that, when they have a conversation when they see a health professional so probably not something that makes me feel uncomfortable, with those things are not something I feel uncomfortable talking about, not that there is anything that you know perfect in anyway like very fat people don't like being given dietary advice by very fat health professionals because there's a lot of it, there's a lot of literature on that on how can you advice about diet when you are obese as well type of thing so I suppose as a smoker, but you might not know a smoker but "who's she to give smoking advice when she's a smoker herself?", but it's part of the job and you have to do it*

English midwife 6

Among both English and Swedish midwives it was noted that having alcohol as a routine question could decrease potential discomfort, as it meant they would address it with all women and therefore not single any particular woman out to ask about their drinking.

*I think it should just be part of an antenatal question [laughing] part of the conversation and that way if you're feeling uncomfortable about it you've got the excuse that you have to ask these questions and that's always a good way to get around anything that you don't feel too comfortable with you know "this is part of my routine thing" you know guideline thing*

English midwife 4

One question of specific interest was whether the pregnant woman's partner is involved in the discussions around alcohol, where it became evident that there were quite distinct differences between the two samples. While English midwives noted that they only regarded their partner's lifestyle as important in regards to issues like smoking, where they felt there was a direct impact on the woman and baby, some of the Swedish midwives described how they also engaged the partner in the routine questions about alcohol. Some, but not all, also routinely used the AUDIT tool for the partner as well.

*Not as a general rule, no, no. I mean it's the woman and her baby, but it's, there's a fine line we don't challenge if they drink but I do with smoking cessation I say to them "so you smoke, you've got to stop as well because you can't expect her to without support", but never with the alcohol, which is strange really when I think about it. Why shouldn't you stop? But I think it's with smoking cessation it's more because they can smoke and second hand smoke and it can get around. Whereas if he sits there with his pint of lager, it's not affecting her if he's doing it*

English midwife 5

*Some asks "do you also want to fill this out" and then he gets to choose. But I just hand it out "you are going to fill out a paper on your alcohol habits" and then it's like yeah, end of story! [both laughing] no exactly so there's not an option it's just to do it*

Swedish midwife 1

*And not always, but sometimes I also ask the man to fill out a form and it might be there that I know since before that there is a problem or something that you might feel that there are interventions needed for both for it to work. And it can be difficult if you have a high AUDIT score and the partner continues to drink and continues with the life that she would like to do herself*

Swedish midwife 6

Overall midwives were happy with the resources they had for working with alcohol prevention. Some English midwives commented on the way that their assessment of alcohol habits is designed, for example lacking in flexibility to fit women's reported intake (e.g. no option for occasional drinking). Those midwives who had attended training specifically on alcohol and pregnancy or FASD training were positive about it as the training provided them with the confidence and knowledge to underpin the discussions with women about alcohol. While the Swedish midwives reported having the leaflet "A good start" (Appendix M) available to give to expectant parents, English midwives noted that they did not have anything specific on alcohol and pregnancy to give to parents. Some noted that general information about nutrition includes alcohol, but that a specific alcohol and pregnancy leaflet could be beneficial.

In relation to resources, Swedish midwives talked about training that the regional maternity services had organised. These were well received and they specifically mentioned these as building on their knowledge and giving them tools for how to discuss alcohol with women. They also mentioned regional meetings (held a few times per year) as important platforms to discuss new policies or new research, and also discuss practice around topics such as alcohol. Interestingly, English midwives spoke about their annual reviews, where smoking was included, but alcohol was not. This was perceived as odd as they believed that alcohol is just as an important public health issue. Furthermore, one midwife noted that in her practice she is obliged to collect data on smoking rates among pregnant women, as required by the Government. However, routine data on alcohol consumption was however not required to be collected and reported back to the Government in the same manner. In Sweden data are collected and made available since 2012 on alcohol use during pregnancy, in regards to follow-up of the ANDT strategy (PHA, 2015a).

As discussed in Chapter 5, social environment may be important to discuss in order to tease out whether alcohol will pose a problem to the woman. While this was touched upon among some midwives in both countries, usually this was in relation to knowledge of for example, a partner who has an alcohol problem. One Swedish midwife, whose patients were primarily younger women (at a GP surgery in a rural area where women on average have children at a younger age), described how she would explore the social environment in the conversation. This idea did not just relate to the pregnancy, but was for her also a way of discussing what influences there might be once the woman has become a mother.

*Ask what it is like and these social contacts and there might be many bits. What kind of people does she associate with? Is it good people she is associating with or is it less good and...? I am thinking what will she associate with later, it's a lot about her becoming a mother now [...] What kind of relations can she build out in society? Parents, friends... what does it look like? That is important I think. Just like during pregnancy and this, we don't want her to start drinking alcohol later*

Swedish midwife 4

The context of this midwife's practice, however, allowed her to have a more in-depth discussion on this matter. She described her case load as relatively low and I got the impression that she had the opportunity to have longer chats with her patients. For example, she mentioned that she at times would call women for an extra appointment if she felt they needed more time to discuss issues such as alcohol. The impression from other midwives was, however, in addition to women saying they did not drink, that time was limited for extensive discussions.

#### 6.3.4 Health Promotion and Public Health in antenatal care

**Table 25. Theme IV: Promoting healthy lifestyle in pregnant women**

Subtheme	Illustrative quote
<b>Alcohol advice</b>	<i>I think they shouldn't drink alcohol during pregnancy, at all</i> English midwife 4
<b>Drinking culture</b>	<i>I actually think that people drink incredible amounts. And it is shocking sometimes when you hear how young women drink. They are wasted</i> Swedish midwife 8
<b>Individual focused care</b>	<i>I guess I would probably say, you do tailor the conversation to your audience don't ya. So you know you have deal with it, you have to speak to people in a way that they understand ya and they understand the implications perhaps of what they're doing</i> English midwife 1
<b>Public health</b>	<i>Yeah like we have had this about lifestyle as a theme now during the past ten years, we've learned this thing about motivating interviewing. And we have gone through, we do use that way of working so to speak, in terms of both smoking and alcohol yes we have another, yes there's a lot more (focus) on information</i> Swedish midwife 3

One of the most prominent themes was the midwives' beliefs that no alcohol is in fact the safest option during pregnancy. Most midwives argued that abstinence advice was preferable as it provides a clearer standpoint for the women. One English midwife explained that "It is easier to stick with that because I think, you can't argue with zero can you" (English midwife 1). Despite that the NICE guidelines allowed for drinking small amounts of alcohol, English midwives were clear in that they believed in abstinence. However, one midwife noted conflicting information in the media, which at times contradicted what she was advising.

*I would advise, as a midwife I would advise women to abstain from alcohol. Just because we don't know the effects that it has and the guidance that we've got, a lot of the media sort of information is quite variable a lot of the time, it sort of changes from "a glass of wine is okay" to "avoid alcohol at all costs" but the guidance that we work towards is that we should advise women to not drink at all*

English midwife 6

Also among Swedish midwives the attitude of complete abstinence was prominent, with the difference that none of them would negotiate that any alcohol during pregnancy was acceptable when the woman knew that she was pregnant. A few midwives mentioned the importance of addressing individual needs and if there was an issue with addiction was that appropriate referrals were made. One midwife acknowledged that despite believing in abstinence it might not be possible for all women:

*My general view is obviously zero tolerance, so [laughing] but at the same time it is about individuals, so. So just like with the smoking it's not possible to say to everyone "no, no stop"*

Swedish midwife 6

Many midwives also spoke about public health and their role in terms of discussing not only the medical aspects of pregnancy, but also ensuring that women are provided public health information. One concern that was raised however among midwives in both countries was that alcohol in general is an issue in society and some felt it was not spoken about enough in terms of the risks to the developing baby.

*But essentially alcohol in the body is harmful in larger amounts isn't it so I don't think that, I think that it should be spoken about in the same way that young girls now who smoke don't think, don't understand the damage it does to the baby or potentially can do to the baby. It's the same thing, neither of (it) is being spoken about properly. And considering the smoking of people who do them, on a daily basis it should be spoken about in more detail*

English midwife 1

One English midwife believed that a few major topics were important to get across to women, but too much information might not be effective due to ‘information overload’. Several midwives acknowledged this as an issue. Therefore, focusing on the essentials would help women focus on the areas of most importance for them and their baby’s health.

*So there’s a big checklist “don’t smoke, don’t drink [...], you know don’t do this, don’t do that” so if we can target and say “yeah eat healthily, don’t drink alcohol and don’t smoke” I think you’ve got a big section of it sorted then and done. Don’t bring in all those things about caffeine and sort of down it, I think you have to be if it’s going to be stuff then it has to be more precise as well in what we say. Target it a bit better, and give good information as well so you give good advice and understandable. Don’t give them these research things that “60% of these said and that 90%” but say “this is it, and this is what happens and if you don’t this will happen”. You know make it easy*

English midwife 5

Among the English midwives the discussion also focused around the guidelines, where the use of the NICE guidelines was explored. Again, the consensus was that women should be informed not to consume any alcohol during pregnancy, and a few midwives expressed that the dual message in the advice misinforms women about the risks with drinking.

*I think it’s confusing, it’s confusing because someone may even say “oh you can have a glass of wine” and you know “that’s fine” and then the next thing you know, or the next morning it changed to “no, nothing at all”. And I think it’s really for women, that they don’t understand it really that “oh after three months I can have a glass of wine” just say “unless you are desperate – don’t”*

English midwife 5

*I think the Government should be saying “don’t drink”, no alcohol is safe during pregnancy it’s not safe to drink because we don’t know actually what the risks are. Well we know that the risks are but we don’t know what level would be at risk, so I would give the information, I think that we should all be singing from the same hymn sheet*

English midwife 7

Many English midwives argued that women say they give up alcohol, but it appeared that they still perceived it to be important to get the advice across to the woman and emphasise that they did not necessarily agree with the Government’s guidelines of ‘low risk’ drinking.

*There’s nobody really, that say that they do or they say “not since I’ve known that I was pregnant”, and I just reiterate that and we also have it on our booking history that we have discussed (alcohol). You know the Government guideline currently say that you can drink one to two units during pregnancy that it’s safe but our midwife recommendation is no*

English midwife 7

Swedish midwives also emphasised the abstinence advice to the women they meet with to ensure that all women are aware of that recommendation.

*I don’t think that you should drink alcohol during pregnancy, because it causes birth defects. So that is my recommendation to all pregnant women, that you abstain completely*

Swedish midwife 2

While many midwives had experience of women who referred to risks of smoking with scepticism in terms of their mother’s smoking when they were pregnant without causing harm, only three English midwives mentioned wives tales about drinking during pregnancy.

*Because then you hear and you’ll think “oh a glass of red wine is good for you isn’t it, you won’t get blood clots”, you know*

English midwife 3

*That's when they watch on the telly don't they with their mum and they'd go "red wine is good for the cardiac flow" or they think it's good for the digestion so they think it's medically proved so it's must be research so it must be fine [sarcastic tone]. So they are getting really cross wired about what's okay and what's not, but the biggest thing you've got to take into consideration is the baby as well, so what works for the normal population isn't for you*

English midwife 5

Swedish midwives also talked about the discussions they have with women around smoking, and how previous generations had smoked without causing harm to their children. Only one midwife recalled having had a discussion with a woman about her beliefs that alcohol was not harmful in small amounts.

*I had a long discussion here with, it was a woman who, now she's moved again she was only here temporarily because of her husband's job. But there it was the norm, with food [...] But she had understood, and they had probably lived here six months when she came to me, that you don't do that. So she told me herself that she hadn't but she thought it was completely stupid*

Swedish midwife 7



## 6.4 Discussion

The aim of this study was to explore midwives' experiences of working with alcohol prevention in antenatal care and their perceptions of national guidelines and available resources for prevention. The findings indicated that there were many similarities in how midwives worked with alcohol prevention in England and in Sweden. The views and attitudes regarding low to moderate amounts of alcohol use during pregnancy however differed between the two countries. Swedish midwives' personal opinion was that small amounts, or any amount, could harm the foetus whereas English midwives expressed that small amounts might not harm but would still advise complete abstinence. The main finding, which is interesting in the context of the different official guidelines in place at the time of the study, was that midwives in both countries were persistent on advising complete abstinence. The similarities and differences will be discussed in relation to the literature and existing theories to put the findings in a wider context. Based on these findings, suggestions for policy, practice, and future research will also be discussed.

A common theme among midwives in both countries in this study was that it was that drinking was uncommon after the pregnancy was discovered. This reflects previous research suggesting that midwives perceive that many, or most, women cease drinking once they discover that they are pregnant. For this reason midwives may only address alcohol at the booking appointment (Jones et al., 2011; van der Wulp, Hoving & de Vries, 2013). While drinking was described as uncommon, some used narratives such as "if they are honest", indicating some reservation towards whether all women are open about their drinking. van der Wulp, Hoving and de Vries (2013) also found that midwives questioned the honesty in women's self-reported alcohol use considering the low prevalence of prenatal alcohol use they had experienced. Statistics do however suggest that between 6% and 30% of women in Sweden may continue to drink during pregnancy (Göransson et al., 2003; Skagerström et al., 2013) and any use of alcohol among English women has been found at 26% (Smith et al., 2014) and 41% (McAndrew et al., 2012). Similar prevalence was found in the current study (Chapter 4).

As two in four English women report that they drank at some point during pregnancy, the fact that midwives describe prenatal alcohol use as very unusual suggests that pregnant women do not report their alcohol use. One possible explanation is that they may not drink

in early pregnancy but later on (also discussed in Chapter 4), and as indicated here midwives tend to not follow up on alcohol consistently in later pregnancy.

Underreporting is an issue, but the fear of judgement from health professionals has been found as another explanation. Muggli et al. (2015) found that this was particularly true among women who consumed moderate or heavy amounts of alcohol and were worried about being judged by their health professional. The stigma attached to drinking during pregnancy (Room, 2005), in contrast to the social norm of drinking when not pregnant, may prevent women from reporting (or underestimating) their drinking. However, the findings here indicate that midwives are prepared to discuss alcohol and that they do not judge women based on their behaviours, which was also true for other health-related behaviours. Midwives argued that a good relationship between them and the women they engage with is important. Trust was seen as vital for disclosure of issues such as alcohol use, which is enabled by the woman feeling that she trusts the midwife (Phillips et al., 2007).

Within this research I came from the perspective that differences in guidance, as a result of national policy, are important factors to consider. It is therefore relevant to discuss the findings in relation to the literature around de-normalisation policy (also see 5.6), in which people's behaviour changes when policies shift social norms of that behaviour. As an example, the wide implementation of policies such as smoke-free environments, health warnings and regulation on sales of tobacco are argued to have influenced the prevalence of smoking to decrease (Bell et al., 2010). However, Bayer (2008) noted that de-normalisation policies can discourage people from disclosing behaviours in situation when it would be beneficial, such as to a health professional. It is likely that de-normalisation processes have taken place in both countries, subsequently discouraging women from reporting alcohol use during pregnancy. An indication of how alcohol and pregnancy is framed in Sweden has been demonstrated in a recent study by Törrönen and Tryggvesson (2015) who analysed the public health education material about alcohol and pregnancy used in antenatal care in Sweden. They suggested that the focus of the leaflet "A good start" (Appendix M), routinely given out to expectant couples, is on the woman and mother as having responsibilities over the foetus by not drinking. Subsequently, women who are not conforming to this constructed norm are stigmatised. They also suggested that the leaflet is designed to identify with the vulnerable foetus, rather than with the pregnant woman as an autonomous person. The study by Törrönen and Tryggvesson (2015) is an important

contribution, as it analyses the ways in which attitudes of prenatal alcohol use are institutionalised. Considering that the literature is scarce around the impact on wider public health interventions (Crawford-Williams et al., 2015a), the underpinning framing of messages as well as moral underpinnings of the content appear too important to ignore. In the current study, these aspects of inherent moral underpinnings may be a reason why the Swedish midwives in the current study had almost never come across women who intentionally consumed alcohol during pregnancy.

The findings also showed that midwives perceived that the pregnant woman's partner rarely abstains from alcohol, but that a few alter their habits. There were distinct disparities in practice between the two countries on this matter as many Swedish midwives assessed both expectant parents' habits with the AUDIT questionnaire. However, many English midwives noted that including the partner could be beneficial to support behaviour change, as the partner's continued drinking could make it harder for the woman to stop. English midwives did not routinely include the partner's habit in the discussion about alcohol, but acknowledged that they were aware of existing issues or if they could smell alcohol on the partner. The lack of attention to the partner's alcohol habits has been shown in other studies (van der Wulp, Hoving & de Vries, 2013), but also that partners can feel excluded from the antenatal care. Including partners in the discussion about alcohol may not only be beneficial in relation to supporting the couple, but making the partner more part of the appointment. Greater attention to the partner's psychological needs throughout the pregnancy, alongside supporting the woman's physiological and psychological needs, would further empower them in the transition to parenthood (Fenwick, Bayes & Johansson, 2012; Finnbogadottir, Crang Svalenius & Persson, 2003; Widarsson et al., 2012). Swedish antenatal care explicitly sets out to underpin the care of pregnant women with a gender equality perspective and also acknowledges the evidence on partners feeling excluded from the care (NBHW, 2014). Within the NICE guidelines, it is explicitly stated that the pregnant woman's partner should be treated with respect and be provided relevant information. However, the care is woman-centred and the only explicit involvement of the partner in health behaviour is that the midwife should "address any concerns she and her partner or family may have about stopping smoking" (p.18) (NICE, 2008). Guidance for Swedish midwives states that validated screening tools can be used also for the partner (SNIPH, 2009b) to assess alcohol consumption. Explicit reference to the possibility of involving the partner in the conversation may have contributed to Swedish midwives more often doing so, compared with the English midwives.

An important theme in the current study was how midwives viewed their role and responsibilities towards pregnant women and in advising about health behaviour. Building a trusting relationship with women to discuss health behaviour has been reported as an important view among midwives (Heslehurst et al., 2013; McLeod et al., 2003; Phillips et al., 2007; Schmied et al., 2011). The current study found that midwives believed the relationship to be important and at times they had to adapt their conversations to ensure they did not jeopardise that relationship. In their interviews with Scottish midwives Doi, Cheyne and Jepson (2014) found that midwives valued a good relationship with women. However, when implementing alcohol brief interventions to reduce alcohol exposure during pregnancy they felt they had to be sensitive to address alcohol in a way that did not risk upsetting the woman. In addition, van der Wulp, Hoving and de Vries (2013) found that although midwives did not specifically mentioned the midwife-woman relationship as a reason, they felt that giving the abstinence advice could cause worry to women who had been drinking before pregnancy. This is interesting as the current study found that drinking pre-pregnancy recognition was a theme that midwives mentioned. Some felt less prepared to deal with worries about drinking in the pre-conception period, yet never gave that as a reason for not telling women to abstain. They rather expressed the opposite; in both countries midwives were adamant that no drinking is the safest option and that was the advice that they gave to pregnant women. The findings suggest that support for midwives on how to hold conversations around drinking before knowing about the pregnancy could further help them improve their practice.

In relation to perceived responsibilities, midwives had to negotiate their relationship with women against the need to provide advice on sensitive topics. They believed that it was their duty to provide abstinence advice, but did still note that they were concerned about sustaining a good relationship, and similar findings have been found in the literature on smoking (Abrahamsson et al., 2005; McLeod et al., 2003; Thyrian et al., 2006). The negotiation between providing professional advice and also being an ally with the woman throughout the pregnancy is potentially a challenge in addressing alcohol in the booking appointment. Midwives in both countries described the alcohol question as a non-optional topic to address, however with the use of AUDIT Swedish midwives appeared to spend more time on the subject. Furthermore, a recurring theme was that almost all women reported they had ceased drinking, which could be a reason why midwives do not pursue the question further once a negative response has been obtained. Van der Wulp (2014)

explored Dutch midwives' perceptions of an intervention aimed to pregnant women in antenatal care. The intervention included assessment, information, an action plan to cease drinking, and a self-help guide with follow-up sessions later during pregnancy. While midwives were positive to the concept and perceived to have benefited from the training and material used in the intervention, some midwives did not adhere to the follow-up schedule as they believed it to be unnecessary as women reported they had stopped drinking. The belief that drinking was uncommon was listed as a reason for resistance towards implementing the intervention. The current study showed that midwives in general consider alcohol an important part of the booking appointment. However, it may be important to acknowledge that some midwives in the current study, particularly English midwives, noted that women may not be honest about their drinking. National statistics for England suggests that two fifths of women continue to drink during pregnancy (McAndrew et al., 2012), though the midwives narratives did not indicate as many as 40% of the women they meet report drinking. In addition, as Study I indicated that more women may drink towards the later stages of the pregnancy, the notion that few women drink may be related to that midwives only asked in early pregnancy. In support of the findings from Study I, alcohol should be addressed throughout the pregnancy.

The clearest distinction between the English and Swedish midwives in the current study was the way they work with alcohol prevention in antenatal care. While Swedish midwives used the AUDIT screening instrument, the English midwives used standard questions on their booking system, which only included some questions on consumption levels before and during pregnancy. Fitzgerald and Schölin (2016) explored the views among implementation leaders (N=11) in Scotland, regarding a national alcohol brief intervention programme in antenatal care. The findings showed that midwives were concerned about how they ask pregnant women about alcohol, whereby validated screening tools asking for current drinking were perceived as unhelpful to detect any drinking during pregnancy. Chang (2001) argued that using screening as a routine by health professionals who meet with pregnant women can reduce feelings of stigmatisation. Furthermore, Chang also argued that screening is not utilised to acquire a result per se, but can be an effective way of initiating a discussion around alcohol. Fitzgerald and Schölin (2016) found that asking about pre-pregnancy drinking was an accepted approach which had more value for midwives, as well as the perception that women may be more honest if the focus is not on current drinking. In Sweden, the introduction of AUDIT within antenatal care, as well as primary care more generally, was described as a "pedagogical tool" to engage in

conversations about alcohol (Nilsen, Wåhlin & Heather, 2011). The current study suggests that Swedish midwives did find the tool useful in this manner. It appears from the findings that English midwives could benefit from using a similar instrument. One English midwife described wanting to implement a screening instrument to further establish a monitoring system for alcohol, as she described that they are with smoking. The way the English midwives' questions worked also meant they felt there was a lack of options on the system that matched women's own reported drinking patterns. One midwife in the current study specifically mentioned occasional drinking is missing from the form, which women might spontaneously report yet none of the set options would fit with how they described their drinking. Muggli et al. (2015) found that women felt more inclined to accurately report their alcohol intake if there were options that fit their intake, including an option for occasional drinking.

Payne et al. (2014) in their study in Australia found that the majority of midwives assessed women's drinking habits and advised them according to the guidelines. However, further action on alcohol such as using screening tools, initiate brief interventions, or give more detailed information about risks was less common. Reasons given were lack of resources as midwives said they lacked education material to give to pregnant women. The Swedish midwives in the current study reported having the leaflet "A good start" (see Appendix M), whereas several English midwives said they lacked any targeted information to give to women. General pregnancy pamphlets were available; however, alcohol was only covered in a small fraction of them and was sometimes mixed in with other information, risking the information to get lost amongst the rest, leading to 'information overload' (Anderson et al., 2014b; Loxton et al., 2013). Midwives put emphasis on giving verbal information, but also to be able to give some written information to refer to after the appointment. This could also tie in with the experience of one midwife who felt women may be more inclined to drink towards the end of pregnancy, whereby providing some additional information could reinforce the advice given in early pregnancy.

Apart from written information, which appeared to be perceived as very positive by the Swedish midwives, all midwives mentioned training and service specific resources as important for alcohol prevention. Most midwives mentioned training days they had taken part in, with specific focus on alcohol and pregnancy. These were generally perceived as positive and providing a good knowledge base for discussing alcohol with pregnant women. Similar support for training was found by van der Wulp et al. (2014), where

midwives were trained in relation to implementation of an alcohol intervention in antenatal care. In addition, Skagerström et al. (2012) found that midwives who were more confident about alcohol prevention (defined as perceived knowledge about risks with drinking and knowledge in detecting women with risky drinking habits) were significantly more likely to have had three or more days of training in alcohol prevention. Midwives perceived the training to be an opportunity to brush up on their knowledge in the subject (Skagerström et al., 2012). Midwives in the current study generally mentioned alcohol as a very small part of their midwifery training and may therefore be something that needs to be maintained regularly over time. Some Swedish midwives mentioned their regional midwifery meetings as a good arena to get updated information on topics such as alcohol, but more importantly being able to discuss their practice of alcohol assessment with other midwives and further improve their methods. A few English midwives noted that while smoking is included in their yearly annual update training, alcohol is not. Again, midwives generally felt confident to discuss alcohol with women, but some admitted not having immediate knowledge about, for example, features of FASD and would need to read up on the topic or refer a woman on if a discussion about it was needed. Considering that antenatal care in both countries clearly states that practice should be evidence-based (NBHW, 2014; NICE, 2008), ensuring that midwives are updated on the evidence can further strengthen their role and confidence in alcohol prevention.

Having a routine for conversations on health behaviour was important for midwives, which may be related to the number of pregnant women that midwives care for. Kesmodel and Kesmodel (2011) found that Danish midwives who cared for more than 100 women per year were significantly more likely to promote abstinence to pregnant women than midwives who cared for fewer than 100 women per year. On the other hand, Skagerström et al. (2012) assessed factors relating to Swedish midwives' perceived confidence in alcohol prevention where number of women per week was not associated with higher confidence. However, midwives working in major cities (>250,000 inhabitants) were more confident of their knowledge of risks and ability to detect risky drinking. Furthermore, Skagerström et al. (2013) found that women in larger Swedish cities (>200,000 inhabitants) were more likely to continue to drink during pregnancy (OR = 1.69, 95% CI 1.00–2.86,  $p = 0.048$ ). In the current study, none of the Swedish midwives worked in a city of that size, and one midwife noted that in the rural area in which she was working drinking was different to in bigger cities where, for example, drinking after work was common among working women. However, in both sites midwives repeatedly said women tell them they

have ceased drinking so it is possible that their experiences and confidence levels are high as they have not been challenged in their knowledge in meeting with women who continue to drink.

The results indicate that promoting healthy behaviour is an important part of midwives' work and that midwives are concerned about public health aspects of maternal health care. The challenges to public health seen in the wider society, including alcohol use, smoking, overweight and obesity, are also evident issues during pregnancy. These issues put further pressure on midwives to work with health promotion, rather than just focusing on medical aspects of pregnancy (Beldon & Crozier, 2005). Providing advice about alcohol therefore can be seen as a vital part of the public health focus in antenatal care. All midwives in the current study fully supported complete abstinence advice and advised that in their appointments with pregnant women. While studies have shown that the majority of midwives in countries with a complete abstinence policy endorse the advice (Kesmodel & Kesmodel, 2011; Payne et al., 2014;), research has also found that not all midwives endorse such advice (Crawford-Williams et al., 2015c; van der Wulp, Hoving & de Vries, 2014). In the current study, professional and personal beliefs differed in the two countries; English midwives at times expressed a personal opinion about occasional drinking potentially not imposing a major issue, yet they would not give such a recommendation. Swedish midwives' views appeared to be incorporated in a wider abstinence attitude in the society at large, whereby they would refer to even small amounts of alcohol as dangerous. The media attention that alcohol use during pregnancy has received in the UK, with examples of contradictory reports on the research on low to moderate drinking (Cooper, 2013; Laurence, 2012; Taylor, 2012), may be why English midwives in the current study expressed some doubts on the harms with occasional drinking. Previous research from the UK has indicated that women received mixed messages about alcohol (Raymond et al., 2009), however, the accounts from midwives in the current study suggests that the abstinence message was consistently promoted by midwives, despite the inclusion of a "low risk" limit in the NICE guidance.

A lot of the discussions around alcohol in the current study ended up focusing on drinking culture as an issue in the society in general. Several midwives in both countries expressed concerns about the consumption levels by primarily young women, but also by people in society overall. This also stimulated the midwives to reflect on other preventive strategies to avoid prenatal alcohol exposure, especially in the pre-conception period. The structure



of the Swedish antenatal care means midwives also prescribe contraception (NBHW, 2014), which puts them in a position where they can work to prevent alcohol-exposed pregnancies by asking about drinking habits of women who come to get contraception prescribed. A few Swedish midwives said they were already doing this as it has been on their agenda for the services they provide to include such a public health aspect on prescribing of contraception. English midwives also mentioned that drinking habits in society are concerning and had experience of women consuming alcohol before they were aware of the pregnancy. The latest Public Health Rapport from the Public Health Agency of Sweden showed that risky alcohol habits ( $\geq 5$  points on AUDIT-C) have declined slightly among women overall since 2005. Women aged 16 to 29 years have the highest prevalence of risky drinking habits, despite a decrease in this group since year 2005, with around a third of women scoring five or higher on the AUDIT-C (PHA, 2014a). Recent statistics for GB (HSCIC, 2014) show that 15% of women are increasing risk drinkers (15-35 units per week) and 4% are defined as high risk drinkers ( $\geq 35$  units per week). Furthermore, 35% of women aged 16 to 24 years reported binge drinking ( $\geq 6$  units at one occasion) in the last week (Office for National Statistics, 2013). As the age for first-time is 29.0 years in Sweden (Statistics Sweden, 2016) and 28.3 years in England (Office for National Statistics., 2013), there is some reason for concerns about young women's drinking habits and the years leading up to potentially becoming pregnant. A British study found that in a national survey of sexual attitudes and lifestyle (N=5,686), 55% of pregnancies were planned, whereas 29.0% were defined as "ambivalent" and 16.2% were unplanned (Wellings et al., 2013). In conclusion, additionally focusing prevention also on women at risk for an unplanned pregnancy with risky drinking habits (i.e. having an alcohol-exposed pregnancy), may be of importance and is also recognised by midwives in these countries.

The pressure on antenatal care to ensure health in pregnant women and a healthy start in life for children, is an increasing challenge due to wider public health problems including overweight and obesity, smoking, drug use, and alcohol use (Tulchinsky & Varavikova, 1999). The midwives in the current study identified their roles as fitting in with the public health agenda and that alcohol is an important issue to address, along with other aspects of healthy lifestyles. It was evident that midwives considered their role in promoting health as important but that there are aspects of it that could reinforce its importance on the agenda. One factor mentioned was the focus on smoking, in which the Government is putting requirements on the maternity services to provide data on smoking prevalence in pregnant

women but not for alcohol. Van der Wulp, Hoving and de Vries (2014) identified that one barrier to implementation of an alcohol intervention in Dutch maternity services was that midwives believed that smoking was a greater priority. One English midwife in the current study argued that smoking is more standardised as a public health topic for the booking appointment and called for better standardisation of the alcohol question. The maternity services are identified as a key player in promotion of public health and it is acknowledged that midwives play an important role in this unique time of a woman's life (Public Health England, 2013). Focusing on public health in antenatal care is not only essential for the health of the future child but also constitutes an opportunity for the woman to make and sustain a healthy lifestyle throughout life. It has been acknowledged that public health needs to be an integrated, rather than a separate aspect, of maternity services. However, support is needed in order to do so, which includes training and supportive policies, but more importantly an appreciation of the social determinants for health as an influence on health behaviour (Biro, 2011). Health inequalities are indeed increasingly important in contemporary public health, which has been acknowledged by British Governments for decades, yet without much improvement (Marmot & Bell, 2012). In the current study few midwives spoke explicitly about social determinants or socioeconomic status of the women they care for. The narratives around this topic were, however, mainly how socioeconomic status would increase the risk for risk factors such as drinking or smoking. However, some noted that young women and women of low socioeconomic status indeed do change their lifestyle during pregnancy. No midwife explicitly discussed how they address social determinants in health as part of their role as health professional, but was more mentioned in relation to risk factors.

#### ***6.4.1 Limitations***

There are several limitations that need to be addressed. Firstly, the sample was small and therefore did not allow for further comparisons, such as the number of women midwives see in an average week. Previous work has suggested that midwives who see more women in their practice are more likely to advise women to abstain (Kesmodel & Kesmodel, 2011). Furthermore, research has suggested that the size of the city in which the practice is located may also influence how midwives work with alcohol prevention. Further research should therefore aim to recruit midwives from a variety of practices to enable such comparisons. Due to the structure of the Swedish antenatal care all midwives were working in GP surgeries and had very similar roles, which made the Swedish sample very homogenous and provided a united view of GP-based midwives' views. In contrast, the

English midwives had varied work descriptions where some were working in more specialised areas and others were community-based midwives. The study is therefore limited in the fact that a fairly small proportion of English midwives were community based and the ones that do the booking and in essence deal with the 'normal' pregnancy (i.e. no substance or alcohol abuse, obesity etc.).

The transferability of the findings to each nation as a whole is limited as the regions are likely to have different characteristics than the rest of the country (see discussion in Chapter 5). A cross-sectional study from Sweden for example indicated that prevalence of alcohol use during pregnancy was higher in larger cities, where the population greater than 200,000 inhabitants (Skagerström et al., 2013). Midwives in the current study may therefore not have come across many women who drink as Örebro city and the smaller rural towns where midwives worked are all smaller than 200,000 inhabitants. In contrast, as previously discussed, women in North West England do drink at high levels but in this small sample of midwives may not necessarily have cared for women from areas with high levels of drinking.

Finally, midwives in the current study all promoted the abstinence advice and reported feeling confident in discussing alcohol and other lifestyle-related issues with pregnant women. It is possible that more confident and knowledgeable midwives were more likely to volunteer to take part in the study, and also to provide that advice, whereas midwives who do not endorse the abstinence advice and feel less confident in discussing alcohol may have felt unwilling to participate in the study. Furthermore, social desirability may also have influenced midwives to report providing abstinence advice as that might be the perceived social norm based on guidelines, in particular the Swedish guidelines which suggest no drinking.

## **6.5 Conclusions**

This qualitative study is the first of its kind to compare the experiences, attitudes and views of alcohol prevention among midwives in two countries with varied policy approach to drinking during pregnancy. The results showed that midwives were confident in their role as health professionals and considered discussing alcohol and other life-style related topics as part of their work. Furthermore, midwives perceived that pregnant women stop consuming alcohol. However, some expressed underlying doubts about how truthful women are and that women's drinking may change in later pregnancy. Whereas many

themes were similar between the two countries, there was a clear disparity in that Swedish midwives use a structured screening tool, which appears to provide a standardised way of introducing alcohol into the booking appointment. English midwives perceived they approach the questions, but there were some concerns on whether the current way was optimal, as using a screening instrument could be beneficial. Similarly, Swedish midwives reported having a specific alcohol leaflet readily available to hand out whereas English midwives mentioned that a specific leaflet would be useful. Finally, midwives in both countries expressed concerns about alcohol consumption in the general population, especially among young women, and therefore noted that pre-conceptual prevention is important. Midwives in England reported not approaching the subject of the partner's drinking habits unless there was evidence the partner had alcohol problems. Most of the Swedish midwives reported giving out the AUDIT questionnaire to partners as well as women, and noted the importance of involving the partner as part of preparing them both for parenthood. Swedish midwives acknowledged that through their role in prescribing contraception they are in a good position to provide alcohol advice to women before they get pregnant, and several midwives reported already doing so.

#### **Box 4. Key findings from Chapter 4-6**

- Previous research has addressed the knowledge, attitudes and practices of midwives in alcohol prevention in antenatal care; however no studies have compared their views within a framework of national guidance on alcohol and pregnancy in different countries.
- This study aimed to explore midwives' experiences of working with prevention of alcohol use during pregnancy in antenatal care and their perceptions of national guidelines and available resources for prevention in England and Sweden.
- The findings indicated that midwives in both countries believed that complete abstinence was the best advice to give pregnant women, yet English midwives also noted that their personal view was that small amounts may not harm the baby. Swedish midwives, on the other hand, firmly believed any amount to be harmful.
- The level of routine questioning regarding alcohol consumption varied between the countries; routine use of the AUDIT tool was used by Swedish midwives whereas English midwives noted some limitations in their current system. Alcohol was seen as an important aspect of health behavior to be addressed, and all midwives felt confident in asking pregnant women about their alcohol consumption.
- Clear abstinence policy seems to also influence the views of health professionals. Using a structured screening tool, asking about alcohol habits prior to pregnancy may facilitate routine discussions about alcohol use in pregnancy.

## **Chapter 7 – Mixed methods synthesis of findings and discussion**

### **7.1 Introduction**

In this final chapter I describe the integrated analysis of the quantitative and qualitative results, and how the triangulated results provide a stronger picture than the individual studies. First I present the underpinning concepts of triangulation in MMR, followed by a summary of the themes emerging from all three studies, and how they relate to each other. I then discuss the mixed methods results along with the limitations of the chosen approach. I then move on to discuss the thesis with its implications for policy and practice. The discussion also includes a reflection upon the chosen methodology, strengths and limitations of the research, researcher reflections, and recommendations. Finally, the chapter concludes with overall conclusions of the three studies, strengths and limitations, suggestions for future research, researcher reflections, and recommendations.

### **7.2 Triangulation of results**

The analyses of the individual studies were conducted concurrently and the integration of all the findings was done in a final stage. Onwuegbuzie and Combs (2011) calls this concurrent mixed analysis, which fits the concurrent design as no single phase of the research drove the subsequent phase of data collection. Triangulation is a useful approach for analysing mixed methods data because it brings together data in a holistic way, and look beyond the traditions of quantitative research at the top of the hierarchy of methodologies (Denzin 2012). That is, triangulation works on the basis that the sum of the research parts is more valuable than each individual strand. In addition to integrating results from individual studies, triangulation draws upon mixed methods, and aims to “describe a process of studying a problem using different methods to gain a more complete picture” (O’Cathain, Murphy & Nicholl, 2010, p. 1147).

In terms of specific procedures used to triangulate results, a first approach is to present data from all strands of the research on the same page and explore where there is agreement and disagreement (Farmer et al., 2006). This encourages exploration of ‘meta themes’ (O’Cathain, Murphy & Nicholl, 2010). In the current study, triangulation was used and guided by a triangulation protocol (Table 26) to bring together the findings from each strand.

There has been some criticism towards the use of triangulation in qualitative research or MMR, as it has been argued that researchers fail to provide detail and transparency of using it as a method for increasing rigour and trustworthiness (Farmer et al., 2006). For that reason, using a protocol was regarded as important to provide transparency of how the data integration was performed.

The triangulation of the three studies sought to address the overall aim of comparing and contrasting practices and perceptions around alcohol use in England and Sweden (see 3.2). The triangulation protocol (Farmer et al., 2006) was used to integrate the results from each of the individual studies to. Each step of the protocol is described in table 26.

**Table 26. Triangulation protocol\***

Step	Activity
<b>1. Sorting</b>	The findings from each individual study were revisited, with the specific intention to extract findings that overlapped with other strands of the research as well as identify findings that only occurred in individual studies.
<b>2. Convergence coding</b>	Themes from each study were identified and each theme was compared with the other strands to explore the level of convergence. For this exercise, a separate document was created where each theme and examples from the study were mapped out in a matrix to facilitate comparisons (Table 29). As suggested by Farmer et al. (2006), the data was explored in regards to convergence. This includes coding of the data in relation to i) agreement, ii) partial agreement, iii) silence, and iv) dissonance**
<b>3. Convergence assessment</b>	All the themes compared across the studies were reviewed to provide an overall description of convergence, i.e. whether there was agreement on findings across most of the themes identified or if the overall results are scattered.
<b>4. Completeness assessment</b>	All findings included in the synthesised analysis were compared to summarise what the findings from all three studies were. This step aimed to develop further understanding of key findings on an overall level relating to the research question, but also unique contributions.

*\*Farmer et al. (2006) defines three ways of triangulate data in qualitative research: methodological, research, and data source. The current study focuses on triangulation of findings from the different strands of the study using different methods for data collection. The protocol has therefore been adjusted, as many aspects relate to a protocol that includes ways of triangulate in a team of researchers.*

*\*\*Farmer et al. (2006) go into more detail around the level of agreement in regards to frequency of themes in each data set, however for this analysis the focus was on the meaning and interpretation of a theme across the three strands and whether there was convergence on the meaning.*

Farmer et al. (2006) describe additional fifth and sixth steps in the process as “researcher comparison” and “feedback”. These steps were not relevant for triangulation of the data in the current study as it was done by a single researcher, and are therefore excluded from the table. Otherwise the methods used follow those set out in steps 1–4 in the table. Each study was analysed in sequence i.e. Study 1–3.

In step 1, the findings were explored to develop key themes, which are listed in a matrix (Table 27). After the key themes were listed, the findings were explored for each of the emerging themes. For each of the themes, a description was provided for the key findings and coded across all the studies. For example, the theme “drinking during pregnancy is more common in England”, originated in study I where a higher prevalence was shown in England compared to Sweden but the theme was also present in Studies II and III where the representations of pregnant women’s drinking showed potential cultural difference relating to for example higher perceived stigma of drinking during pregnancy in Sweden. Once all the themes had been summarised in the matrix, themes were grouped into global themes and mapped out with reference to the level of convergence across the studies. These are presented in the next section

**Table 27. Data triangulation matrix**

Main themes	Presence in studies			Findings
	Study I	Study II	Study III	
Drinking during pregnancy is more common in England	♦	♦	♦	<p>♦ <b>Study I:</b> 4% of Swedish women 44% of English women drank during pregnancy (<math>p &lt; 0.001</math>)</p> <p>♦ <b>Study II:</b> No Swedish women drank whilst pregnancy, while half of the English women did. Swedish parents were more negative towards drinking and focused on the rights of the foetus whereas many English parents argued that it is ultimately a personal decision.</p> <p>♦ <b>Study III:</b> Swedish midwives believed that drinking during pregnancy is very unusual, English midwives partially agreed but some expressed that women may have some alcohol (due to inconsistent information)</p> <p><i>Convergence coding: agreement</i></p>
Drinking is more common at the end of the pregnancy	♦	–	–	<p>♦ <b>Study I:</b> Among the 48 women who reported any drinking during pregnancy, 60% abstained in the first trimester but drank in the second, third or second and third trimester.</p> <p><i>Convergence coding: silence</i></p>
Quantities consumed during pregnancy	♦	♦	♦	<p>♦ <b>Study I:</b> The majority of women who drank during pregnancy consumed 25g of alcohol (approximately three UK units) or less per drinking occasion</p> <p>♦ <b>Study II:</b> Women who drank during pregnancy were clear on that they drank on rare occasions and limited amount (e.g. only one glass of wine). A few women felt informed on the recommended number of units and how much drink contained. Women described themselves as drinking in a non-risky way.</p> <p>♦ <b>Study III:</b> The majority of midwives believed most women stop drinking, but that there may be women who are not honest about being abstinent. Some English midwives believed women have small amounts.</p> <p><i>Convergence coding: Dissonance</i></p>



Main themes	Presence in studies			Findings
	Study I	Study II	Study III	
Factors associated with alcohol use during pregnancy	♦	♦	–	<p>♦ <b>Study I:</b> English women were significantly more likely to report any alcohol use during pregnancy than Swedish women. Multivariable logistic regression analysis of English women showed that variables contributing to the model were higher frequency of drinking before pregnancy and advice that small amounts were acceptable to consume.</p> <p>♦ <b>Study II:</b> Among the women who took part in the interview, only English women reported having drunk alcohol when they were pregnant.</p> <p><i>Convergence coding: partial agreement</i></p>
Advice to limit intake influence continued alcohol use	♦	♦	♦	<p>♦ <b>Study I:</b> 36% of drinkers were advised to drink less compared to 9% abstainers (<math>p &lt; 0.001</math>).</p> <p>♦ <b>Study II:</b> Among women who drank, some had been advised that they could consume small amounts of alcohol.</p> <p>♦ <b>Study III:</b> English midwives expressed that there is conflicting information for example in the media, and one midwife specifically believed that women do drink because the NICE guidelines allow for some drinking.</p> <p><i>Convergence coding: partial agreement</i></p>
Safe limit of drinking	♦	♦	♦	<p>♦ <b>Study I:</b> Among drinkers, 42% believed there is a safe limit compared to 13% of abstainers (<math>p &lt; .001</math>). Drinkers were also more likely than abstainers to agree with having one glass of wine for the woman to feel good is not harmful (41% and 14%, respectively, <math>p &lt; 0.001</math>)</p> <p>♦ <b>Study II:</b> Swedish parents talked about that there is no safe limit of drinking and even small amounts can harm. Among English women who drank, one specifically discussed the NICE guidelines and how she would measure it exactly to stay within the limits. Several parents discussed that heavy drinking and binge drinking would be harmful.</p> <p>♦ <b>Study III:</b> Swedish midwives expressed that no alcohol is safe during pregnancy, whereas English midwives noted that small amount may not cause harm. Some English midwives noted that the guidelines have changed over time, and thereby also the recommendation of what is 'safe'.</p> <p><i>Convergence coding: partial agreement</i></p>

Main themes	Presence in studies			Findings
	Study I	Study II	Study III	
Frequent drinking partner	♦	♦	–	<p>♦ <b>Study I:</b> Drinkers were more likely to report that their partner drank more frequently before and during pregnancy, compared to abstainers. However, partner's frequency of drinking was not a contributing factor in the final regression model.</p> <p>♦ <b>Study II:</b> Women talked about shared habits, where they used to drink with their partner. However, frequency was not something that was discussed explicitly and overall the partner's habit was not seen as something that would influence women to continue to drink.</p> <p><i>Convergence coding: dissonance</i></p>
Difference in clarity of advice	♦	♦	♦	<p>♦ <b>Study I:</b> Women who reported any alcohol use during pregnancy were more likely to agree that advice about alcohol is unclear, compared to abstainers (39% and 20%, respectively, <math>p = 0.018</math>).</p> <p>♦ <b>Study II:</b> Swedish parents were all clear on that midwives advised no drinking during pregnancy. The experiences from English parents were varied from abstinence to small amount or in some cases advice to just not drink heavily. A few even described getting conflicting advice from different health professionals.</p> <p>♦ <b>Study III:</b> Midwives in both countries argued that they always gave the advice to women to abstain completely from alcohol, but English midwives suggested that other midwives may advise small amounts due to the NICE guidelines. One English midwife specifically argued that changes in the guidelines created confusion for midwives to give accurate advice.</p> <p><i>Convergence coding: dissonance</i></p>
Intoxication	–	♦	–	<p>♦ <b>Study II:</b> Some women who drank specifically evaluated the risk in relation to feeling intoxicated. They talked about not feeling the effects of alcohol; however it is not clear if the amount they consumed was more than recommended. Women often talked about a glass of wine, few specifically talked about their intake in terms of units.</p> <p><i>Convergence coding: silence</i></p>

Main themes	Presence in studies			Findings
	Study I	Study II	Study III	
Drinking before knowing	♦	♦	♦	<p>♦ <b>Study I:</b> Before pregnancy, 90% of women drank alcohol and one in five pregnancies were unplanned.</p> <p>♦ <b>Study II:</b> Many women had consumed alcohol before they knew that they were pregnant, even women who planned to get pregnant. Few women had been concerned as it was perceived to be common that women drink before they know they are pregnant.</p> <p>♦ <b>Study III:</b> Midwives had experience of meeting many women who had been drinking before they knew they were pregnant. Most of them felt that it was a matter of moving on from that point, however a few asked for more guidance on what to advice women who had been drinking before they knew due to the uncertainty if any harm has been caused.</p> <p><i>Convergence coding: partial agreement</i></p>
Social pressure to drink	–	♦	–	<p>♦ <b>Study II:</b> Some women described pressure to drink when pregnant. One aspect was older relatives who had more relaxed attitudes towards drinking, arguing that some drinking was not harmful as it was what they had done when they were pregnant. Among English parents there were some who had experiences of friends who had expressed opinions that it would not be harmful to have some alcohol.</p> <p><i>Convergence coding: silence</i></p>
Autonomy versus rights of foetus	♦	♦	–	<p>♦ <b>Study I:</b> Women who reported any alcohol use in pregnancy was more likely to agree with the statement that if women feel good by having small amounts of alcohol it is not harmful to the baby, and less likely to agree that alcohol is always a risk to the baby. Similar differences were also evident between English and Swedish women (data not shown).</p> <p>♦ <b>Study II:</b> Swedish parents were concerned that drinking was an intrusion on the rights of the foetus, and the narratives often included words such as “selfish” and “stupid” that women would drink when they are pregnant. Even the few that did note that perhaps it is an individual decision, also expressed concerns for the foetus’s rights. English parents however generally were more inclined to talk about the woman’s right to her body and make her own decisions. A few also noted that it’s also the partner’s child and the partner should have a say in this matter.</p> <p><i>Convergence coding: partial agreement</i></p>

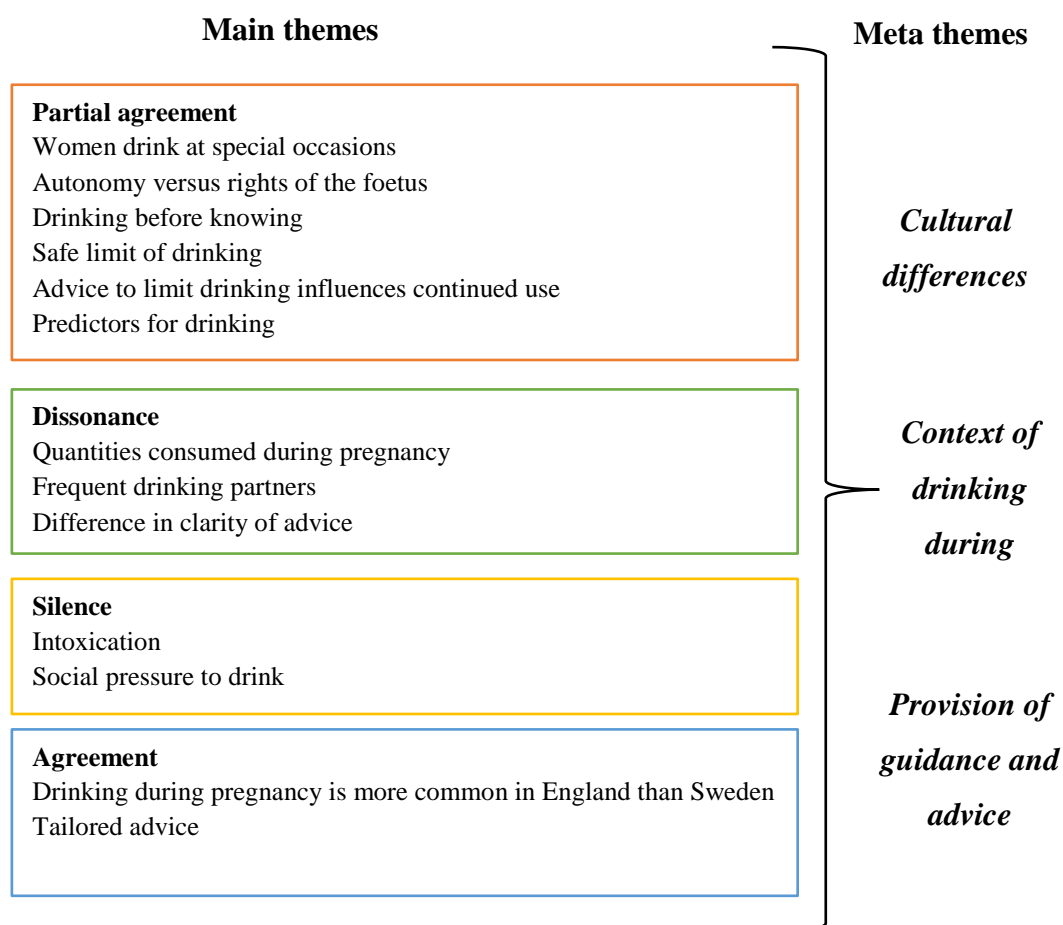
Main themes	Presence in studies			Findings
	Study I	Study II	Study III	
Tailored advice	–	♦	♦	<p>♦ <b>Study II:</b> In both countries many women had not received much information during their antenatal visit, but noted that if they had asked for it or if they had displayed some risk factors they may have gotten more information.</p> <p>♦ <b>Study II:</b> Midwives in both countries highlighted the importance of tailoring the conversation to the person, which for them was related to having a good relationship with the woman. Although all midwives were clear on that they felt comfortable talking about alcohol, they were concerned about sustaining a good relationship with the woman whereby tailoring was perceived as important.</p>
<i>Convergence coding: agreement</i>				
Women drink at special occasions	♦	♦	♦	<p>♦ <b>Study I:</b> Among the women who reported any alcohol use during pregnancy 16 drank only at special occasions, whilst 10 only drank on typical occasions and 10 drank at both.</p> <p>♦ <b>Study II:</b> Several women, and partners, described drinking as an occasional occurrence during pregnancy which was often related to a special occasion such as a wedding, at Christmas, or birthdays.</p> <p>♦ <b>Study III:</b> A few midwives mentioned that special occasions might be a temptation to drink for women as they normally would have a drink at these occasions. One midwife specifically believed that special occasions may be when women drink, as opposed to regular drinking.</p>

*Convergence coding: partial agreement*

## 7.3 Synthesised results

The triangulation process identified 14 themes from the individual studies, of which eleven were also present in at least two strands of the research. Figure 13 provides an overview of the main themes and meta-themes identified across the studies.

**Figure 13. Identified themes and meta-themes across all strands of the study**



Six themes had partial agreement across the strands, implying that some of the meaning was present in another study but not necessarily that the findings represented the same meaning. Three themes were coded as agreement and three as dissonant (indicating the theme differed in the meaning or prominence within different strands). Two themes were coded as silent, meaning that the theme was not present in any other strand. The majority of themes therefore either fully or partially agreed, indicating that findings were confirmed or complemented across the strands. Equally important, there were some findings that only occurred in one strand or where findings disagreed with those from other strands of the research. Several themes were related to each other and were merged into three meta-

themes; cultural differences, contexts of drinking during pregnancy, and provision of guidance and advice. In the following sections these interpretation of these three themes, are presented in relation to the existing literature.

### ***7.3.1 Cultural differences***

The results were clear across all three studies that drinking alcohol during pregnancy is more common in England than in Sweden. The survey results showed a significant difference in the prevalence of women who had consumed alcohol, and this was supported by the interviews with parents as well as with midwives. This agrees with other survey results have found that around two fifths of English women retrospectively reported drinking during pregnancy (McAndrew et al., 2012); and that that around six percent of women continue to drink in Sweden (Nilsen et al., 2008; Skagerström et al., 2013).

The difference in recommendations to pregnant women may have contributed to this difference; however causal relationship cannot be determined from these data. The study found no significant difference between English and Swedish women in proportion who were recommended to abstain, yet significantly more English women had been advised to cut down on their intake. In addition, more English women reported that they had been told that small amounts were acceptable. It has been shown that women who receive such advice have higher odds of continue to drink (Nilsen et al., 2012). The conflict within this theme, however, was the fact that midwives in England reported always advising pregnant women not to drink. English midwives disclosed their personal opinions, which were permissive of some drinking.

Previous research has indicated that in a sample of Swedish women (N=1,974) who were asked three to six months after giving birth about drinking during pregnancy, significantly more women reported drinking during pregnancy when asked to “estimate alcohol use during pregnancy”, compared to estimating after pregnancy recognition (OR = 1.54, 95% CI: 1.07–2.21,  $p = 0.019$ ) (Skagerström, 2015). The focused questions on pre-pregnancy drinking used by Swedish midwives appeared to be an acceptable way to address alcohol use during pregnancy. Previous research has also indicated that focusing on pre-pregnancy habits is perceived as a good strategy by health professionals (Herzig et al., 2006). Following the new recommendations from the UK CMOs, there are good opportunities to explore not only whether this may change the number of women reporting receiving abstinence advice, but also midwives beliefs around the change in policy.

The difference in prevalence of alcohol use during pregnancy may be attributed to attitudes around drinking generally, as Study I found that English parents were more likely to agree with the statement that some alcohol might not be harmful to the foetus if the woman feels good by having some. Significantly fewer English women than Swedish also agreed with the statement that alcohol was always a risk to the foetus. This was contextualised when Swedish parents discussed the rights of the unborn child whilst English parents had a larger focus on the right of a woman to make autonomous decisions regarding her own body. As Markens, Browner and Press (1997) noted, the maternal-foetal conflict “emerges in particular women, in particular pregnancies, and in particular contexts” (p.368). As such, it seemed that a “conflict” between the wellbeing of the foetus and the mother was absent among Swedish parents, as they may have viewed them as one entity. Among some English parents, this conflict was present as they weighted up risks in relation to wellbeing of the mother and her right to decide whether or not to drink. This may also be reflected in the opinions regarding safe levels of drinking during pregnancy, where significantly more English parents believed that there is a safe level of drinking. In interviews with parents, safe levels were discussed in terms of recommended maximum intake in the guidelines, but less quantified statements such of “moderation” or “responsible drinking” emerged. Previous work showing that abstaining women are more likely to agree that women should not drink anything during pregnancy (Kesmodel & Schiøler Kesmodel, 2002), and that positive or neutral attitudes towards drinking significantly increases likelihood of intending to drink in a future pregnancy (Peadon et al., 2011).

It is possible that English parents’ more accepting views of drinking may be related to the drinking guidelines in place at the time, which allowed for small amounts to be taken. Midwives in both countries were clear that no alcohol is the best recommendation and as such the safest option. Despite this scepticism on whether small amounts would harm, they described always advising women to abstain, yet the survey responses suggests that this may not always be the case.

### ***7.3.2 Contexts of drinking during pregnancy***

Study I included the question of drinking at special occasions, as women may be more inclined to drink at special occasions during pregnancy, rather than in a regular pattern. The survey results indicated that across pregnancy, similar numbers of women who reported any alcohol use during pregnancy drank only at typical occasion. However, those special occasions may be of importance if the amount consumed differs from typical

drinking occasions, which this study was not able to explore further. Women in Study II who drank during pregnancy described their drinking as occurring on rare occasions, often at celebrations such as Christmas, weddings, or birthday parties. This was also confirmed by the partners of women who drank during pregnancy. Midwives overall were not clear on this subject, with only a few mentioning the impact of special occasions as a potential temptation for women. Only one midwife specifically described her belief that women drink during pregnancy on these occasions, as she believed women may view them as exceptional occasions where drinking is acceptable.

Another important issue was the theme around social pressure to drink. The survey results did not specifically ask about social pressure to drink, and therefore did not contribute to this theme. However this emerged as a clear theme in the interviews as pregnant women referred to older relatives who sometimes encouraged women to drink on the basis that some drinking would not be harmful to the foetus. Parents in both countries reported this experience with older relatives, which they argued was due to less strict health advice when the older relatives had been pregnant. Some English parents noted that social pressure also came from friends in the same generation. This happened for women who abstained, who sometimes felt uncomfortable to argue their case when other pregnant women chose to drink, but also women who continued to drink. The influence of social norms on drinking behaviour has been shown in for example in college populations (Borsari & Carey, 2003; Halim, Hasking & Allen, 2012; Neighbors et al., 2007) and the perceived stigma of drinking during pregnancy (Room, 2005) may discourage women from drinking. The current study contributes to the scarce literature on potential influence of social norms on prenatal alcohol use, where it seems that the strong advocacy for abstinence in Sweden has formed strong social norms against drinking (Skagerström, Häggström-Nordin & Allehagen, 2015). Furthermore, the uncertainty of whether there are safe limits of drinking (Raymond et al., 2009) may have contributed to greater scepticism in England towards risk with drinking small amounts and created more accepting norms. Given the recent changes in the proposed guidelines from the UK CMOs to advocate abstinence (Department of Health, 2015), which were based on a precautionary approach, these views may shift in the future.

Finally, the research also aimed to explore, as part of associated factors for drinking during pregnancy, the role of the pregnant woman's partner. The survey results indicated that there was an association between higher frequency of drinking among partners of women



who drank during pregnancy, yet this was not significant in the final model. The interviews showed that women were not necessarily influenced by their partner's drinking, although some who drank during pregnancy would drink with their partner. Many women who abstained from alcohol had partners who continued to drink, but some partners changed only shared habits, for example type of beverage or not drinking in the home. Further research should explore these aspects more closely, and whether there are associations between the type of changes a partner makes and continued drinking for the pregnant woman. This would add to the literature, where heavy drinking in the partner has been identified as a predictor for prenatal alcohol use (Bakhireva et al., 2011), yet changes in beverage type and drinking pattern may also play part.

### ***7.3.3 Provision of guidance and advice***

The findings also indicated partial agreement across the two qualitative studies on the role of advice in regards to level of detail. Women believed that if they had presented themselves differently (as a big drinker or someone who "looked" like they might drink), the midwives would have spent more time on the topic of alcohol. They also suggested that more information about alcohol would have been given if they had asked for it. Similar findings were reflected in Study III, where most midwives spoke about the importance of being adaptable and responsive to the woman in front of them. One reason was their concern with having a good relationship with the woman. An interesting finding, given the comparative approach of the research, was the dissonance across studies in the perceived clarity of advice. Significantly more English parents agreed that advice about alcohol was unclear in study I, which was also reflected in study II where experiences were very varied. In contrast to Swedish parents who were interviewed, this was a clear difference as they all had received the advice to abstain. The dissonance in this theme was found in that all midwives were clear that they only advise women to abstain.

The type of advice given in antenatal care appeared to influence women's choice to continue or stop drinking during pregnancy. Study I showed that a significantly higher proportion of women who continued to drink had been given advice to limit their intake. In Study II, it was not as clear what the impact was arising from the type of advice from the midwife, but women who continued to drink (who were all English) were aware that there was a 'low risk' approach in the guidelines. Midwives in Study III mentioned that women are exposed to media reports that small amounts may not harm the baby, which may influence their perceptions and behaviour. One midwife specifically argued that the NICE

guidelines influence women's drinking, because they allow for having some alcohol. She was clear that she believed, that most women have small amounts because of the guidelines, despite that most women would tell her they drank nothing.

Another theme that came through all strands of the research was alcohol exposure before the pregnancy was known. Study I showed that the majority of women drank before pregnancy. For most women around five weeks passed before they discovered they were pregnant, meaning they may have unintentionally exposed their baby to alcohol. This was also reflected in Study II, where several women had been drinking, sometimes heavily, before they found out they were pregnant; also women who planned to get pregnant had been drinking before they found out. Midwives were concerned about women's drinking in general and several had experience of women who had been drinking before they found out about the pregnancy. Some called for more guidance on how to support women who were concerned about alcohol exposure before they found out about the pregnancy. This theme was a clear finding across studies and emphasised the need to also focus on pre-pregnancy drinking habits.

Finally, two themes in Study I were coded as silent as they did not emerge in any of the other two studies. The first one was regarding factors associated with continued drinking, specifically frequency of drinking prior to pregnancy. While some parents described habits around drinking after work prior to getting pregnant, this was not a clear theme that further added to the quantitative findings. The other silent theme was the proportion of women who consumed alcohol in different stages of pregnancy; 60% of women who drank any alcohol did not drink during the first trimester. Some women in Study II displayed knowledge around the increased risks with drinking in the first trimester; however there were no discussions on whether that meant drinking in late pregnancy was considered safe. Previous research has found that women believe that drinking in later pregnancy is safe (Elek et al., 2013; Loxton et al., 2013), but the current study does not provide conclusive evidence that English and Swedish women held such beliefs.

## **7.4 General discussion**

This mixed methods study explored practices of and attitudes towards alcohol use during pregnancy, from a public health perspective. The study was designed from the socio-ecological model of health (Bronfenbrenner, 1979; Sallis, Owen & Fisher, 2008), and

specifically aimed to create a wider understanding of the contexts in which alcohol is used during pregnancy from a cross-cultural perspective. The public health approach offers a wider understanding of prenatal alcohol use within a societal perspective, which can be contrasted against the medical paradigm in which it has existed for decades, following the first diagnoses of FAS in the 1970s (Golden, 2005). The findings showed that pregnancy is a time in women's lives where alcohol often is given up completely. However, the wider importance of alcohol in women's lives before and while they are pregnant needs to be considered further. This was clear in Study I, as frequency of drinking before pregnancy was associated with an increased likelihood of any alcohol use during pregnancy. Furthermore, midwives in England and Sweden emphasised that drinking among women in general is a public health concern. In their experience, very few women continue to drink once they have found out they are pregnant.

This research approached the topic of alcohol and pregnancy with a novel design, comparing two countries which at the time of the study had different official guidelines for pregnant women. The mixed methods design allowed new insights into how attitudes and risk perception differs across cultures, which may be important in designing health promotion messages about alcohol and pregnancy that are culturally appropriate. The current research further shows that drinking during pregnancy is a complex phenomenon. In England, where guidelines allowed for some drinking, some women did not consider drinking as an issue if it was kept at "responsible" levels. The potential positive connotations with drinking need attention, as they may mitigate beliefs about risk. That is, in conversations with pregnant women, midwives may need to ask more contextual questions around drinking at dinner or social events, or whether having small amounts of alcohol is a form of relaxation. The context of drinking may also be of importance for future research and development of surveys, which will be discussed in the following sections.

#### ***7.4.1 How do we interpret statistics on women's drinking? - Methodological issues***

Previous studies have given a great deal of insight into prevalence and patterns of drinking during pregnancy, yet some important aspects of prenatal alcohol use are under-studied. The cross-sectional survey included in this research could not draw conclusions on the pattern of drinking in relation to typical or special occasions, due to small numbers of women who reported any alcohol use, but given that as many women who only drank at

typical drinking occasions drank only at special occasions, this warrants further exploring.

The qualitative phase of the research indicated that from the perspective of a culture where low to moderate prenatal alcohol use is not necessarily stigmatised, women may consume alcohol at special occasions. Wider social norms and shared values within society appear to shape the different opinions that English and Swedish parents held about prenatal alcohol use. This includes perceptions that special occasions, or very occasional drinking in general, do not constitute a risk to the baby.

Drinking among pregnant women does not necessarily constitute a regular pattern. Answers regarding drinking may therefore not fit standard questions on an alcohol screening questionnaire, which is an important aspect to consider in relation to underreporting (Meurk et al., 2014). In the current study, the proportion of abstainers decreased in the later stages of pregnancy, which resonates with findings from previous research (Ethen et al., 2009; Hutchinson et al., 2013). Most published studies that have assessed alcohol during pregnancy using concurrent reports have only used one point during pregnancy, as early as the first trimester (Göransson et al., 2003; O’Keeffe et al., 2015; Skagerström et al., 2013; Smith et al., 2014). If women’s drinking changes later during pregnancy, follow-up in maternity care is important to ensure that women receive guidance and support, even if they reported being abstinent at booking. Improving the measuring of alcohol during pregnancy needs greater consistency across studies and would not only provide more accurate estimates for prenatal alcohol use but could also be important for studies that rely on self-report in relation to outcomes for the child. One approach would be to use TLFB, which has been suggested as a useful screening tool over the course of the pregnancy (Savage et al., 2003), and could be used to also explore drinking occasions. The qualitative result in the current study also suggested that measuring alcohol use during pregnancy is an area that needs more research, as women’s definitions of what constitutes drinking during pregnancy may vary. Some women may not consider occasional or small amounts as alcohol use *per se*, which is likely to affect reported levels of drinking. Meurk et al. (2014) pointed out that women tended to underreport if occasional drinking was missing on the screening questionnaires. Defining oneself as regular drinker by choosing frequency such as once per month might have underpinning moral connotations, making women cautious about defining them in those terms. Based on the results from all three studies within the current research, I argue that alongside the growing interest to better estimate consumption (Bellis et al., 2015) and

describing drinking occasions (Ally et al., 2016) in general in the field of alcohol research, there is a need for this type of focus also during pregnancy.

Finally, there has been an increased interest in not only defining drinking among adults as risky or non-risky, but also in terms of their associations with different types of drinking occasions. Ally et al. (2016) developed a typology of drinking occasions, based on the location and context in which people in GB consumed alcohol. The study found for example two types of drinking occasions for drinking at home with a partner. While there were drinking occasions at home with partner that were associated with low risk drinking (on average 3.2 units), other drinking occasions with partner at home were related to higher levels of drinking (average 11.6 units). These heavier drinking occasions with a partner were associated with increasing risk and high risk drinking. Apart from partner drinking, the typology identified other occasions where amount consumed differed (Ally et al., 2016). The idea of thinking about different situations in which people drink is also relevant for pregnancy. The current study only had small numbers of drinkers, which limited detailed analyses of different contexts of drinking. A recent study by Social Policy Evaluation and Research Unit (Superu) (Superu, 2015) in New Zealand, however, analysed drinking data from women in the Growing up in New Zealand study (N=6,822). Categories of drinkers during pregnancy were created, based on drinking data covering the period until discovering the pregnancy and then in all three trimesters. Women were categorised as quick changers (43%), non-drinkers (29%), very slow changers (11%), slow changers (5%), drifters (5%), regressors (5%), and hardy drinkers (2%). With demographic data for each of these categories, the study could further describe the pathways of drinking during pregnancy. I contest that, in the light of the data presented in the current study, drinking profiles and drinking occasions are important areas for future research. Better understanding of the pathways is especially important to identify women who remain heavy drinkers and those who might regress to heavy drinking later in pregnancy.

#### ***7.4.2 Alcohol, risk, and culture***

Researchers have argued that drinking during pregnancy has increasingly become a priority on the maternal health agenda, where the precautionary principle is key (Leppo, Hecksher & Tryggvesson, 2014). Such development over time has not been without criticism. Some researchers have argued that without clear evidence that small to moderate amounts harm the foetus, it is ethically wrong to withhold women's right to decide over their own bodies (Gavaghan, 2009; Lupton, 2012). The concept of risk is therefore central

in the discourse of pregnant women's alcohol use, and the question is whether women are unaware of the risks with drinking. The current study suggests that some women were well aware of FAS, or FASD, yet women who drank appeared to rely on their own instinct of what level of consumption felt safe. Information can be viewed as one of many factors that influence behaviour, as beliefs and values contribute to how people process available information and translate that into behaviour (Naidoo & Wills, 2000).

Ford (2013) explored alcohol use during pregnancy among Scottish women and disagreed with the idea that education on the risks of drinking would discourage women from drinking. She acknowledged in her thesis that values and beliefs shape interpretation of risk and that "women do not need to be 'educated' about the risks of alcohol [...] for the women in this study drinking is an acceptable behaviour if it is controlled" (p.255). As women had a sense that low to moderate consumption was not risky drinking, more information would not influence them to abstain from alcohol (Ford, 2013). This relates to theories of how people understand and infer risks associated with certain behaviours. According to Slovic and Peters (2006), risk perception has two components; feelings (including instinctive and intuitive reactions), and analysis of the risk (based on reason, logic, and scientific deliberation). I argue that based on the results from the current research there are cultural differences in risk perception, which influence women's decisions about drinking during pregnancy. Swedish women did not need to analyse the risk in relation to scientific evidence, as their instinctive reactions and what they knew from the social environment around them was enough to discourage them from drinking. This was different for English women, evident when they discussed the guidelines and their knowledge of some of the risks with prenatal alcohol use. Evidence was discussed, or the lack thereof and women who drank described that some alcohol consumption was acceptable. The findings provide insights into the cultural differences in the interpretation of the precautionary principle (Gardiner, 2006), which since January 2016 is central in official recommendations about alcohol and pregnancy in both England and Sweden. Following the new proposed guidance from the CMOs in the UK, which harmonises the advice to English women with that of Scottish women (NHS Health Scotland, 2016), studies need to follow up changes in attitudes and practices over time.

Similarly to what Ford (2013) addressed in her thesis, specifically the acceptability of controlled drinking, sophistication in drinking wine was part of narratives in the current study. This included aspects of pleasure related to drinking and risk perception was

evaluated in relation to ‘others’. I argue that some parents’ arguments of controlled behaviour are incorporated in a wider cultural awareness of risk. The risks for negative outcomes from low to moderate drinking are unclear, as reported by women in Study II, and ambiguity further add to the interpretation of what the level of risk might be. Beck (2007) argued that living in a “world risk society” in modern society does not equate knowledge but rather “non-knowing”.

*World risk society is a non-knowledge society in a very precise sense. In contrast to the premodern era it cannot be overcome by more and better knowledge, more and better science; rather precisely the opposite holds: it is the product of more and better science. Non-knowledge rules the world risk society. Hence, living in the milieu of manufactured non-knowledge means seeking unknown answers to questions that nobody can clearly formulate.*

(Beck, 2007, p. 115)

What is important in relation to the current research is what people do with non-knowledge. In this instance, Swedish parents and midwives interpreted the uncertainty of low and moderate drinking as any alcohol can harm. I argue that this is part of a wider set of social norms around alcohol and pregnancy, and most likely also motherhood and health behaviour as pointed out by for example Leppo, Hecksher and Tryggvesson (2014). This was also clear in parents’ focus on the rights of the foetus in their narratives around moral discourses of drinking during pregnancy. English parents, on the other hand, evaluated uncertainty primarily that small amounts most likely are not harmful, yet women who abstained still emphasised that it is best to not take any chances. Perhaps this reasoning around small amounts is why English parents overall put greater focus on women’s rights to make their own decisions. The debate around risk related to drinking during pregnancy is certainly not settled, but for future research I believe that it is important to further explore the variations in risk perceptions within a wider set of cultural norms.

## **7.5 Strengths and limitations**

This research has several limitations that need to be acknowledged, in addition to the limitations of each individual study as presented in Chapter 4–6. Firstly, one of the difficulties with MMR is to ensure rigour in each component of the study. My limited experience with MMR was a weakness in this aspect. However, as the research problem is

complex, a mixed methods design was most suitable. One strength is therefore that the findings have provided new insights into how women conceptualise drinking during pregnancy, and how social aspects are important considerations for midwives to address in maternity services. The quantitative findings, indicating that alcohol habits before pregnancy is a public health issue in itself and may be significant in relation to pregnancy, were further contextualised by the qualitative findings. Previous research has addressed the issue of pre-pregnancy alcohol use quantitatively but to my knowledge this type of research has not been triangulated with qualitative data.

As noted in Chapter 3, there are epistemological tensions regarding the use of MMR, and while it has been argued that the choice of methodology is theoretically justified it is important to highlight that the criticisms of MMR as a research paradigm of its own right need to be acknowledged. Furthermore, this research focused on women who attend antenatal care but do not have alcohol misuse issues or are alcohol dependent. The conceptualisation of drinking during pregnancy among women who may have multiple social issues, in addition to a substance misuse problem, is likely to be different to women who choose to have a small amount of alcohol. The results presented here can therefore not be interpreted for that group of women. However, having a well-developed antenatal care system that addresses alcohol and facilitates disclosure is important to ensure that women who do have alcohol misuse problems are provided appropriate specialist services.

## **7.6 Conclusions**

The final chapter of this thesis has presented the integrated analysis of findings from this study, which aimed to increase the understanding of alcohol use during pregnancy by exploring maternal drinking during pregnancy through a cross-cultural lens in relation to attitudes and practices of prenatal alcohol use in England and Sweden. Specifically, the key conclusions based on the overall research questions are summarised below.

### **Research question 1: What is the prevalence of retrospective self-reported alcohol use during pregnancy in England and Sweden?**

The results showed that alcohol use during pregnancy was more common in England, however midwives in both countries argued that alcohol use during pregnancy is very uncommon.



**Research question 2: What factors are associated with continued alcohol use?**

Higher frequency of drinking before pregnancy was associated with greater likelihood of continued alcohol use, as was advice that small amounts were acceptable to consume. However, interviews with women indicated that also women who reported that alcohol was a significant part of their life before pregnancy. The accounts did not clearly state that frequent drinking necessarily influenced continued use, but women who did continue to drink did so in a familiar context such as special occasions or in company of their partner.

**Research question 3: What are parents' attitudes and practices of alcohol use during pregnancy in England and Sweden?**

The findings suggested that there are cultural differences in attitudes towards drinking during pregnancy. Swedish parents and midwives were more concerned about risks from any level of drinking. English parents and midwives were aware that the evidence around risks with drinking small amounts was not clear, and therefore questioned whether it would cause harm to drink small amounts.

**Research question 4: What are midwives' perceptions of pregnancy drinking guidelines and women's alcohol use during pregnancy in England and Sweden?**

The ambiguity of the evidence, or the more so the uncertainty of risk of harm, was by Swedish midwives interpreted as that any alcohol is harmful. English midwives expressed similar scepticism as the parents in Study II, but were clear that abstinence advice was what they provided to expecting women or couples.

**Research question 5: What are midwives' practices of providing alcohol advice in antenatal care?**

Across the two countries, midwives believed that pregnant women should be advised to consume no alcohol, as shown in Study III. However, it was clear from the other two studies that particularly in England the 'low risk' advice in the NICE guidelines was given to some women.

In conclusion, clear abstinence policy may encourage women to abstain from alcohol during pregnancy. However the complexities related to how alcohol use during pregnancy is conceptualised requires training and resources for midwives to facilitate informative and supportive conversations with women and their partners.

## **7.7 Areas for future research**

Reflection upon the results from this research is the need for comparable data that can further develop cross-national comparisons on alcohol use during pregnancy. Currently we rely on data from individual studies, which all define drinking in different ways. For countries that change their drinking guidelines, this type of data would be invaluable to study changes in prevalence of drinking. Future research should further explore the best way of assessing pregnant women's alcohol use is. The AUDIT tool has shown good results on pregnant populations (Burns, Gray & Smith, 2010), and the current study shows that Swedish midwives perceive it a useful tool. In the literature, studies have compared prevalence of alcohol use during pregnancy (O'Keeffe et al., 2015), but practices for assessing women's alcohol habits clearly vary between countries.

For the whole field to move forward, including research on outcomes from drinking during pregnancy, better data are needed. AUDIT has been shown to be an appropriate tool to use to screen for alcohol use during pregnancy (Burns, Gray & Smith, 2010) and the current study indicates that it is an accepted and used tool by Swedish midwives, but more research on the most appropriate way to assess women's alcohol use is needed. Research has suggested that levels of drinking obtained from self-reports are much lower than when compared with biomarkers (Lange et al., 2014). With such evidence it is important to further elucidate how to support midwives to have good conversations with women that encourage honest reports of alcohol use.

Further research is also needed to explore the interpretation and implementation of official pregnancy drinking guidelines as England in the new recommendations from the UK's CMOs have moved towards a complete abstinence approach. In such an approach, individual beliefs as well as social norms should be integrated, in order to develop public health information and design effective interventions.

Finally, the findings of this research also create new questions on the advice given by midwives. Further research is needed on how the type of advice influence women's drinking during pregnancy. Specifically, how midwives address alcohol is important (in regards to assessment using formal screening tools or general questions) and also to separate between drinking before and after pregnancy recognition.

## 7.8 Researcher reflections

Qualitative research, as has been highlighted earlier in this thesis, is subjective and the researcher is closer to the data than in quantitative research (Bryman, 2008; Green & Thorogood, 2014). This research has required reflection upon my own position in relation to the topic studied. I believe that my background as a young woman with no children of my own contributed to the research by allowing me to approach the subject without any pre-determined views on health behaviour during pregnancy. This may also have been a limitation, as I may have lacked understanding of certain aspects of the topic, though my feeling was rather that this was an advantage during the interviews. I personally learned about the participants' experiences of being pregnant and entering parenthood. By having no preconceived ideas of pregnancy, or maternity services, parents seemed encouraged to share their experiences. The same was true in the discussions with the midwives, while I could ask questions as a researcher and try to apply context to the women's stories I had no bias in how I perceived the services run.

Within prevention research, from the perspective of community prevention programmes, there are different roles that the researcher can take on. The role has impact on the entire research process (Holmila et al., 2008), and this is likely to be true also for this more traditional researcher-interviewee relationship in the current study. According to Holmila et al. (2008) one role the researcher can take on is the 'un-intrusive observer' within community action research, where "care is taken by the researcher or research team to avoid influencing or changing the natural progression or flow of the community action project" (p.413). In a similar manner I tried to let the parents and midwives lead the interview in regards to sharing their knowledge. On a few occasions women asked me questions about the evidence of drinking, which I tried to answer at the end of the interview and instruct the interviewee to continue telling me about their experiences.

There are also important reflections to be made on my own views of alcohol use during pregnancy before and after this research was conducted. Approaching this topic, I had never challenged my own beliefs of whether a woman should or should not drink alcohol during pregnancy. Like many of my participants, I assumed it was common knowledge to abstain from alcohol during pregnancy, perhaps reflecting the social norms in Sweden. I am thankful that this research has challenged my own views, and forced me to see this through multiple lenses. Primarily, as a researcher I believe that evidence is key and once

one attempts to untangle the evidence around risks with drinking during pregnancy, it becomes clear that this topic is rather complex. I have arrived at the conclusion that there indeed is a spectrum of drinking during pregnancy, and that some women drink under the perception that their behaviour is not out of control or risky, due to the context in which it occurs. On a personal level, I would make the decision not to drink any alcohol if I were pregnant. Like many of my participants I do not perceive alcohol to be a significant part of my life, and would therefore choose not to.

Finally, one major learning point regarding the research process was the value of the qualitative findings. In hindsight, the research would have benefited from a sequential design, whereby the qualitative interviews were conducted to inform the development of the questionnaire. Although a pilot study was conducted, which subsequently led to excluding several items from the questionnaires, this alternative design would have improved and shortened the questionnaire significantly. This may have improved response rates as the questionnaire took at least 25 minutes to complete due to the in-depth retrospective questions regarding alcohol consumption, as well as health during pregnancy. Overall, conducting this research and writing the thesis has indeed developed me as a researcher and I believe that while there is much more I need to learn in this field, I have taken ownership of my research. This is demonstrated in the number of conferences I have presented at, and been invited to present at, as well as an invitation to share my research in 'Fetal Alcohol Forum' (Schölin, 2015). It is clear that this is an area of interest within the field, but I believe that I have contributed with a novel approach of cross-cultural comparisons. Besides further developing my skills in research methods and research design, I believe that more importantly I have developed skills in critical appraisal of research and critical thinking of the 'wider picture' of alcohol research and alcohol policy. As has been presented throughout this section, there were few themes that were in full agreement across studies. This highlights the need for more qualitative research in this area, to inform the development of future surveys.

## **7.9 Recommendations**

This research indicates that abstinence policy may be an important influence in creating a common perception of no drinking during pregnancy. While it is important to acknowledge the current evidence base, and the lack of consistent and clear evidence of a threshold for harm caused by alcohol, abstinence advice appears to be the best choice in

the aspect of creating clarity around what the advice is. In addition to national guidelines that promote abstinence, the aspects of midwives' communication of the guidelines in practice are important. The findings indicate that there is dissonance in the perception of what recommendations midwives are giving in English maternity services from parents and midwives. The midwives included in this research were clear that abstinence was what they recommended, whereas parental experiences varied. In Sweden the two perspectives of provision of recommendations were in agreement. Further research is needed to explore, more extensively, midwives' beliefs around alcohol and investigate the best ways to ensure consistent communication across the profession.

The cross-cultural perspective allowed for observations of factors in the antenatal care system that appeared to have contributed to the more coherent view of alcohol advice among parents. Based on the findings it is recommended that; i) maternity services use a structured screening tool to discuss pre-pregnancy and pregnancy drinking habits, ii) midwives are regularly provided updated information about alcohol and pregnancy and how to best address it with their patients, iii) alcohol is discussed in a wider context to explore women's social context and potential internal or external pressure to drink, iv) alcohol is routinely discussed throughout the pregnancy as well as at the booking appointment.

Incorporating questions about drinking before pregnancy, in wider context than just assessing quantity – pattern before pregnancy (i.e. binge drinking) appears to be important. Midwives should, in line with the WHO guidelines (WHO, 2010), ask women about their alcohol use throughout the entire pregnancy. Addressing drinking habits before pregnancy (and whether these were shared with the partner) is important. When discussing prenatal alcohol use with women and their partners, midwives should keep in mind of the wider social contexts that women may drink and that a simple “are you currently drinking?” question may not suffice to engage a discussion. The conversation should address if there are situation where the woman might drink, whether her partner will support her, and if there are people around her that might encourage her to drink. A structured screening tool addressing alcohol use before pregnancy can allow midwives to have a conversation with women about their alcohol use. As per recommendation from Study I, midwives in England should consider trialling routine use of AUDIT for pre-pregnancy drinking. Midwives in both countries should consider asking women about occasional drinking, such as at special occasions. Midwives in both countries, but specifically in Sweden, should be

aware of the social norms and stigma around drinking during pregnancy and appreciate that women may not report occasional drinking.

Finally, the findings have importance for policy makers. Abstinence policy may be the simplest message to give pregnant women. However, considering the recent change in the CMO recommendations for drinking guidelines, the rationale needs to be clearly outlined. In disseminating these new proposed guidelines midwives and other health professionals will need updated information about the research underpinning the new recommendations. In Sweden it was clear that recent decades' investment in the 'Risk Drinking Project' in primary care, including antenatal care, had provided good training on the subject and occasional meetings allowed for updates or discussions around perceived challenges. English midwives were not required to update their training each year as they were required to do for smoking. In addition to training, the framing of health education needs to be considered. It needs to be recognised that in cultures where parents consider the woman's autonomy as well as the baby's health, too strong focus on the foetus might be perceived as victim blaming instead of informing and empowering women.

## References

- Abel, E. L. (1981) A Critical Evaluation of the Obstetric Use of Alcohol in Preterm Labor. *Drug Alcohol Dependence*; 7(4), 367–378.
- Abel, E. L. & Hannigan, J. H. (1995) Maternal Risk Factors in Fetal Alcohol Syndrome: Provocative and Permissive Influences. *Neurotoxicology and Teratology*; 17(4), 445–462.
- Abrahamsson, A., Springett, J., Karlsson, L., Håkansson, A. & Ottosson, T. (2005) Some Lessons from Swedish Midwives' Experiences of Approaching Women Smokers in Antenatal Care. *Midwifery*; 21(4), 335–345.
- Alberta Partnership on Foetal Alcohol Syndrome (2003) Guideline for the diagnosis of fetal alcohol syndrome (FAS). *The Canadian Child and Adolescent Psychiatry Review*; 12(3), 81–86.
- Ally, A. K., Lovatt, M., S. Meier, P., Brennan, A. & Holmes, J. (2016) Developing a Social Practice-Based Typology of British Drinking Culture in 2009-2011: Implications for Alcohol Policy Analysis. *Addiction*; 111(9), 1568-1579.
- Alvik, A., Haldorsen, T., Groholt, B. & Lindemann, R. (2006a) Alcohol Consumption Before and During Pregnancy Comparing Concurrent and Retrospective Reports. *Alcoholism: Clinical and Experimental Research*; 30(3), 510–515.
- Alvik, A., Heyerdahl, S., Haldorsen, T. & Lindemann, R. (2006b) Alcohol Use before and during Pregnancy: A Population-Based Study. *Acta Obstetrica et Gynecologica Scandinavica*; 85(11), 1292–1298.
- Anderson, A., Hure, A., Forder, P., Powers, J., Kay-Lambkin, F. & Loxton, D. (2013) Predictors of Antenatal Alcohol Use among Australian Women: A Prospective Cohort Study. *BJOG*; 120(11), 1366–1374.
- Anderson, A., Hure, A., Forder, P., Powers, J., Kay-Lambkin, F. & Loxton, D. (2014a) Risky Drinking Patterns Are Being Continued into Pregnancy: A Prospective Cohort Study. *PLoS ONE*; 9(1), e86171.
- Anderson, A., Hure, A., Kay-Lambkin, F. & Loxton, D. (2014b) Women's Perceptions of Information about Alcohol Use during Pregnancy: A Qualitative Study. *BMC Public Health*; 14(1), 1048.
- Anderson, A., Hure, A., Powers, J., Kay-Lambkin, F. & Loxton, D. (2012) Determinants of Pregnant Women's Compliance with Alcohol Guidelines: A Prospective Cohort Study. *BMC Public Health*; 12, 777.
- Armstrong, E. M. & Abel, E. L. (2000) Fetal Alcohol Syndrome: The Origins of a Moral

- Panic. *Alcohol and Alcoholism*; 35(3), 276–282.
- Attride-Stirling, J. (2001) Thematic Networks: An Analytic Tool for Qualitative Research. *Qualitative Research*; 1(3), 385–405.
- Babor, T. (2010) *Alcohol : No Ordinary Commodity: Research and Public Policy*. Oxford : Oxford University Press.
- Babor, T. F. & Higgins-Biddle, J. C. (2001) *Brief Intervention for Hazardous and Harmful Drinking - A Manual for Use in Primary Care*. Geneva: World Health Organization.
- Baggot, R. (2011) *Public Health: Policy and Politics*. Hamshire: Palgrave Macmillan.
- Bailey, L. (1999) Refracted Selves? A Study of Changes in Self-Identity in the Transition to Motherhood. *Sociology*; 33(2), 335–352.
- Bakhireva, L. N., Wilsnack, S. C., Kristjanson, A., Yevtushok, L., Onishenko, S., Wertelecki, W. & Chambers, C. (2011) Paternal Drinking, Intimate Relationship Quality, and Alcohol Consumption in Pregnant Ukrainian Women. *Journal of Studies on Alcohol and Drugs*; 72(4), 536–544.
- Balachova, T., Bonner, B., Chaffin, M., Bard, D., Isurina, G., Tsvetkova, L. & Volkova, E. (2011) Women's Alcohol Consumption and Risk for Alcohol-Exposed Pregnancies in Russia. *Addiction*; 107(1), 109–117.
- Barry, K. L., Caetano, R., Chang, G., DeJoseph, M. C., Miller, L. A., O'Connor, M. J., Olson, H. C., Floyd, R. L., Weber, M. K., DeStefano, F., Dolina, S. & Leeks, K. (2009) *Reducing Alcohol-Exposed Pregnancies: A Report of the National Task Force on Fetal Alcohol Syndrome and Fetal Alcohol Effect*. Atlanta: Centre for Disease Control and Prevention [online] Available at: <https://www.cdc.gov/ncbddd/fasd/documents/redalcohpreg.pdf> [Accessed 16<sup>th</sup> October 2016].
- Bayer, R. (2008) Stigma and the Ethics of Public Health: Not Can We but Should We. *Social Science & Medicine*; 67(3), 463–472.
- Bazzo, S., Battistella, G., Riscica, P., Moino, G., Marini, F., Geromel, M. & Czerwinsky, L. (2012) Evaluation of the Impact of the Image Used in a Communication Campaign to Raise Awareness about the Effects of Alcohol Use during Pregnancy. *Alcohol and Alcoholism*; 47(6), 657–662.
- Beck, U. (2007) *World at Risk*. Cambridge: Polity Press.
- Beldon, A. & Crozier, S. (2005) Health Promotion during pregnancy: The Role of the Midwife. *The Journal of the Royal Society for the Promotion of Health*; 125(5), 216–220.
- Bell, K., McNaughton, D. & Salmon, A. (2009) Medicine, Morality and Mothering: Public



- Health Discourses on Foetal Alcohol Exposure, Smoking around Children and Childhood Overnutrition. *Critical Public Health*; 19(2), 155–170.
- Bell, K., Salmon, A., Bowers, M., Bell, J. & McCullough, L. (2010) Smoking, Stigma and Tobacco ‘Denormalization’: Further Reflections on the Use of Stigma as a Public Health Tool. A Commentary on Social Science & Medicine’s Stigma, Prejudice, Discrimination and Health Special Issue (67:3). *Social Science & Medicine*; 70(6), 795–799.
- Bellis, M. A., Hughes, K., Calafat, A., Juan, M., Ramon, A., Rodriguez, J. A., Mendes, F., Schnitzer, S. & Phillips-Howard, D. (2008) Sexual Uses of Alcohol and Drugs and the Associated Health Risks: A Cross Sectional Study of Young People in Nine European Cities. *BMC Public Health*; 8(1), 1–11.
- Bellis, M., Hughes, K., Jones, L., Morleo, M., Nicholls, J., McCoy, E., Webster, J. & Sumnall, H. (2015) Holidays, Celebrations, and Commiserations: Measuring Drinking during Feasting and Fasting to Improve National and Individual Estimates of Alcohol Consumption. *BMC Medicine*; 13, 113.
- Berridge, V. (2013) *Demons - Our Changing Attitudes to Alcohol, Tobacco and Drugs*. Oxford: Oxford University Press.
- Biro, M. A. (2011) What Has Public Health Got to Do with Midwifery? Midwives’ Role in Securing Better Health Outcomes for Mothers and Babies. *Women and Birth*; 24(1), 17–23.
- Bogren, A. (2011) Gender and Alcohol: The Swedish Press Debate. *Journal of Gender Studies*; 20(2), 155–169.
- Borsari, B. & Carey, K. B. (2003) Descriptive and Injunctive Norms in College Drinking: A Meta-Analytic Integration. *Journal of Studies on Alcohol*; 64(3), 331–41.
- Bortes, C., Geidne, S. & Eriksson, C. (2015) Preventing Alcohol Consumption during Pregnancy: A Randomized Controlled Trial. *Health*; 7(3), 289–299.
- Boseley, S. (2013) Minimum Unit Price for Alcohol Proposal Shelved. *The Guardian* [online] Available at: <https://www.theguardian.com/society/2013/jul/17/minimum-unit-price-alcohol-shelved> [Accessed: 16<sup>th</sup> October, 2016].
- Braun, V. & Clarke, V. (2006) Using Thematic Analysis in Psychology. *Qualitative Research in Psychology*; 3(2), 77–101.
- British Medical Association (BMA) (2015) *Alcohol and Pregnancy – Preventing and Managing Fetal Alcohol Spectrum Disorders*. London: British Medical Association [online] Available at: <file:///C:/Users/scholinlis/Downloads/Fetal-alcohol-spectrum-disorders-report-Feb2016.pdf> [Accessed 16<sup>th</sup> October 2016].

- Bristol Online Surveys [online] Available at: <https://www.onlinesurveys.ac.uk> [Accessed: 22<sup>nd</sup> May 2016].
- Bronfenbrenner, U. (1979) *The Ecology of Human Development: Experiments by Nature and Design*. Harvard University Press.
- Brooke, O. G., Anderson, H. R., Bland, J. M., Peacock, J. L. & Stewart, C. M. (1989) Effects on Birth Weight of Smoking, Alcohol, Caffeine, Socioeconomic Factors, and Psychosocial Stress. *BMJ*; 298, 795–801.
- Brooks, O. (2011) ‘Guys! Stop Doing It!’: Young Women’s Adoption and Rejection of Safety Advice When Socializing in Bars, Pubs and Clubs. *British Journal of Criminology*; 51(4), 635–651.
- Brooks, O. (2013) Interpreting Young Women’s Accounts of Drink Spiking: The Need for a Gendered Understanding of the Fear and Reality of Sexual Violence. *Sociology*; 48(2), 300-316.
- Broom, D. (2008) Hazardous Good Intentions? Unintended Consequences of the Project of Prevention. *Health Sociology Review*; 17(2), 129–140.
- Bryman, A. (2008) *Social Research Methods*. Oxford: Oxford University Press.
- Burnard, P., Gill, P., Stewart, K., Treasure, E. & Chadwick, B. (2008) Analysing and Presenting Qualitative Data. *British Dental Journal*; 204(8), 429–432.
- Burns, E., Gray, R. & Smith, L. A. (2010) Brief Screening Questionnaires to Identify Problem Drinking during Pregnancy: A Systematic Review. *Addiction*; 105(4), 601–14.
- Calabro, K., Taylor, W. C. & Kapadia, A. (1996) Pregnancy, Alcohol Use and the Effectiveness of Written Health Education Materials. *Patient Education and Counseling*; 29(3), 301–309.
- Caetano, R., Ramisetty-Mikler, S., Floyd, L. R. & McGrath, C. (2006) The Epidemiology of Drinking Among Women of Child-Bearing Age. *Alcoholism: Clinical and Experimental Research*; 30(6), 1023-30.
- Calhoun, F. & Warren, K. (2007) Fetal Alcohol Syndrome: Historical Perspectives. *Neuroscience and Biobehavioral Reviews*; 31(2), 168–171.
- Callinan, S. & Ferris, J. (2014) Trends in Alcohol Consumption during Pregnancy in Australia, 2001–2010. *The International Journal of Alcohol and Drug Research*; 3(1), 17-24.
- Cannon, M., Guo, J., Denny, C., Green, P., Miracle, H., Snizek, J. & Floyd, L. R. (2015) Prevalence and Characteristics of Women at Risk for an Alcohol-Exposed Pregnancy (AEP) in the United States: Estimates from the National Survey of Family Growth.

- Carpenter, W. T., Doku, V. & Tennakoon, L. (1999) The Challenge to Psychiatry as Society's Agent for Mental Illness Treatment and Research. *The American Journal of Psychiatry*; 156(9), 1307–10.
- Cash, S. J. & Wilke, D. J. (2003) An Ecological Model of Maternal Substance Abuse and Child Neglect: Issues, Analyses, and Recommendations. *American Journal of Orthopsychiatry*; 73(4), 392–404.
- Casswell, S., Huckle, T. & Pledger, M. (2002) Survey Data Need Not Underestimate Alcohol Consumption. *Alcoholism, Clinical and Experimental Research*; 26(10), 1561–1567.
- Cha, E. S., Kim, K. H. & Erlen, J. A. (2007) Translation of Scales in Cross-Cultural Research: Issues and Techniques. *Journal of Advanced Nursing*; 58(4), 386–395.
- Chamberlain, C., O'Mara-Eves, A., Oliver, S., Caird, J. R., Perlen, S. M., Eades, S. J. & Thomas, J. (2013) Psychosocial Interventions for Supporting Women to Stop Smoking during pregnancy. *Cochrane Database of Systematic Reviews*; 10, Cd001055.
- Champion, V. L. & Sugg Skinner, C. (2008) The Health Belief Model, in: Glanz, K., Rimer, B. K., and Viswanath, K. (Eds.), *Health Behaviour and Health Education - Theory, Research and Practice*. San Francisco: Jossey-Bass (pp. 45–66).
- Chang, G. (2001) Alcohol-Screening Instruments for Pregnant Women. *Alcohol Res Health*; 25(3), 204–209.
- Chang, G., McNamara, T. K., Orav, E. J., Koby, D., Lavigne, A., Ludman, B. Vincitorio, N. A. & Wilkins-Haug, L. (2005) Brief Intervention for Prenatal Alcohol Use: A Randomized Trial. *Obstetrics & Gynecology*; 105(5), 991–998.
- Chang, G., McNamara, T. K., Orav, E. J. & Wilkins-Haug, L. (2006) Alcohol Use by Pregnant Women: Partners, Knowledge, and Other Predictors. *Journal of Studies on Alcohol*; 67(2), 245–251.
- Chang, G., Wilkins-Haug, L., Berman, S., Goetz, M. A., Behr, H. & Hiley, A. (1998) Alcohol Use and Pregnancy: Improving Identification. *Obstetrics and Gynecology*; 91(6), 892–898.
- Chiaffarino, F., Parazzini, F., Chatenoud, L., Ricci, E., Sandretti, F., Cipriani, S. Caserta, D. & Fedele, L. (2006). Alcohol Drinking and Risk of Small for Gestational Age Birth. *European Journal of Clinical Nutrition*; 60(9): 1062–6.
- Comasco, E., Hallberg, G., Helander, A., Orelund, L. & Sundelin-Wahlsten, V. (2012) Alcohol Consumption among Pregnant Women in a Swedish Sample and Its Effects

- on the Newborn Outcomes. *Alcoholism, Clinical and Experimental Research*; 36(10), 1779–86.
- Cooper, C. (2013) Pregnant Women Told Moderate Drinking Will Not Harm the Baby. *The Independent* [online] Available at: <http://www.independent.co.uk/life-style/health-and-families/health-news/pregnant-women-told-moderate-drinking-will-not-harm-the-baby-8662605.html> [Accessed: 18 October, 2016].
- Crawford-Williams, F., Fielder, A., Mikocka-Walus, A. & Esterman, A. (2015a) A Critical Review of Public Health Interventions Aimed at Reducing Alcohol Consumption And/or Increasing Knowledge among Pregnant Women. *Drug and Alcohol Review*; 34(2), 154–61.
- Crawford-Williams, F., Fielder, A., Mikocka-Walus, A., Esterman, A. & Steen, M. (2016) A Public Health Intervention to Change Knowledge, Attitudes and Behaviour Regarding Alcohol Consumption during pregnancy. *Evidence Based Midwifery*; 14(1), 4–10.
- Crawford-Williams, F., Steen, M., Esterman, A., Fielder, A. & Mikocka-Walus, A. (2015b) ‘My Midwife Said That Having a Glass of Red Wine Was Actually Better for the Baby’: A Focus Group Study of Women and Their Partner’s Knowledge and Experiences Relating to Alcohol Consumption during pregnancy. *BMC Pregnancy and Childbirth*; 15, 79.
- Crawford-Williams, F., Steen, M., Esterman, A., Fielder, A. & Mikocka-Walus, A. (2015c) ‘If You Can Have One Glass of Wine Now and Then, Why Are You Denying That to a Woman with No Evidence’: Knowledge and Practices of Health Professionals Concerning Alcohol Consumption during Pregnancy. *Women and Birth*; 28(4), 329–335.
- Creswell, J. W. (2012) *Qualitative Inquiry and Research Design: Choosing Among Five Approaches*. London: Sage Publications.
- Creswell, J. W. & Plano Clark, V. L. (2011) *Designing and Conducting Mixed Methods Research*. London: SAGE Publications.
- Day, K., Gough, B. & McFadden, M. (2004) ‘Warning! Alcohol Can Seriously Damage Your Feminine Health’. *Feminist Media Studies*; 4(2): 165–183.
- Denzin, N. (2012) Triangulation 2.0. *Journal of Mixed Methods Research*; 6(2), 80-88.
- Department of Health (2007) *The Pregnancy Book* [online] Available at: [http://webarchive.nationalarchives.gov.uk/+/www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH\\_074920](http://webarchive.nationalarchives.gov.uk/+/www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_074920) [Accessed: 18<sup>th</sup> October, 2016].

- Department of Health (2008) *Safe, Sensible, Social - Consultation on Further Action*. London: Department of Health [online] Available at: <http://lx.iriss.org.uk/sites/default/files/resources/Safe%20sensible.pdf> [Accessed: 18<sup>th</sup> October, 2016].
- Department of Health (2010) *Healthy Lives, Healthy People: Our Strategy for Public Health in England*. London: Department of Health [online] Available at: [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/216096/dh\\_127424.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/216096/dh_127424.pdf) [Accessed: 18<sup>th</sup> October, 2016].
- Department of Health (2015) *Alcohol Guidelines Review – Report from the Guidelines Development Group to the UK Chief Medical Officers*. London: Department of Health [online] Available at: [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/545739/GDG\\_report-Jan2016.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/545739/GDG_report-Jan2016.pdf) [Accessed: 18<sup>th</sup> October, 2016].
- Dewey, J. (1941) Propositions, Warranted Assertibility, and Truth. *The Journal of Philosophy*; 38(7), 169-186.
- Diekman, S. T., Floyd, R. L., Decoufle, P., Schulkin, J., Ebrahim, S. H. & Sokol, R. J. (2000) A Survey of Obstetrician-Gynecologists on Their Patients' Alcohol Use during Pregnancy. *Obstetrics and Gynecology*; 95(5), 756–763.
- Doi, L. K. (2012) *Screening and Alcohol Brief Interventions in Antenatal Care: A Realistic Evaluation*. Ph. D. thesis. University of Stirling.
- Doi, L., Cheyne, H. & Jepson, R. (2014) Alcohol Brief Interventions in Scottish Antenatal Care: A Qualitative Study of Midwives' Attitudes and Practices. *BMC Pregnancy and Childbirth*; 14, 170.
- Dott, M., Rasmussen, S. A., Hogue, C. J., Reefhuis, J. & National Birth Defects Prevention Study (2010) Association between Pregnancy Intention and Reproductive-Health Related Behaviors before and after Pregnancy Recognition, National Birth Defects Prevention Study, 1997-2002. *Maternal and Child Health Journal*; 14(3), 373–81.
- Duncan, E., Forbes-McKay, K. & Henderson, S. (2012) Alcohol Use During Pregnancy : An Application of the Theory of Planned Behavior. *Journal of Applied Social Psychology*; 42(8), 1887–1903.
- Edvardsson, K., Ivarsson, A., Eurenus, E., Garvare, R., Nystrom, M., Small, R. & Mogren, I. (2011) Giving Offspring a Healthy Start: Parents' Experiences of Health Promotion and Lifestyle Change during Pregnancy and Early Parenthood. *BMC Public Health*; 11, 936.
- Eggert, J., Theobald, H. & Engfeldt, P. (2004) Effects of Alcohol Consumption on Female

- Fertility during an 18-Year Period. *Fertility and Sterility*; 81(2), 379–83.
- Ekholm, O., Strandberg-Larsen, K. & Gronbaek, M. (2011) Influence of the Recall Period on a Beverage-Specific Weekly Drinking Measure for Alcohol Intake. *European Journal of Clinical Nutrition*; 65(4), 520–525.
- Elek, E., Harris, S. L., Squire, C. M., Margolis, M., Weber, M. K., Dang, E. P. & Mitchell, B. (2013) Women's Knowledge, Views, and Experiences Regarding Alcohol Use and Pregnancy: Opportunities to Improve Health Messages. *American Journal of Health Education*; 44(4), 177–190.
- Emslie, C., Hunt, K. & Lyons, A. (2013) The Role of Alcohol in Forging and Maintaining Friendships amongst Scottish Men in Midlife. *Health Psychology*; 32(1), 33–41.
- Emslie, C., Hunt, K. & Lyons, A. (2015) Transformation and Time-out: The Role of Alcohol in Identity Construction among Scottish Women in Early Midlife. *The International Journal on Drug Policy*; 26(5), 437–45.
- Engel, L. G. (1989) The Need for a New Medical Model: A Challenge for Biomedicine. *Holistic Medicine*; 4(1), 37–53.
- Ethen, M. K., Ramadhani, T. A., Scheuerle, A. E., Canfield, M. A., Wyszynski, D. F., Druschel, C. M. & Romitti, P. A. (2009) Alcohol Consumption by Women before and during Pregnancy. *Maternal and Child Health Journal*; 13(2), 274–85.
- Eurostat (2016) *Share of Live Births Outside Marriage* [online] Available at: <http://ec.europa.eu/eurostat/tgm/table.do?tab=table&init=1&language=en&pcode=tps00018&plugin=1> [Accessed: 11 June 2016]
- Falgreen Eriksen, H. L., Mortensen, E., Kilburn, T., Underbjerg, M., Bertrand, J., Stovring, H., Wimberley, T., Grove, J. & Kesmodel, U. (2012) The Effects of Low to Moderate Prenatal Alcohol Exposure in Early Pregnancy on IQ in 5-Year-Old Children. *BJOG*; 119(10), 1191–1200.
- Farmer, T., Robinson, K., Elliott, S. J. & Eyles, J. (2006) Developing and Implementing a Triangulation Protocol for Qualitative Health Research. *Qualitative Health Research*; 16(3), 377–394.
- Fenwick, J., Bayes, S. & Johansson, M. (2012) A Qualitative Investigation into the Pregnancy Experiences and Childbirth Expectations of Australian Fathers-to-Be. *Sexual & Reproductive Healthcare*; 3(1), 3–9.
- Feodor Nilsson, S., Andersen, P. K., Strandberg-Larsen, K. & Nybo Andersen, A.-M. (2014) Risk Factors for Miscarriage from a Prevention Perspective: A Nationwide Follow-up Study. *BJOG*; 121(11), 1375–1385.
- Field, A. (2009) *Discovering Statistics Using IBM SPSS Statistics*. 3<sup>rd</sup> ed. London: Sage

## Publications.

- Finnbogadottir, H., Crang Svalenius, E. & Persson, E. K. (2003) Expectant First-Time Fathers' Experiences of Pregnancy. *Midwifery*; 19(2), 96–105.
- Fitzgerald, N. & Schölin, L. (2016) Approaches to alcohol screening and brief interventions in antenatal care: the conversation matters. Proceedings of the 13<sup>th</sup> annual conference of INEBRIA. *Addiction Science & Clinical Practice*; 11(Suppl 1), A23.
- Flak, A. L., Su, S., Bertrand, J., Denny, C. H., Kesmodel, U. S. & Cogswell, M. E. (2013) The Association of Mild, Moderate, and Binge Prenatal Alcohol Exposure and Child Neuropsychological Outcomes: A Meta-Analysis. *Alcoholism: Clinical and Experimental Research*; 38(1), 214-226.
- Floyd, R. L., Decoufle, P. & Hungerford, D. W. (1999) Alcohol Use prior to Pregnancy Recognition. *Am J Prev Med*; 17(2), 101–107.
- Ford, K. (2013) *Understanding of the Use of Alcohol during pregnancy Amongst Women in Scotland*. Ph. D. thesis. University of Liverpool.
- France, K. E., Donovan, R. J., Bower, C., Elliott, E. J., Payne, J. M., D'Antoine, H., Bartu, A., O'Leary C., Elliot, E. & Bower, C. (2014) Messages That Increase Women's Intentions to Abstain from Alcohol during Pregnancy: Results from Quantitative Testing of Advertising Concepts. *BMC Public Health*; 14, 30.
- Gardiner, S. M. (2006) A Core Precautionary Principle. *Journal of Political Philosophy*; 14(1), 33–60.
- Gavaghan, C. (2009) 'You Can't Handle the Truth'; Medical Paternalism and Prenatal Alcohol Use. *Journal of Medical Ethics*; 35(5), 300–303.
- Gebara, C. F. de P., Bhona, F. M. de C., Ronzani, T. M., Lourenço, L. M. & Noto, A. R. (2013) Brief Intervention and Decrease of Alcohol Consumption among Women: A Systematic Review. *Substance Abuse Treatment, Prevention, and Policy*; 8, 31.
- Gilinsky, A., Swanson, V. & Power, K. (2011) Interventions Delivered during Antenatal Care to Reduce Alcohol Consumption during Pregnancy: A Systematic Review. *Addiction Research & Theory*; 19(3),
- Gill, P., Stewart, K., Treasure, E. & Chadwick, B. (2008) Methods of Data Collection in Qualitative Research: Interviews and Focus Groups. *British Dental Journal*; 204(6), 291–5.
- Glanz, K., Rimer, B. K. & Viswanath, K. (2008) *Health Behavior and Health Education - Theory, Research and Practice*. San Francisco: Jossey-Bass.
- Golden, J. (2005) Message in a Bottle: The Making of Fetal Alcohol Syndrome.

Massachusetts: Harvard University Press.

- Göransson, M., Magnusson, A., Bergman, H., Rydberg, U. & Heilig, M. (2003) Fetus at Risk: Prevalence of Alcohol Consumption during Pregnancy Estimated with a Simple Screening Method in Swedish Antenatal Clinics. *Addiction*; 98(11), 1513–1520.
- Government Offices of Sweden (2007) *Regeringens Proposition 2007/08:110 - En Förnyad Folkhälsopolitik [Government Bill 2007/08:110 - A Renewed Public Health Policy]* Stockholm: Government Offices of Sweden.
- Government Offices of Sweden (2010) *Regeringens Proposition 2010/11:47 - En Samlad Strategi För Alkohol-, Narkotika-, Dopnings- Och Tobakspolitiken [Government Bill 2010/11:47 - A Coordinated Strategy for Alcohol, Narcotics, Drugs, and Tobacco Politics]* Stockholm: Government Offices of Sweden.
- Government Offices of Sweden (2016) *Regeringens Skrivelse 2015/16:86. En Samlad Strategi För Alkohol-, Narkotika-, Dopnings- Och Tobakspolitiken 2016–2020 [Government writing 2015/16:86 - A Cohesive Strategy for Alcohol, Narcotic Drugs, Doping, and Tobacco 2016-2020]*. Stockholm: Government Offices of Sweden.
- Del Greco, L., Walop, W. & Eastridge, L. (1987) Questionnaire Development: 3. Translation. *CMAJ*; 136(8), 817–818.
- Green, J. & Thorogood, N. (2014) *Qualitative Methods for Health Research*. 3<sup>rd</sup> ed. London: SAGE Publications.
- Guba, E. G. (1981) Criteria for Assessing the Trustworthiness of Naturalistic Inquiries. *Educational Communication and Technology*; 29(2), 79–91.
- Guttman, N. & Salmon, C. T. (2004) Guilt, Fear, Stigma and Knowledge Gaps: Ethical Issues in Public Health Communication Interventions. *Bioethics*; 18(6), 531–552.
- Halim, A., Hasking, P. & Allen, F. (2012) The Role of Social Drinking Motives in the Relationship between Social Norms and Alcohol Consumption. *Addictive Behaviors*; 37(12), 1335–1341.
- Hanson, J. D., Winberg, A. & Elliott, A. (2012) Development of a Media Campaign on Fetal Alcohol Spectrum Disorders for Northern Plains American Indian Communities. *Health Promotion Practice*; 13(6), 842–7.
- Hastings, G., Stead, M. & Webb, J. (2004) Fear Appeals in Social Marketing: Strategic and Ethical Reasons for Concern. *Psychology and Marketing*; 21(11), 961–986.
- Health and Social Care Information Centre (HSCIC) (2014) *Statistics on Alcohol - England 2014* [online] <http://content.digital.nhs.uk/catalogue/PUB15483/alc-eng-2014-rep.pdf> [Accessed: 18<sup>th</sup> October, 2016].
- Health and Social Care Information Centre (HSCIC) (2015) *Statistics on Alcohol -*



- England 2015 [online] Available at:  
<http://content.digital.nhs.uk/catalogue/pub17712/alc-eng-2015-rep.pdf> [Accessed:  
 18<sup>th</sup> October, 2016].
- Heath, D. B. (1991) Women and Alcohol: Cross-Cultural Perspectives. *Journal of Substance Abuse*; 3(2), 175–185.
- Henderson, J., Gray, R. & Brocklehurst, P. (2007) Systematic Review of Effects of Low-Moderate Prenatal Alcohol Exposure on Pregnancy Outcome. *BJOG*; 114(3), 243–252.
- Herzig, K., Danley, D., Jackson, R., Petersen, R., Chamberlain, L. & Gerbert, B. (2006) Seizing the 9-Month Moment: Addressing Behavioral Risks in Prenatal Patients. *Patient Education and Counseling*; 61(2), 228–235.
- Heslehurst, N., Russell, S., McCormack, S., Sedgewick, G., Bell, R. & Rankin, J. (2013) Midwives Perspectives of Their Training and Education Requirements in Maternal Obesity: A Qualitative Study. *Midwifery*; 29(7), 736–744.
- Hibell, B., Guttormsson, U., Ahlström, S., Balakireva, O., Bjarnason, T., Kokkevi, A. & Kraus, L. (2012) *The 2011 ESPAD Report - Substance Use Among Students in 36 European Countries*. Stockholm: The Swedish Council for Information on Alcohol and Other Drugs (CAN) [online] Available at:  
[http://www.can.se/contentassets/8d8cb78bbd28493b9030c65c598e3301/the\\_2011\\_espad\\_report\\_full.pdf](http://www.can.se/contentassets/8d8cb78bbd28493b9030c65c598e3301/the_2011_espad_report_full.pdf). [Accessed: 18 October, 2016].
- HM Government (2012) *The Government's Alcohol Strategy*. London: Home Office [online] Available at:  
[https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/224075/alcohol-strategy.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/224075/alcohol-strategy.pdf) [Accessed: 18 October, 2016].
- Högberg, H., Spak, F. & Larsson, M. (2015) Dialogue between Midwives and Parents-to-Be about Alcohol, from a Life Cycle Perspective—An Intervention Study. *Creative Education*; 6(5), 489–500.
- Holland, K., McCallum, K., Blood, R. W. (2015) *Conversations about Alcohol and Pregnancy*. Canberra: Foundation for Alcohol Research and Education (FARE) [online] Available at: <http://www.fare.org.au/wp-content/uploads/research/Conversations%20about%20alcohol%20and%20pregnancy.pdf> [Accessed: 18<sup>th</sup> October, 2016].
- Holmila, M., Holder, H., Andréasson, S., Baklien, B. & Rossow, I. (2008) Roles for Researchers in Community Action Projects to Prevent Alcohol and Other Drug Problems: Methodological Choices. *Drugs: Education, Prevention and Policy*; 15,

- Holmila, M. & Raitasalo, K. (2005) Gender Differences in Drinking: Why Do They Still Exist? *Addiction*; 100(12): 1763–1769.
- Hutchinson, D., Moore, E. A., Breen, C., Burns, L. & Mattick, R. P. (2013) Alcohol Use during pregnancy: Prevalence and Predictors in the Longitudinal Study of Australian Children. *Drug and Alcohol Review*; 32(5), 475–482.
- Institute for Alcohol Studies (IAS) (2013) *Women and Alcohol - Factsheet*. London,: Institute of Alcohol Studies [online] Available at: <http://www.ias.org.uk/uploads/pdf/Factsheets/Women%20and%20alcohol%20factsheet%20May%202013.pdf> [Accessed: 18<sup>th</sup> October, 2016].
- Jackson, C. & Tinkler, P. (2007) ‘Ladettes’ and ‘Modern Girls’: ‘troublesome’ Young Femininities. *The Sociological Review*; 55(2), 251–272.
- Johnson, T. P. & van De Vijver, F. J. (2003) Social Desirability in Cross-Cultural Research, in: Harkness, J. A., van de Vijver, F. J., and Mohler, P. P. (eds.) *Cross Cultural Survey Methods: Wiley Series in Survey Methodology*. New Jersey: John Wiley & Sons (pp. 195–203).
- Jones, K. L. (2011) The Effects of Alcohol on Fetal Development. *Birth Defects Research (Part C): Embryo Today: Reviews*; 93(3), 3–11.
- Jones, K. L., Smith, D. W., Ulleland, C. N. & Pytkowicz Streissguth, A. (1973) Pattern of malformation in offspring of chronic alcoholic mothers. *Lancet*; 1(7815), 1267–1271.
- Jones, S., Telenta, J., Shorten, A. & Johnson, K. (2011) Midwives and Pregnant Women Talk about Alcohol: What Advice Do We Give and What Do They Receive? *Midwifery*; 27(4), 489–96.
- Kaner, E. F. S., Dickinson, H. O., Beyer, F., Pienaar, E., Schlesinger, C., Campbell, F., Saunders, J. B., Burnand, B. & Heather, N. (2009) The Effectiveness of Brief Alcohol Interventions in Primary Care Settings: A Systematic Review. *Drug and Alcohol Review*; 28(3), 301–323.
- Kesmodel, U. S. (2016) Risks and Guidelines for the Consumption of Alcohol during Pregnancy. *World Journal of Obstetrics and Gynecology*; 5(2), 162.
- Kesmodel, U. S. & Kesmodel, P. S. (2011) Alcohol during pregnancy: Attitudes, Knowledge, and Information Practice Among Midwives in Denmark 2000 to 2009. *Alcoholism: Clinical and Experimental Research*; 35(12), 2226–2230.
- Kesmodel, U. S. & Schiøler Kesmodel, P. (2002) Drinking during Pregnancy: Attitudes and Knowledge among Pregnant Danish Women, 1998. *Alcoholism, Clinical and Experimental Research*; 26(10), 1553–1560.

- Krefting, L. (1991) Rigor in Qualitative Research: The Assessment of Trustworthiness. *The American Journal of Occupational Therapy*; 45(3), 214–222.
- Lange, S., Shield, K., Koren, G., Rehm, J. & Popova, S. (2014) A Comparison of the Prevalence of Prenatal Alcohol Exposure Obtained via Maternal Self-Reports versus Meconium Testing: A Systematic Literature Review and Meta-Analysis. *BMC Pregnancy and Childbirth*; 14, 127.
- Larkby, C. & Day, N. (1997) The Effects of Prenatal Alcohol Exposure. *Alcohol Health and Research World*; 21(3), 192–198.
- Laurence, J. (2012) Even Moderate Drinking during Pregnancy Can Affect Child’s IQ. *The Independent* [online] 15<sup>th</sup> November 2012. Available at: <http://www.independent.co.uk/life-style/health-and-families/health-news/even-moderate-drinking-during-pregnancy-can-affect-childs-iq-8317300.html> [Accessed: 18<sup>th</sup> October, 2016].
- Lawson, P. J. & Flocke, S. A. (2009) Teachable Moments for Health Behavior Change: A Concept Analysis. *Patient Education and Counseling*; 76(1), 25–30.
- Lelong, N., Kaminski, M., Chwalow, J., Bean, K. & Subtil, D. (1995) Attitudes and Behavior of Pregnant Women and Health Professionals towards Alcohol and Tobacco Consumption. *Patient Education and Counseling*; 25(1), 39–49.
- Leppo, A. & Hecksher, D. (2011) The Rise of the Total Abstinence Model. Recommendations Regarding Alcohol Use during Pregnancy in Finland and Denmark. *Nordic Studies on Alcohol and Drugs*; 28(1), 7–27.
- Leppo, A., Hecksher, D. & Tryggvesson, K. (2014) ‘Why Take Chances?’ Advice on Alcohol Intake to Pregnant and Non-Pregnant Women in Four Nordic Countries. *Health Risk & Society*; 16(6), 512–529.
- Li, Q., Hankin, J., Wilsnack, S. C., Abel, E. L., Kirby, R. S., Keith, L. G. & Obican, S. G. (2012) Detection of Alcohol Use in the Second Trimester Among Low-Income Pregnant Women in the Prenatal Care Settings in Jefferson County, Alabama. *Alcoholism: Clinical and Experimental Research*; 36(8), 1449–55.
- Little, R. E., Grathwohl, H. L., Streissguth, A. P. & McIntyre, C. (1981) Public Awareness and Knowledge about the Risks of Drinking during Pregnancy in Multnomah County, Oregon. *American Journal of Public Health*; 71(3), 312–314.
- Livingston, M. & Callinan, S. (2015) Underreporting in Alcohol Surveys: Whose Drinking Is Underestimated? *Journal of Studies on Alcohol and Drugs*; 76(1), 158–64.
- Lowe, J., Baxter, L., Hirokawa, R., Pearce, E. & Peterson, J. (2010) Description of a Media Campaign about Alcohol Use during Pregnancy. *Journal of Studies on Alcohol*

- and Drugs*; 71(5), 739–41.
- Lowe, P. K. & Lee, E. J. (2010) Advocating Alcohol Abstinence to Pregnant Women: Some Observations about British Policy. *Health Risk & Society*; 12(4), 301–311.
- Lowe, P., Lee, E. & Yardley, L. (2010) Under the Influence? The Construction of Foetal Alcohol Syndrome in UK Newspapers. *Sociological Research Online*; 15(4).
- Loxton, D., Chojenta, C., Anderson, A. E., Powers, J. R., Shakeshaft, A. & Burns, L. (2013) Acquisition and Utilization of Information About Alcohol Use during pregnancy Among Australian Pregnant Women and Service Providers. *Journal of Midwifery & Women's Health*; 58(5), 523–530.
- Lupton, D. (2012) 'Precious Cargo': Foetal Subjects, Risk and Reproductive Citizenship. *Critical Public Health*; 22(3), 329–340.
- Lupton, D. (2015) The Pedagogy of Disgust: The Ethical, Moral and Political Implications of Using Disgust in Public Health Campaigns. *Critical Public Health*; 25(1), 4–14.
- Lyons, A. & Willott, S. (2008) Alcohol Consumption, Gender Identities and Women's Changing Social Positions. *Sex Roles*; 59(9-10), 694–712.
- Mabhala, A. & Wilson, F. (eds.) (2009) *Key Concepts in Public Health*. London: SAGE Publications.
- Mallard, S. R., Connor, J. L. & Houghton, L. A. (2013) Maternal Factors Associated with Heavy Periconceptional Alcohol Intake and Drinking Following Pregnancy Recognition: A Post-Partum Survey of New Zealand Women. *Drug and Alcohol Review*; 32(4), 389–397.
- Månsson, E. & Bogren, A. (2014) Health, Risk, and Pleasure: The Formation of Gendered Discourses on Women's Alcohol Consumption. *Addiction Research & Theory*; 22(1), 27–36.
- Marais, S., Jordaan, E., Viljoen, D., Olivier, L., de Waal, J. & Poole, C. (2010) The Effect of Brief Interventions on the Drinking Behaviour of Pregnant Women in a High-risk Rural South African Community: A Cluster Randomised Trial. *Early Child Development and Care*; 181(4), 463–474.
- Marchetta, C. M., Clark, D. H., Floyd, L., Cheal, N. E., Snizek, J. E. & McKnight-Eily, L. R. (2012) Alcohol Use and Binge Drinking Among Women of Childbearing Age - United States, 2006-2010. *Morbidity and Mortality Weekly Report*; 61(25), 534–38.
- Markens, S., Browner, C. H. & Press, N. (1997) Feeding the Fetus: On Interrogating the Notion of Maternal-Fetal Conflict. *Feminist Studies*; 23(2), 351–372.
- Marmot, M. & Bell, R. (2012) Fair Society, Healthy Lives. *Public Health*; 126(Suppl 1), S4–10.

- May, P. A., Gossage, J. P., Brooke, L. E., Snell, C. L., Marais, A.-S., Hendricks, L. S., Snel, C. L., Tabachnick, B. G., Stellavato, C., Buckley, D. G., Brooke, L. E. & Viljoen, D. (2005) Maternal Risk Factors for Fetal Alcohol Syndrome in the Western Cape Province of South Africa: A Population-Based Study. *American Journal of Public Health*; 95(7), 1190–1199.
- May, P. A., Gossage, J. P., Kalberg, W. O., Robinson, L. K., Buckley, D., Manning, M. & Hoyme, H. E. (2009) Prevalence and Epidemiologic Characteristics of FASD from Various Research Methods with an Emphasis on Recent in-School Studies. *Developmental Disabilities Research Reviews*; 15(3), 176–92.
- May, P. A. & Phillip Gossage, J. (2001) Estimating the Prevalence of Fetal Alcohol Syndrome: A Summary. *Alcohol Research and Health*; 25(3), 159-167.
- McAndrew, F., Thompson, J., Fellows, L., Large, A., Speed, M. & Renfrew, M. (2012) *Infant Feeding Survey 2010*. Leeds: NHS Information Centre.
- McBride, C. M., Emmons, K. M. & Lipkus, I. M. (2003) Understanding the Potential of Teachable Moments: The Case of Smoking Cessation. *Health Education Research*; 18(2), 156–170.
- McCambridge, J. & Kypri, K. (2011) Can Simply Answering Research Questions Change Behaviour? Systematic Review and Meta Analyses of Brief Alcohol Intervention Trials. *PLoS ONE*; 6(10), e23748.
- McLeod, D., Benn, C., Pullon, S., Viccars, A., White, S., Cookson, T. & Dowell, A. (2003) The Midwife's Role in Facilitating Smoking Behaviour Change during Pregnancy. *Midwifery*; 19(4), 285–297.
- McNeill, J., Lynn, F. & Alderdice, F. (2012) Public Health Interventions in Midwifery: A Systematic Review of Systematic Reviews. *BMC Public Health*; 12, 955.
- McVeigh, C., Hughes, K., Bellis, M. A., Ashton, J. R., Syed, Q. & Reed, E. (2005) *Violent Britain - People, Prevention and Public Health*. Liverpool: Centre for Public Health [online] Available at: <http://www.cph.org.uk/wp-content/uploads/2012/08/violent-britain-people-prevention-and-public-health.pdf> [Accessed: 18<sup>th</sup> October, 2016].
- Meiklejohn, J., Connor, J. L. & Kypri, K. (2012). Drinking Concordance and Relationship Satisfaction in New Zealand Couples. *Alcohol and Alcoholism*; 47(5), 606–611.
- Mellingen, S., Torsheim, T. & Thuen, F. (2013) Changes in Alcohol Use and Relationship Satisfaction in Norwegian Couples during Pregnancy. *Substance Abuse Treatment, Prevention, and Policy*; 8, 5.
- Mengel, M. B., Searight, H. R. & Cook, K. (2006) Preventing Alcohol-Exposed Pregnancies. *Journal of the American Board of Family Medicine*; 19(5), 494–505.

- Meschke, L. L., Hellerstedt, W., Holl, J. A. & Messelt, S. (2008) Correlates of prenatal alcohol use. *Maternal and Child Health Journal*; 12(4), 442–51.
- Meurk, C. S., Broom, A., Adams, J., Hall, W. & Lucke, J. (2014) Factors Influencing Women's Decisions to Drink Alcohol during Pregnancy: Findings of a Qualitative Study with Implications for Health Communication. *BMC Pregnancy and Childbirth*; 14(1), 246.
- Michie, S., van Stralen, M. M. & West, R. (2011). The behaviour change wheel: A new method for characterising and designing behaviour change interventions. *Implementation Science*; 6: 42.
- Ministry of Health (2016). *Alcohol* [online] Available at: <http://www.health.govt.nz/your-health/healthy-living/addictions/alcohol-and-drugs/alcohol> [Accessed 9<sup>th</sup> October, 2016].
- Miyake, Y., Tanaka, K., Okubo, H., Sasaki, S. & Arakawa, M. (2014) Alcohol Consumption during Pregnancy and Birth Outcomes: The Kyushu Okinawa Maternal and Child Health Study. *BMC Pregnancy and Childbirth*; 14, 79.
- Morgan, D. L. (2014) Pragmatism as a Paradigm for Social Research. *Qualitative Inquiry*; 20(8), 1045–1053.
- Morleo, M., Cook, P. A. & Bellis, M. A. (2011) *Improving Accuracy in Recording Alcohol Consumption: A Survey in Greater Manchester*. Liverpool: Centre for Public Health [online] Available at: <http://www.cph.org.uk/wp-content/uploads/2012/08/improving-accuracy-in-recording-alcohol-consumption-a-survey-in-greater-manchester.pdf> [Accessed: 18<sup>th</sup> October, 2016].
- Morleo, M., Woolfall, K., Dedman, D., Mukherjee, R., Bellis, M. & Cook, P. (2011) Under-Reporting of Foetal Alcohol Spectrum Disorders: An Analysis of Hospital Episode Statistics. *BMC Pediatrics*; 11(1), 1–6.
- Morrison, D. M., Spencer, M. S. & Gillmore, M. R. (1998) Beliefs about substance use among pregnant and parenting adolescents. *Journal of Research on Adolescence*; 8(1), 69–95.
- van de Mortel, T. F. (2008) Faking It: Social Desirability Response Bias in Self-Report Research. *Australian Journal of Advanced Nursing*; 25(4), 40–48.
- Muggli, E., Cook, B., O'Leary, C., Forster, D. & Halliday, J. (2015) Increasing Accurate Self-Report in Surveys of Pregnancy Alcohol Use. *Midwifery*; 31(3), e23–8.
- Mukherjee, R., Wray, E., Hollins, S. & Curfs, L. (2014) What Does the General Public in the UK Know about the Risk to a Developing Foetus If Exposed to Alcohol during pregnancy? Findings from a UK Mixed Methodology Study. *Child: Care, Health and*

*Development*; 41(3), 467–474.

- Murphy, D. J., Dunney, C., Mullally, A., Adnan, N., Fahey, T. & Barry, J. (2014) A Prospective Cohort Study of Alcohol Exposure in Early and Late Pregnancy within an Urban Population in Ireland. *International Journal of Environmental Resesearch and Public Health*; 11(2), 2049–2063.
- Naidoo, J. & Wills, J. (2000) *Health Promotion: Foundations for Practice*. London: Baillière Tindall.
- National Board of Health and Welfare (NBHW) (2011) *Nationella Riktlinjer För Sjukdomsförebyggande Metoder 2011 - Tobaksbruk, Riskbruk Av Alcohol, Otillräcklig Fysisk Aktivitet Och Ohälsosamma Levnadsvanor: Stöd För Styrning Och Ledning [National guidelines for disease preventative methods 2011 - tobacco use, risky alcohol consumption, inadequate physical activity and unhealthy lifestyle]* Stockholm: National Board of Health and Welfare.
- National Board of Health and Welfare (NBHW) (2014) *Kunskapsstöd För Mödrahälsovården [Knowledge support for maternal health care]*. Stockholm: National Board of Health and Welfare.
- National Board of Health and Welfare (NBHW) (2015) *Förbättrat Stöd till Barn Som Anhöriga - Slutrapport Från Ett Regeringsuppdrag 2011-2014 Samt Pågående Arbete [Increased support to children as next of kin - final report from a Government mission 2011-2014 and ongoing work]*. Stockholm: National Board of Health and Welfare.
- National Board of Health and Welfare (NBHW) (2015). *Dödsorsaker 2014 [Causes of death 2014]*. Stockholm: National Board of Health and Welfare.
- Neale, J. (ed) (2008) *Research Methods for Health and Social Care*. Basingstoke: Palgrave Macmillan.
- Neighbors, C., Lee, C. M., Lewis, M. A., Fossos, N. & Larimer, M. E. (2007) Are Social Norms the Best Predictor of Outcomes among Heavy-Drinking College Students? *Journal of Studies on Alcohol and Drugs*; 68(4), 556–65.
- van Nes, F., Abma, T., Jonsson, H. & Deeg, D. (2010) Language Differences in Qualitative Research: Is Meaning Lost in Translation? *European Journal of Ageing*; 7(4), 313–316.
- National Health and Medical Research Council (NHMRC) (2001) *Australian Alcohol Guidelines - Health Risks and Benefits* [online] Available at: [https://www.nhmrc.gov.au/\\_files\\_nhmrc/publications/attachments/ds9.pdf](https://www.nhmrc.gov.au/_files_nhmrc/publications/attachments/ds9.pdf) [Accessed: 9<sup>th</sup> October, 2016].

- National Health and Medical Research Council (NHMRC) (2009) *Australian Guidelines to Reduce Health Risks from Drinking Alcohol* [online] Available at: [https://www.nhmrc.gov.au/\\_files\\_nhmrc/publications/attachments/ds10-alcohol.pdf](https://www.nhmrc.gov.au/_files_nhmrc/publications/attachments/ds10-alcohol.pdf) [Accessed: 9<sup>th</sup> October, 2016].
- National Institute for Health and Care Excellence (NICE) (2003) *Antenatal Care - Routine Care for Healthy Pregnant Women*. London: National Institute for Health and Care Excellence [online] Available at: <http://anr-dpn.vjf.cnrs.fr/sites/default/files/NICE2003RoutineCareHealthyPregnantWomen.pdf> [Accessed: 18<sup>th</sup> October, 2016].
- National Institute for Health and Care Excellence (NICE) (2008) *Antenatal Care - NICE Clinical Guideline 62*. London: National Institute for Health and Care Excellence. [online] Available at: <https://www.nice.org.uk/guidance/cg62> [Accessed: 18<sup>th</sup> October, 2016].
- NHS Health Scotland (2016) *Ready Steady Baby! - Alcohol during Pregnancy* [online] Available at: <http://www.readysteadybaby.org.uk/you-and-your-pregnancy/looking-after-yourself-during-pregnancy/alcohol.aspx> [Accessed: 3<sup>rd</sup> July, 2016].
- Nilsen, P., Holmqvist, M., Hultgren, E., Bendtsen, P. & Cedergren, M. (2008) Alcohol Use before and during Pregnancy and Factors Influencing Change among Swedish Women. *Acta Obstetrica et Gynecologica Scandinavica*; 87(7), 768–74.
- Nilsen, P., Skagerström, J., Rahmqvist, M. & Blomberg, M. (2012) Alcohol Prevention in Swedish Antenatal Care: Effectiveness and Perceptions of the Risk Drinking Project Counseling Model. *Acta Obstetrica et Gynecologica Scandinavica*; 91(6), 736–743.
- Nilsen, P., Wählin, S. & Heather, N. (2011) Implementing Brief Interventions in Health Care: Lessons Learned from the Swedish Risk Drinking Project. *International Journal of Environmental Research and Public Health*; 8(9), 3609–27.
- Nolen-Hoeksema, S. (2004) Gender Differences in Risk Factors and Consequences for Alcohol Use and Problems. *Clinical Psychology Review*; 24(8), 981–1010.
- Norström, T. & Ramstedt, M. (2006) Sweden - Is Alcohol Becoming an Ordinary Commodity? *Addiction*; 101(11), 1543–1545.
- Nuffield Council on Bioethics (2007) *Public Health: Ethical Issues*. London: Nuffield Council on Bioethics [online] Available at: <http://nuffieldbioethics.org/wp-content/uploads/2014/07/Public-health-ethical-issues.pdf> [Accessed: 18<sup>th</sup> October, 2016].
- O’Cathain, A., Murphy, E. & Nicholl, J. (2010) Three Techniques for Integrating Data in Mixed Methods Studies. *BMJ*; 341,c4587.



- O'Connor, M. J. & Whaley, S. E. (2007) Brief Intervention for Alcohol Use by Pregnant Women. *American Journal of Public Health*; 97(2), 252–8.
- O'Keeffe, L. M., Greene, R. A. & Kearney, P. M. (2014) The Effect of Moderate Gestational Alcohol Consumption during Pregnancy on Speech and Language Outcomes in Children: A Systematic Review. *Systematic Reviews*; 3, 1.
- O'Keeffe, L. M., Kearney, P. M., Greene, R. A. & Kenny, L. C. (2016) Alcohol Use during Pregnancy. *Obstetrics, Gynaecology & Reproductive Medicine*; 26(6), 188–189.
- O'Keeffe, L. M., Kearney, P. M., McCarthy, F. P., Khashan, A. S., Greene, R. A., North, R. A., Poston, L., McCowan, L. M. E., Baker, P. N., Dekker, G. A., Walker, J. J., Taylor, R. & Kenny, L. C. (2015) Prevalence and Predictors of Alcohol Use during Pregnancy: Findings from International Multicentre Cohort Studies. *BMJ Open*; 5, e006323.
- O'Leary, C. M. (2002) *Fetal Alcohol Syndrome: A Literature Review*. National Alcohol Strategy 2001 to 2003-04 Occasional Paper. Canberra: Commonwealth Department of Health and Ageing [online] Available at: <http://www.flourishpaediatrics.com.au/docs/fnational-drug-strategy-fetal-alcohol-syndrome-a-literature-review-etalsyn.pdf> [Accessed: 19<sup>th</sup> October, 2016].
- O'Leary, C. M. (2004) Fetal Alcohol Syndrome: Diagnosis, Epidemiology, and Developmental Outcomes. *Journal of Paediatrics and Child Health*; 40(1-2), 2–7.
- O'Leary, C. M. (2012) Alcohol and Pregnancy: Do Abstinence Policies Have Unintended Consequences? *Alcohol and Alcoholism*; 47(6), 638–9.
- O'Leary, C. M. & Bower, C. (2012) Guidelines for Pregnancy: What's an Acceptable Risk, and How Is the Evidence (Finally) Shaping Up? *Drug and Alcohol Review*; 31(2), 170–183.
- O'Leary, C. M., Heuzenroeder, L., Elliott, E. J. & Bower, C. (2007) A Review of Policies on Alcohol Use during Pregnancy in Australia and Other English-Speaking Countries, 2006. *The Medical Journal of Australia*; 186(9), 466–471.
- Office for National Statistics (ONS) (2012) Regional Profiles: Key Statistics - North West, August 2012 [online] Available at: [http://www.ons.gov.uk/ons/dcp171780\\_275076.pdf](http://www.ons.gov.uk/ons/dcp171780_275076.pdf) [Accessed: 19<sup>th</sup> October, 2016].
- Office for National Statistics (ONS) (2013) *Adult Drinking Habits in Great Britain, 2013* [online] Available at: <http://www.ons.gov.uk/peoplepopulationandcommunity/healthandsocialcare/healthandlifeexpectancies/compendium/opinionsandlifestylesurvey/2015-03->

- 19/adultdrinkinghabitsingreatbritain2013 [Accessed: 19<sup>th</sup> October, 2016].
- Office for National Statistics (ONS) (2013) *Live Births in England and Wales by Characteristics of Mother 2011* [online] Available at: <http://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/livebirths/bulletins/livebirthsinenglandandwalesbycharacteristicsofmother1/2015-01-24> [Accessed: 19<sup>th</sup> October, 2016].
- Office for National Statistics (ONS) (2015) *Alcohol-Related Deaths in the United Kingdom, Registered in 2013* [online] Available at: <http://www.ons.gov.uk/peoplepopulationandcommunity/healthandsocialcare/causesofdeath/bulletins/alcoholrelateddeathsintheunitedkingdom/2015-02-11> [Accessed: 19<sup>th</sup> October, 2016].
- Olsen, J. (2009) Problems in Studying Fetotoxic Effects of Alcohol. *Addiction*; 104(8), 1276–1280.
- Onwuegbuzie, A. J. & Combs, J. P. (2011) Data Analysis in Mixed Research: A Primer. *Interntional Journal of Education*; 3(1), e13.
- Organization for Economic Co-operation and Development (OECD) (2013) *Health at a Glance 2013 - OECD indicators* [online] Available at: <https://www.oecd.org/els/health-systems/Health-at-a-Glance-2013.pdf> [Accessed: 9<sup>th</sup> October, 2016].
- Osterman, R. L. & Dyehouse, J. (2012) Effects of a Motivational Interviewing Intervention to Decrease Prenatal Alcohol Use. *Western Journal of Nursing Research*; 34(4), 434–54.
- Øvretveit, J. (1998) *Comparative and Cross-Cultural Health Research - a Practical Guide*. Abingdon: Radcliffe Medical Press.
- Parackal, S. M., Parackal, M. K. & Harraway, J. A. (2013) Prevalence and Correlates of Drinking in Early Pregnancy among Women Who Stopped Drinking on Pregnancy Recognition. *Maternal and Child Health Journal*; 17(3), 520–9.
- Patra, J., Bakker, R., Irving, H., Jaddoe, V. W. V, Malini, S. & Rehm, J. (2011) Dose-Response Relationship between Alcohol Consumption before and during Pregnancy and the Risks of Low Birthweight, Preterm Birth and Small for Gestational Age (SGA)—a Systematic Review and Meta-Analyses. *BJOG* ; 118(12), 1411–1421.
- Payne, J., Elliott, E., D’Antoine, H., O’Leary, C. M., Mahony, A., Haan, E. & Bower, C. (2005) Health Professionals’ Knowledge, Practice and Opinions about Fetal Alcohol Syndrome and Alcohol Consumption during pregnancy. *Australian and New Zealand Journal of Public Health*; 29(6), 558–564.

- Payne, J. M., Watkins, R. E., Jones, H. M., Reibel, T., Mutch, R., Wilkins, A., Whitlock, & Bower, C. (2014) Midwives' Knowledge, Attitudes and Practice about Alcohol Exposure and the Risk of Fetal Alcohol Spectrum Disorder. *BMC Pregnancy Childbirth*; 14, 377.
- Peadon, E., Payne, J., Henley, N., D'Antoine, H., Bartu, A., O'Leary, C. M., Bower, C. & Elliot, E. J. (2010) Women's Knowledge and Attitudes Regarding Alcohol Consumption during pregnancy: A National Survey. *BMC Public Health*; 10, 510.
- Peadon, E., Payne, J., Henley, N., D'Antoine, H., Bartu, A., O'Leary, C. M., Bower, C. & Elliot, E. J. (2011) Attitudes and Behaviour Predict Women's Intention to Drink Alcohol during Pregnancy: The Challenge for Health Professionals. *BMC Public Health*; 11, 584.
- Peugh, J. & Belenko, S. (2001) Alcohol, Drugs and Sexual Function: A Review. *Journal of Psychoactive Drugs*; 33(3), 223–232.
- Phillips, D., Thomas, K., Cox, H., Ricciardelli, L. A., Ogle, J., Love, V. & Steele, A. (2007) Factors That Influence Women's Disclosures of Substance Use during Pregnancy: A Qualitative Study of Ten Midwives and Ten Pregnant Women. *Journal of Drug Issues*; 37(2), 357–375.
- Plant, M. L. (1997) *Women and Alcohol - Contemporary & Historical Perspectives*. London: Free Associations Books .
- Plant, M. L. (2008) The Role of Alcohol in Women's Lives: A Review of Issues and Responses. *Journal of Substance Use*; 13(3), 155–191.
- Plant, M. L. (1986) Drinking during pregnancy and Fetal Harm: Results from a Scottish Prospective Study. *Midwifery*; 2(2), 81–85.
- Polygenis, D., Wharton, S., Malmberg, C., Sherman, N., Kennedy, D., Koren, G. & Einarson, T. R. (1998) Moderate Alcohol Consumption during Pregnancy and the Incidence of Fetal Malformations: A Meta-Analysis. *Neurotoxicology and Teratology*; 20(1), 61–67.
- Popova, S., Lange, S., Burd, L. & Rehm, J. (2012) Health Care Burden and Cost Associated with Fetal Alcohol Syndrome: Based on Official Canadian Data. *PLoS ONE*; 7(8), e43024.
- Popova, S., Lange, S., Burd, L. & Rehm, J. (2015) Cost Attributable to Fetal Alcohol Spectrum Disorder in the Canadian Correctional System. *International Journal of Law and Psychiatry*; 41, 76–81.
- Popova, S., Lange, S., Shield, K., Mihic, A., Chudley, A. E., Mukherjee, R. A. S., Bekmuradov, D. & Rehm, J. (2016) Comorbidity of Fetal Alcohol Spectrum Disorder:

- A Systematic Review and Meta-Analysis. *Lancet*; 387(10022), 978–987.
- Public Health Agency (PHA) (2014a) *Folkhälsan i Sverige - Årsrapport 2014 [Public health in Sweden - Annual report 2014]*. Solna/Östersund: Public Health Agency of Sweden [online] Available at: <https://www.folkhalsomyndigheten.se/pagefiles/17825/Folkhalsan-i-Sverige-arsrapport-2014.pdf> [Accessed: 19<sup>th</sup> October, 2016].
- Public Health Agency (PHA) (2014b) *Syfte Och Bakgrund till Frågorna I Nationella Folkhälsoenkäten [Aim and Background to Questions in National Public Health Survey]*. Solna/Östersund: Public Health Agency of Sweden [online] Available at: <https://www.folkhalsomyndigheten.se/pagefiles/12665/Syfte-bakgrund-fragorna-HLV.pdf> [Accessed: 19<sup>th</sup> October, 2016].
- Public Health Agency (PHA) (2015a) *Samlad Uppföljning av ANDT-Strategin [Collected Follow-up of the ANDT Strategy]* Solna/ Östersund: Public Health Agency of Sweden [online] Available at: <https://www.folkhalsomyndigheten.se/documents/om-myndigheten/uppdrag-styrdokument/avslutade/uppfoljning-andt-strategin.pdf> [Accessed: 19<sup>th</sup> October, 2016].
- Public Health Agency (PHA) (2015b) *Alkoholvanor [Alcohol habits]* [online] Available at: <http://www.folkhalsomyndigheten.se/amnesomraden/statistik-och-undersokningar/enkater-och-undersokningar/nationella-folkhalsoenkaten/levnadsvanor/alkoholvanor/> [Accessed 14<sup>th</sup> October, 2015].
- Public Health Agency (PHA) (2015c) *Folkhälsodata (Public Health Data)* [online] Available at: [http://fohmapp.folkhalsomyndigheten.se/Folkhalsodata/pxweb/sv/A\\_Folkhalsodata/?rxid=7c112f70-3a66-4146-b153-263a19851e99](http://fohmapp.folkhalsomyndigheten.se/Folkhalsodata/pxweb/sv/A_Folkhalsodata/?rxid=7c112f70-3a66-4146-b153-263a19851e99) [Accessed 11<sup>th</sup> February, 2016].
- Public Health England (PHE) (2013) *Nursing and Midwifery Contribution to Public Health: Improving health and wellbeing* [online] Available at: [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/210100/NMR\\_final.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/210100/NMR_final.pdf) [Accessed 24<sup>th</sup> September, 2016].
- Public Health England (PHE) (2015) *Health Profile 2015 - Liverpool* [online] Available at: [www.apho.org.uk/resource/view.aspx?RID=171639](http://www.apho.org.uk/resource/view.aspx?RID=171639) [Accessed: 9<sup>th</sup> October, 2016].
- QSR International Pty Ltd. (2012) NVivo Qualitative Data Analysis Software. Version 10.
- Raingruber, B. (2014) *Contemporary Health Promotion in Nursing Practice*. Burlington: Jones & Bartlett Learning.
- Raymond, N., Beer, C., Glazebrook, C. & Sayal, K. (2009) Pregnant Women's Attitudes towards Alcohol Consumption. *BMC Public Health*; 9, 175.

- Rehm, J., Shield, K. D., Joharchi, N. & Shuper, P. A. (2012) Alcohol Consumption and the Intention to Engage in Unprotected Sex: Systematic Review and Meta-Analysis of Experimental Studies. *Addiction*; 107(1), 51–9.
- Riley, E. P., Infante, M. A. & Warren, K. R. (2011) Fetal Alcohol Spectrum Disorders: An Overview. *Neuropsychology Review*; 21(2), 73–80.
- Room, R. (1988) Cross-Cultural Research in Alcohol Studies: Research Traditions and Analytical Issues. In: Harford, T. and Towle, L. (eds.). *Cultural Influences and Drinking Patterns: A Focus on Hispanic and Japanese Populations*. NIAAA Research Monograph 19, Publication No. (ADM) 88-1563. Washington: USGPO (pp. 9–40).
- Room, R. (2005) Stigma, Social Inequality and Alcohol and Drug Use. *Drug and Alcohol Review*; 24(2), 143–155.
- Roozen, S., Peters, G.-J. Y., Kok, G., Townend, D., Nijhuis, J. & Curfs, L. (2016) Worldwide Prevalence of Fetal Alcohol Spectrum Disorders: A Systematic Literature Review Including Meta-Analysis. *Alcoholism, Clinical and Experimental Research*, 40(1), 18–32.
- Rosenstock, I. M. (1966) Why People Use Health Services. *Milbank Quarterly*, 44(3), Suppl, 94–127.
- Rossow, I. (2001) Alcohol and Homicide: A Cross-Cultural Comparison of the Relationship in 14 European Countries. *Addiction*; 96(Suppl 1), 77–92.
- Rostad, B., Schei, B. & Sundby, J. (2006) Fertility in Norwegian Women: Results from a Population-Based Health Survey. *Scandinavian Journal of Public Health*; 34(1), 5–10.
- Rothman, B. K. (2014) Pregnancy, Birth and Risk: An Introduction. *Health, Risk & Society*, 16(1), 1-6.
- Roumeliotis, F. & Törrönen, J. (2012) From Mothers of the ‘People’s Home’ to Biologically Rational Consumers. *Feminist Media Studies*; 14(3), 452–469.
- Royal College of Midwives (RCM) (2016) *The RCM has consistently advised women to abstain from alcohol when pregnant* [online] Available at: <https://www.rcm.org.uk/news-views-and-analysis/news/%E2%80%98the-the-rcm-has-consistently-advised-women-to-abstain-from-alcohol> [Accessed: 24<sup>th</sup> September, 2016].
- Royal College of Obstetricians and Gynaecologists (RCOG) (2015) *Information for you: Alcohol and pregnancy* [online] <https://www.rcog.org.uk/globalassets/documents/patients/patient-information-leaflets/pregnancy/pi-alcohol-and-pregnancy.pdf> [Accessed: 24<sup>th</sup> September, 2016].

- Sallis, J. F., Owen, N. & Fisher, E. B. (2008) Ecological Models of Health Behavior. In: Glanz, K., Rimer, B. K., and Viswanath, K. (eds.). *Health Behavior and Health Education - Theory, research and practice*. San Fransisco: John Wiley and Sons.
- Saunders, J. B., Aasland, O. G., Amundsen, A. & Grant, M. (1993a) Alcohol Consumption and Related Problems among Primary Health Care Patients: WHO Collaborative Project on Early Detection of Persons with Harmful Alcohol Consumption—I. *Addiction*; 88(3), 349–362.
- Saunders, J. B., Aasland, O. G., Babor, T. F., De La Fuente, J. R. & Grant, M. (1993b) Development of the Alcohol Use Disorders Identification Test (AUDIT): WHO Collaborative Project on Early Detection of Persons with Harmful Alcohol Consumption-II. *Addiction*, 88(6), 791–804.
- Savage, C., Wray, J., Ritchey, P. N., Sommers, M., Dyehouse, J. & Fulmer, M. (2003) Current Screening Instruments Related to Alcohol Consumption during pregnancy and a Proposed Alternative Method. *Journal of Obstetric, Gynecologic & Neonatal Nursing*; 32(4), 437–446.
- Scafato, E., Galluzzo, L., Ghirini, S., Gandin, C. & Martire, S. (2014/2016) *Low risk drinking guidelines in Europe: overview of RARHA survey results*. Rome: Istituto Superiore di Sanità [online] Available at: [http://www.rarha.eu/Resources/Guidelines/Documents/Overview%20WP5\\_T1%20LowRiskDrinkingGuidelines\\_FINAL.pdf](http://www.rarha.eu/Resources/Guidelines/Documents/Overview%20WP5_T1%20LowRiskDrinkingGuidelines_FINAL.pdf) [Accessed: 9<sup>th</sup> October, 2016].
- Schmied, V. A., Duff, M., Dahlen, H. G., Mills, A. E. & Kolt, G. S. (2011) ‘Not Waving but Drowning’: a Study of the Experiences and Concerns of Midwives and Other Health Professionals Caring for Obese Childbearing Women. *Midwifery*; 27(4), 424–430.
- Schölin, L. (2015) What Can We Learn from Cross-Cultural Research on Alcohol Use during pregnancy? *Fetal Alcohol Forum*; (13), 51.
- Scottish Parliament (2012) *Alcohol (Minimum Pricing) (Scotland) Act 2012*. Edinburgh: Scottish Parliament [online] Available at: [http://www.legislation.gov.uk/asp/2012/4/pdfs/asp\\_20120004\\_en.pdf](http://www.legislation.gov.uk/asp/2012/4/pdfs/asp_20120004_en.pdf) [Accessed: 19<sup>th</sup> October, 2016].
- Sedgh, G., Singh, S. & Hussain, R. (2014) Intended and Unintended Pregnancies Worldwide in 2012 and Recent Trends. *Studies in Family Planning*; 45(3), 301–314.
- Seib, C. A., Daglish, M., Heath, R., Booker, C., Reid, C. & Fraser, J. (2012) Screening for Alcohol and Drug Use during pregnancy. *Midwifery*; 28(6), 760–764.
- Shannon-Baker, P. (2015) Making Paradigms Meaningful in Mixed Methods Research.

- Journal of Mixed Methods Research*; 10(4), 319–334.
- Sharma, R., Biedenharn, K., Fedor, J. & Agarwal, A. (2013) Lifestyle Factors and Reproductive Health: Taking Control of Your Fertility. *Reproductive Biology and Endocrinology*; 11(1), 66.
- Sheard, L. (2011) ‘Anything Could Have Happened’: Women, the Night-Time Economy, Alcohol and Drink Spiking. *Sociology*; 45(4), 619–633.
- Shenton, A. K. (2004) Strategies for Ensuring Trustworthiness in Qualitative Research Projects. *Education for Information*; (22), 63–75.
- Simonen, J., Törrönen, J. & Tigerstedt, C. (2013) Femininities of Drinking among Finnish and Swedish Women of Different Ages. *Addiction Research & Theory*; 22(2), 98–108.
- Skagerbø, Å., Kesmodel, U. S., Wimberley, T., Støvring, H., Bertrand, J., Landrø, N. I. & Mortensen, E. L. (2012) The Effects of Low to Moderate Alcohol Consumption and Binge Drinking in Early Pregnancy on Executive Function in 5-Year-Old Children. *International Journal of Obstetrics and Gynaecology*; 119(10), 1201–1210.
- Skagerström, J. (2015) *Alcohol Consumption during Pregnancy - Prevalence, Predictors and Prevention*. Ph. D. thesis. Linköping University.
- Skagerström, J., Alehagen, S., Haggstrom-Nordin, E., Arestedt, K., Nilsen, P., Häggström-Nordin, E., Årestedt, K. & Nilsen, P. (2013) Prevalence of Alcohol Use before and during Pregnancy and Predictors of Drinking during Pregnancy: A Cross Sectional Study in Sweden. *BMC Public Health*; 13, 780.
- Skagerström, J., Chang, G. & Nilsen, P. (2011) Predictors of Drinking During Pregnancy: A Systematic Review. *Journal of Women’s Health*; 20(6), 901–913.
- Skagerström, J., Häggström-Nordin, E. & Alehagen, S. (2015) The Voice of Non-Pregnant Women on Alcohol Consumption during Pregnancy: A Focus Group Study among Women in Sweden. *BMC Public Health*; 15(1), 1–9.
- Skagerström, J., Johansson, A. L., Holmqvist, M., Envall, E. K. & Nilsen, P. (2012) Towards Improved Alcohol Prevention in Swedish Antenatal Care? *Midwifery*; 28(3), 314–320.
- Slovic, P. & Peters, E. (2006) Risk Perception and Affect. *Current Directions in Psychological Science*; 15(6), 322–325.
- Smedley, J., Jancey, J. M., Dhaliwal, S., Zhao, Y., Monteiro, S. MDR., Howat, P. (2014) Women’s reported health behaviours before and during pregnancy: A retrospective study. *Health Education Journal*; 73(1): 28–40.
- Smith, L., Savory, J., Couves, J. & Burns, E. (2014) Alcohol Consumption during Pregnancy: Cross-Sectional Survey. *Midwifery*; 30(12), 1173–8.

- Swedish National Institute of Public Health (SNIPH) (n.d) *Alcodiary* [online] Available at: <http://www.inarchive.com/page/2011-08-20/http://www.fhi.se/Publikationer/Alla-publikationer/Alcodiary/> [Accessed: 15<sup>th</sup> September, 2016].
- Swedish National Institute of Public Health (SNIPH) (2009a). *Low Dose Alcohol Exposure - Does It Harm? A Systematic Literature Review*. Östersund: Swedish National Institute of Public Health [online] Available at: <https://www.folkhalsomyndigheten.se/pagefiles/12314/R2009-14-low-dose-alcohol-exposure-pregnancy.pdf> [Accessed: 19<sup>th</sup> October, 2016].
- Swedish National Institute of Public Health (SNIPH) (2009b) *Barnmorskans Guide För Samtal Om Alkohol [The Midwives' Guide for Dialogues about Alcohol]*. Östersund: Swedish National Insititiute of Public Health [online] Available at: <https://www.folkhalsomyndigheten.se/pagefiles/12466/Barnmorskans-guide-for-samtal-om-alkohol.pdf> [Accessed: 19<sup>th</sup> October, 2016].
- Stade, B. C., Bailey, C., Dzendoletas, D., Sgro, M., Dowswell, T. & Bennett, D. (2009) Psychological and/or Educational Interventions for Reducing Alcohol Consumption in Pregnant Women and Women Planning Pregnancy. *Cochrane Database of Systematic Reviews*; (2), CD004228.
- Statistics Sweden (2016) *Folkmängd I Riket, Län Och Kommuner 31 December 2015 Och Befolkningsförändringar 2015 [Population in the nation, regions and municipalities 31 December 2015 and population changes]* [online] Available at: [http://www.scb.se/sv\\_/Hitta-statistik/Statistik-efter-amne/Befolkning/Befolkningens-sammansattning/Befolkningsstatistik/25788/25795/Helarsstatistik---Kommun-lan-och-riket/399347/](http://www.scb.se/sv_/Hitta-statistik/Statistik-efter-amne/Befolkning/Befolkningens-sammansattning/Befolkningsstatistik/25788/25795/Helarsstatistik---Kommun-lan-och-riket/399347/) [Accessed: 7<sup>th</sup> June, 2016].
- Statistics Sweden (2016) *Medelåldern Vid Första Barnets Födelse Efter Region Och Kön [Average Age at Birth of First Child by Region and Gender]* [online] Available at: [http://www.statistikdatabasen.scb.se/pxweb/sv/ssd/START\\_\\_BE\\_\\_BE0701/MedelAlderNY/?rxid=0f6b2286-249c-491e-b3ac-cd388b8bb16a](http://www.statistikdatabasen.scb.se/pxweb/sv/ssd/START__BE__BE0701/MedelAlderNY/?rxid=0f6b2286-249c-491e-b3ac-cd388b8bb16a) [Accessed: 23<sup>rd</sup> January 2015].
- Stengel, C. (2014) The Risk of Being ‘too Honest’: Drug Use, Stigma and Pregnancy. *Health, Risk & Society*; 16(1):36-50.
- Stockwell, T., Donath, S., Cooper-Stanbury, M., Chikritzhs, T., Catalano, P. & Mateo, C. (2004) Under-Reporting of Alcohol Consumption in Household Surveys: A Comparison of Quantity–frequency, Graduated–frequency and Recent Recall. *Addiction*; 99(8), 1024–1033.
- Strandberg-Larsen, K., Rod Nielsen, N., Nybo Andersen, A.-M., Olsen, J. & Grønbaek, M.



- (2008) Characteristics of Women Who Binge Drink before and after They Become Aware of Their Pregnancy. *European Journal of Epidemiology*; 23(8), 565–72.
- Streissguth, A. P. (1978) Fetal Alcohol Syndrome: An Epidemiologic Perspective. *American Journal of Epidemiology*; 107(6), 467–478.
- Superu. (2015) *Patterns and Dynamics of Alcohol Consumption during Pregnancy in a Recent New Zealand Cohort of Expectant Mothers*. Wellington: Social Policy Evaluation and Research Unit (Superu) [online] Available at: <http://www.superu.govt.nz/sites/default/files/Alcohol%20and%20Pregnancy%20Research%20Report.pdf> [Accessed: 19<sup>th</sup> October, 2016].
- Taylor, J. (2012) Pregnant Women Can Binge Drink Safely, Says Research. *Metro* [online] Available at: <http://metro.co.uk/2012/06/19/pregnant-women-can-binge-drink-safely-says-research-473526/> [Accessed: 19<sup>th</sup> October, 2016].
- Teddlie, C. & Tashakkori, A. (2006) A General Typology of Research Designs Featuring Mixed Methods. *Research in the Schools*; 13(1), 12–28.
- Temple, B. & Young, A. (2004) Qualitative Research and Translation Dilemmas. *Qualitative Research*; 4(2), 161–178.
- Thyrian, J. R., Hannöver, W., Röske, K., Scherbarth, S., Hapke, U., John, U., et al. (2006). Midwives' Attitudes to Counselling Women about Their Smoking Behaviour during Pregnancy and Postpartum. *Midwifery*; 22(1), 32–39.
- Tolstrup, J. S., Kjaer, S. K., Holst, C., Sharif, H., Munk, C., Osler, M., et al. (2003) Alcohol Use as Predictor for Infertility in a Representative Population of Danish Women. *Acta Obstetrica et Gynecologica Scandinavica*; 82(8), 744–9.
- Tones, K. & Green, J. (2004) *Health Promotion - Planning and Strategies*. London: SAGE.
- Törrönen, J. & Tryggvesson, K. (2015) An Analysis of Swedish Public Health Campaigns against Drinking during Pregnancy. *Critical Discourse Studies*; 12(1), 57–77.
- Tulchinsky, T. & Varavikova, E. A. (1999) *The New Public Health*. San Diego: London : Academic.
- Tzilos, G. K., Sokol, R. J. & Ondersma, S. J. (2011) A Randomized Phase I Trial of a Brief Computer-Delivered Intervention for Alcohol Use during Pregnancy. *Journal of Women's Health*; 20(10), 1517–24.
- U.S. Department of Health and Human Services and U.S. Department of Agriculture (2015) *2015-2020 Dietary Guidelines for Americans*. 8<sup>th</sup> edition. Washington, DC: U.S. Department of Health and Human Services and U.S. Department of Agriculture [online] Available at: [https://health.gov/dietaryguidelines/2015/resources/2015-2020\\_Dietary\\_Guidelines.pdf](https://health.gov/dietaryguidelines/2015/resources/2015-2020_Dietary_Guidelines.pdf) [Accessed: 9<sup>th</sup> October, 2016].

- Valero De Bernabé, J., Soriano, T., Albaladejo, R., Juarranz, M., Calle, M. E., Martínez, D., et al. (2004) Risk Factors for Low Birth Weight: A Review. *European Journal of Obstetrics, Gynecology, and Reproductive Biology*; 116(1), 3–15.
- Walker, M. J., Al-Sahab, B., Islam, F. & Tamim, H. (2011) The Epidemiology of Alcohol Utilization during Pregnancy: An Analysis of the Canadian Maternity Experiences Survey (MES). *BMC Pregnancy and Childbirth*; 11(1), 52.
- Wangberg, S. C. (2015) Norwegian Midwives' Use of Screening for and Brief Interventions on Alcohol Use during pregnancy. *Sexual & Reproductive Healthcare*; 6(3), 186–190.
- Watson, H., Munro, A., Wilson, M., Kerr, S. & Godwin, J. (2010) *Involvement of Nurses and Midwives in Screening and Brief Interventions for Hazardous and Harmful Use of Alcohol and Other Psychoactive Substances*. Geneva: World Health Organization.
- Wellings, K., Jones, K. G., Mercer, C. H., Tanton, C., Clifton, S., Datta, J., et al. (2013) The Prevalence of Unplanned Pregnancy and Associated Factors in Britain: Findings from the Third National Survey of Sexual Attitudes and Lifestyles (Natsal-3). *The Lancet*; 382(9907), 1807–1816.
- World Health Organization (WHO) (2010) *The WHO Global Strategy to Reduce the Harmful Use of Alcohol*. Geneva: World Health Organization.
- World Health Organization (WHO) (2012) *European Action Plan to Reduce the Harmful Use of Alcohol 2012-2020*. Copenhagen: World Health Organization Regional Office for Europe.
- World Health Organization (WHO) (2013a) *Status Report on Alcohol and Health in 35 European Countries*. Copenhagen: World Health Organization Regional Office for Europe.
- World Health Organization (WHO) (2013b) *Global and Regional Estimates of Violence against Women: Prevalence and Health Effects of Intimate Partner Violence and Non-Partner Sexual Violence*. Geneva: World Health Organization.
- World Health Organization (WHO) (2013c) *Health 2020 – A European Policy Framework and Strategy for the 21st Century*. Copenhagen: World Health Organization Regional Office for Europe.
- World Health Organization (WHO) (2013d) *European Report on Preventing Child Maltreatment*. Copenhagen: World Health Organization Regional Office for Europe.
- World Health Organization (WHO) (2014a) *Global Status Report on Alcohol and Health 2014*. Geneva: World Health Organization.
- World Health Organization (WHO) (2014b) *Investing in Children: Child and Adolescent*

- Health Strategy 2015-2020*. Copenhagen: World Health Organization Regional Office for Europe.
- World Health Organization (WHO) (2014c) *Guidelines for the Identification and Management of Substance Use and Substance Use Disorders during pregnancy*. Geneva: World Health Organization.
- World Health Organization (WHO) (2015) *Global Health Observatory Data Repository - Health Service Coverage Data by WHO Region* [online] <http://apps.who.int/gho/data/view.main.1610?lang=en> [Accessed: 4<sup>th</sup> February, 2015].
- World Health Organization (WHO)/London School of Hygiene and Tropical Medicine (LSHTM) (2010) *Preventing Intimate Partner and Sexual Violence against Women: Taking Action and Generating Evidence*. Geneva: Switzerland: World Health Organization. ONLINE.
- Widarsson, M., Kerstis, B., Sundquist, K., Engstrom, G. & Sarkadi, A. (2012) Support Needs of Expectant Mothers and Fathers: A Qualitative Study. *J Perinat Educ*; 21(1), 36–44.
- Wilsnack, R. W., Vogeltanz, N. D., Wilsnack, S. C., Harris, T. R., Alstrom, S. & Bondy, S. (2000) Gender Differences in Alcohol Consumption and Adverse Drinking Consequences: Cross-Cultural Patterns. *Addiction*; 95.
- Wilsnack, S. C., Wilsnack, R. W., Kristjanson, A. F., Vogeltanz-Holm, N. D. & Windle, M. (2004) Alcohol Use and Suicidal Behavior in Women: Longitudinal Patterns in a US National Sample. *Alcoholism-Clinical and Experimental Research*; 28(5), 38s–47s.
- Winstone, A. M. & Verity, C. (2015) Antenatal Alcohol Exposure: An East Anglian Study of Midwives' Knowledge and Practice. *British Journal of Midwifery*; 23(3), 180–186.
- van der Wulp, N. Y., Hoving, C., Eijmael, K., Candel, M. J., van Dalen, W. & De Vries, H. (2014) Reducing Alcohol Use During Pregnancy Via Health Counseling by Midwives and Internet-Based Computer-Tailored Feedback: A Cluster Randomized Trial. *Journal of Medical Internet Research*; 16(12), e274.
- van der Wulp, N. Y., Hoving, C. & de Vries, H. (2013) A Qualitative Investigation of Alcohol Use Advice during Pregnancy: Experiences of Dutch Midwives, Pregnant Women and Their Partners. *Midwifery*; 29(11), e89–98.
- van der Wulp, N. Y., Hoving, C. & de Vries, H. (2014) Dutch Midwives' Experiences with Implementing Health Counselling to Prevent Prenatal Alcohol Use. *Journal of Clinical Nursing*; 23(21-22), 3286–3289.
- van der Wulp, N. Y., Hoving, C. & de Vries, H. (2015) Partner's Influences and Other Correlates of Prenatal Alcohol Use. *Maternal and Child Health Journal*; 19(4), 908–

916.

## Appendix A - Brief information for online survey

Hi.

I am looking for some help with my research and need new parents (baby less than 12 months) to fill out a questionnaire! My name is Lisa Schölin and I am a PhD student at Liverpool John Moores University. I am running a survey about alcohol and pregnancy and have a questionnaire aimed at women and partners in Merseyside who've had a baby in the last 12 months. We are hoping from the results we can increase the understanding of alcohol use during pregnancy among women and their partners and whether services can be improved to give sufficient support during pregnancy. Will really appreciate all help with this and please share with people you know as well. Detailed information is provided on the first page when you click the link. Many thanks! Lisa

<http://www.survey.ljmu.ac.uk/alcpregwomen> (questionnaire for women)

<http://www.survey.ljmu.ac.uk/alcpregpart> (questionnaire for partners)

*Example of recruitment via Facebook, posted January 11th 2014.*

## Appendix B - Participant information sheet, cross-sectional survey



### LIVERPOOL JOHN MOORES UNIVERSITY PARTICIPANT INFORMATION SHEET

Title of Project: Alcohol Use in Pregnancy and Perceptions of Advice Provided in Antenatal Care Settings in Merseyside

Name of Researcher and School/Faculty: Lisa Schölin, Faculty of Health and Applied Social Sciences

*You are being invited to take part in a study about alcohol use before and during pregnancy. You have been invited because you gave birth in the last 12 months, or you have a partner who gave birth in the last 12 months (hereby referred to as 'recently'). Before you decide if you want to take part in this study, it is important that you understand what the study is about. If you have any questions, feel free to contact the researcher.*

#### 1. What is the purpose of the study?

*Women's lifestyle during pregnancy, especially alcohol use, has been widely researched over the last few years. However, potential risks involved with drinking even small amount of alcohol in pregnancy is still not fully understood. More knowledge about women's drinking habits before and during pregnancy can help health care professionals so that they can support and give good advice to pregnant women and their partners. The aims of this study are; to see if women in Merseyside drank alcohol when they were pregnant; if their partner drank alcohol when the woman was pregnant, what women and partners think about lifestyle during pregnancy and what kind of advice they got in antenatal care.*

#### 2. Do I have to take part?

*It is up to you to decide if you want to take part in this study, and if you decide to take part you will be asked to confirm that you are giving the researcher the right to use your data for the purpose of the study. You can however decide to withdraw from the study at any time, and this will not affect your rights to any treatment or service you receive.*

#### 3. What will happen to me if I take part?

*If you decide to take part in this study, you will fill out an anonymous questionnaire which will take about 25 minutes. You can do this in your own time and once you are finished you will put the questionnaire in a pre-stamped envelope and send it through the post or return it to the researcher (if it's given to you in person). Any information on the questionnaire, such as questionnaire code and postcode, are only for analysis purposes. All data will be stored in a locked cabinet at Liverpool John Moores University and the analyzed material will be stored on a password-protected server. Safe storage of the data you provide is important so you can feel sure that the material is only going to be used for the purpose of this study.*

**4. Are there any risks / benefits involved?**

*Answering questions about subjects such as alcohol use might be upsetting or distressing. If this should happen to you after you have filled out the questionnaire you are advised to seek support through Mersey Care NHS. Mersey Care provides information and support services to people living in the Merseyside area, and more information can be found in this guide; [http://www.merseycare.nhs.uk/Library/What\\_we\\_do/Corporate\\_Services/Communications/Seif\\_help\\_guides/Alcohol%20and%20You.pdf](http://www.merseycare.nhs.uk/Library/What_we_do/Corporate_Services/Communications/Seif_help_guides/Alcohol%20and%20You.pdf). There are no direct benefits for you by taking part in this study, but the results will help to improve services to pregnant women and their partners.*

**5. Will my taking part in the study be kept confidential?**

*Yes. The data you provide will be stored securely to make sure that your data is kept confidential throughout the research project.*

**Contact Details of Researcher**

Lisa Schölin  
PhD student  
Faculty of Health and Applied Sciences  
Liverpool John Moores University  
01512314441  
[L.A.Scholin@2012.ljmu.ac.uk](mailto:L.A.Scholin@2012.ljmu.ac.uk)

**Contact details Supervisor**

Dr Lorna Porcellato  
School of Health and Applied Social Sciences  
Liverpool John Moores University  
0151 231 4201  
[L.A.Porcellato@ljmu.ac.uk](mailto:L.A.Porcellato@ljmu.ac.uk)



## Appendix C - Questionnaire to mothers



For researcher use

Codes: \_\_\_\_\_

### Alcohol and Pregnancy Survey - Questionnaire for Women Who Have Recently Been Pregnant



This is a survey about alcohol and pregnancy among women and their partners in Merseyside. The questionnaire is part of a research project looking at lifestyle factors, with a focus on alcohol use, during pregnancy. We hope the results will help to increase knowledge and improve health advice given to women and their partners during antenatal care so that pregnant women can make informed decisions about their lifestyle. The questionnaire will take about 25 minutes to fill out. All information you provide will be coded and stored securely to assure your answers are confidential.

*Please fill out this questionnaire if you are 18 years or older, have given birth in the last 12 months and you live in Merseyside.*

Thank you for your help

I have read the information about the research and I am happy to take part in the survey (please tick) ☐

#### HOW TO COMPLETE THE SURVEY:

- Read the questions carefully and answer them honestly.
- It might be hard to remember things about when you were pregnant, if you are unsure please provide your best guess.
- Make a clear tick or write clearly in the boxes (as shown).  
- Make sure your answer applies to you. If your answer means you need to skip the next question there will be an instruction. (For example → Q.10 means you need to go to question 10).
- When you have completed the questionnaire, put it in the attached envelope and send it by post or give it back to the researcher (if it is given to you in person).
- Remember that your answers will remain confidential.



## YOUR PREGNANCY

All questions about pregnancy in this survey are about your most recent pregnancy

1. Was your most recent pregnancy the first time you became a parent?

Yes ☐

No ☐

2. Was your most recent pregnancy planned? (Were you trying to get pregnant)

Yes ☐

No ☐

3. How many weeks OR months pregnant were you when you realised that you were pregnant?

Weeks

OR

Months

4. How long ago was it since you gave birth?

Weeks

OR

Months

5. When you found out that you were pregnant, did you change your diet in any of the following ways? (Tick all that apply; if it applies to you, tick 'yes' and if it doesn't apply to you tick 'no')

	Yes	No
I made no changes to my diet or supplements	<input type="checkbox"/>	<input type="checkbox"/>
I was already taking supplements (E.g. Folic acid, minerals)	<input type="checkbox"/>	<input type="checkbox"/>
I started taking supplements (E.g. Folic acid, minerals)	<input type="checkbox"/>	<input type="checkbox"/>
I ate <u>more</u> healthily	<input type="checkbox"/>	<input type="checkbox"/>
I ate <u>less</u> healthily	<input type="checkbox"/>	<input type="checkbox"/>
I avoided certain foods (E.g. raw eggs, certain cheeses)	<input type="checkbox"/>	<input type="checkbox"/>
Other	<input type="checkbox"/>	<input type="checkbox"/>

6. When you found out that you were pregnant, did you change your lifestyle in any of the following areas? (Tick one option for each. Drugs are for example cannabis or amphetamine)

	Smoking	Drugs	Alcohol	
Didn't use anyway	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	→ Q.8
Continued as before	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	→ Q.8
Stopped using	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Used less	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Used more	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Other (please specify below)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

7. Why did you change your drinking habits during pregnancy? (Tick all that apply; if it applies to you, tick 'yes' and if it doesn't apply to you tick 'no')

	Yes	No
Alcohol made me feel sick/unwell	<input type="checkbox"/>	<input type="checkbox"/>
Alcohol might harm my baby	<input type="checkbox"/>	<input type="checkbox"/>
I disliked the taste of alcohol when I was pregnant	<input type="checkbox"/>	<input type="checkbox"/>
Alcohol cheered me up and made me feel better	<input type="checkbox"/>	<input type="checkbox"/>
I had personal/family problems	<input type="checkbox"/>	<input type="checkbox"/>
Other (please specify below)	<input type="checkbox"/>	<input type="checkbox"/>

## ALCOHOL

These questions are about your alcohol habits before and after you found out that you were pregnant

### ALCOHOL HABITS IN THE 3 MONTHS BEFORE YOU FOUND OUT THAT YOU WERE PREGNANT

8. How often did you typically drink alcohol in the 3 months before you found out that you were pregnant? This excludes drinking at special occasions (e.g. birthday party or at Christmas). (Tick one)

- Never ☐ → Q.10  
 Once per month or less ☐  
 2-4 times per month ☐  
 2-3 times per week ☐  
 Daily or almost daily ☐

9. How much alcohol did you drink on a typical drinking occasion in the 3 months before you found out that you were pregnant? This excludes drinking at special occasions (e.g. birthday party or at Christmas). (Please write the number of each type of drink in the boxes below, if none write '0')

- Regular glass of wine (175ml)   
 Large glass of wine (250ml)   
 Bottle of wine (750ml)   
 Bottle or can of beer, lager or cider (330ml)   
 Pint of beer, lager or cider   
 Small bottle of alcopop (275 ml)   
 (1 big bottle=3 small bottles)  
 Shots or spirits (singles, 25ml)   
 Glass of fortified wine (50ml)   
 Cocktails   
 Other (please specify below)

10. How many special occasions, where you drank alcohol, did you go to in the 3 months before you found out that you were pregnant? That is special occasions in addition to your typical drinking pattern (e.g. birthday party or at Christmas). (Please enter the number of each occasion in the boxes below, if none write '0')

I did not drink at any special occasions (please tick) ☐ → Q.12

- Birthday party   
 Wedding   
 Bank holiday (e.g. Christmas, Easter)   
 Sport event   
 Other (e.g. funerals, big family celebration)

11. How much alcohol did you drink on a typical special occasion, in the 3 months before you found out that you were pregnant? (Please write the number of each type of drink in the boxes below, if none write '0')

- Regular glass of wine (175ml)   
 Large glass of wine (250ml)   
 Bottle of wine (750ml)   
 Bottle or can of beer, lager or cider (330ml)   
 Pint of beer, lager or cider   
 Small bottle of alcopop (275 ml)   
 (1 big bottle=3 small bottles)  
 Shots or spirits (singles, 25ml)   
 Glass of fortified wine (50ml)   
 Cocktails   
 Other (please specify below)

## ALCOHOL HABITS UNTIL WEEK 12

12. How often did you typically drink alcohol from when you found out you were pregnant until week 12? This excludes drinking at special occasions (e.g. birthday party or at Christmas). (Tick one)

I didn't find out about the pregnancy until after week 12 (please tick) ☐ → Q.16

- Never ☐ → Q.14
- Once per month or less ☐
- 2-4 times per month ☐
- 2-3 times per week ☐
- Daily or almost daily ☐

13. How much alcohol did you drink on a typical drinking occasion from when you found out you were pregnant until week 12? This excludes drinking at special occasions (e.g. birthday party or at Christmas). (Please write the number of each type of drink in the boxes below, if none write '0')

- Regular glass of wine (175ml)
- Large glass of wine (250ml)
- Bottle of wine (750ml)
- Bottle or can of beer, lager or cider (330ml)
- Pint of beer, lager or cider
- Small bottle of alcopop (275 ml)
- (1 big bottle=3 small bottles)
- Shots or spirits (singles, 25ml)
- Glass of fortified wine (50ml)
- Cocktails
- Other (please specify below)

14. How many special occasions, where you drank alcohol, did you go to from when you found out you were pregnant until week 12? That is special occasions in addition to your typical drinking pattern (e.g. birthday party or at Christmas). (Please enter the number of each occasion in the boxes below, if none write '0')

I did not drink at any special occasions (please tick) ☐ → Q.16

- Birthday party
- Wedding
- Bank holiday (e.g. Christmas, Easter)
- Sport event
- Other (e.g. funerals, big family celebration)

15. How much alcohol did you drink on a typical special occasion, from when you found out you were pregnant until week 12? That is special occasions in addition to your typical drinking pattern (e.g. birthday party or at Christmas). (Please write the number of each type of drink in the boxes below, if none write '0')

- Regular glass of wine (175ml)
- Large glass of wine (250ml)
- Bottle of wine (750ml)
- Bottle or can of beer, lager or cider (330ml)
- Pint of beer, lager or cider
- Small bottle of alcopop (275 ml)
- (1 big bottle=3 small bottles)
- Shots or spirits (singles, 25ml)
- Glass of fortified wine (50ml)
- Cocktails
- Other (please specify below)

# ALCOHOL HABITS WEEK 13-27

16. How often did you typically drink alcohol when you were 13-27 weeks pregnant? This excludes drinking at special occasions (e.g. birthday party or at Christmas). (Tick one)

- Never ☐ → Q.18  
 Once per month or less ☐  
 2-4 times per month ☐  
 2-3 times per week ☐  
 Daily or almost daily ☐

17. How much alcohol did you drink on a typical drinking occasion when you were 13-27 weeks pregnant? This excludes drinking at special occasions (e.g. birthday party or at Christmas). (Please write the number of each type of drink in the boxes below, if none write '0')

- Regular glass of wine (175ml)   
 Large glass of wine (250ml)   
 Bottle of wine (750ml)   
 Bottle or can of beer, lager or cider (330ml)   
 Pint of beer, lager or cider   
 Small bottle of alcopop (275 ml)   
 (1 big bottle=3 small bottles)  
 Shots or spirits (singles, 25ml)   
 Glass of fortified wine (50ml)   
 Cocktails   
 Other (please specify below)




18. How many special occasions, where you drank alcohol, did you go to when you were 13-27 weeks pregnant? That is special occasions in addition to your typical drinking pattern (e.g. birthday party or at Christmas). (Please enter the number of each occasion in the boxes below, if none write '0')

I did not drink at any special occasions (please tick) ☐ → Q.20

- Birthday party   
 Wedding   
 Bank holiday (e.g. Christmas, Easter)   
 Sport event   
 Other (e.g. funerals, big family celebration)

19. How much alcohol did you drink on a typical special occasion, where you drank alcohol, when you were 13-27 weeks pregnant? (Please write the number of each type of drink in the boxes below, if none write '0')

- Regular glass of wine (175ml)   
 Large glass of wine (250ml)   
 Bottle of wine (750ml)   
 Bottle or can of beer, lager or cider (330ml)   
 Pint of beer, lager or cider   
 Small bottle of alcopop (275 ml)   
 (1 big bottle=3 small bottles)  
 Shots or spirits (singles, 25ml)   
 Glass of fortified wine (50ml)   
 Cocktails   
 Other (please specify below)



# ALCOHOL HABITS FROM WEEK 28 UNTIL BIRTH

20. How often did you typically drink alcohol from 28 weeks of pregnancy until giving birth? This excludes drinking at special occasions (e.g. birthday party or at Christmas). (Tick one)

I gave birth before week 28 (please tick) ☐ → Q.24

- Never ☐ → Q.22
- Once per month or less ☐
- 2-4 times per month ☐
- 2-3 times per week ☐
- Daily or almost daily ☐

21. How much alcohol did you drink on a typical drinking occasion from 28 weeks of pregnancy until giving birth? This excludes drinking at special occasions (e.g. birthday party or at Christmas). (Please write the number of each type of drink in the boxes below, if none write '0')

- Regular glass of wine (175ml)
- Large glass of wine (250ml)
- Bottle of wine (750ml)
- Bottle or can of beer, lager or cider (330ml)
- Pint of beer, lager or cider
- Small bottle of alcopop (275 ml)
- (1 big bottle=3 small bottles)
- Shots or spirits (singles, 25ml)
- Glass of fortified wine (50ml)
- Cocktails
- Other (please specify below)

22. How many special occasions, where you drank alcohol, did you go to from 28 weeks of pregnancy until giving birth? That is special occasions in addition to your typical drinking pattern (e.g. birthday party or at Christmas). (Please write the number of each type of drink in the boxes below, if none write '0')

I did not drink at any special occasions (please tick) ☐ → Q.24

- Birthday party
- Wedding
- Bank holiday (e.g. Christmas, Easter)
- Sport event
- Other (e.g. funerals, big family celebration)

23. How much did you drink on a typical special occasion, where you drank alcohol, from 28 weeks of pregnancy until giving birth? (Please write the number of each type of drink in the boxes below, if none write '0')

- Regular glass of wine (175ml)
- Large glass of wine (250ml)
- Bottle of wine (750ml)
- Bottle or can of beer, lager or cider (330ml)
- Pint of beer, lager or cider
- Small bottle of alcopop (275 ml)
- (1 big bottle=3 small bottles)
- Shots or spirits (singles, 25ml)
- Glass of fortified wine (50ml)
- Cocktails
- Other (please specify below)

## PARTNER AND ANTENATAL CARE

This section is about your relationship with your partner, your partner's drinking habits, and information and advice about alcohol during your antenatal care

24. Do you have a partner?

Yes ☐

No ☐ → Q.33

25. Is your partner:

Male ☐

Female ☐

26. Has your partner ever drunk alcohol?

Yes ☐

No ☐ → Q.30

27. How often did your partner drink in the 3 months before you found out about the pregnancy?

Never ☐

Once per month or less ☐

2-4 times per month ☐

2-3 times per week ☐

Daily or almost daily ☐

28. How often did your partner drink when you were pregnant?

Never ☐

Once per month or less ☐

2-4 times per month ☐

2-3 times per week ☐

Daily or almost daily ☐

29. Did your partner change their drinking habits in any way when you got pregnant?

(Tick one)

My partner drank less alcohol than usual ☐

My partner stopped drinking alcohol ☐

My partner didn't change drinking habits ☐

My partner drank more alcohol than usual ☐

My partner didn't drink alcohol before or ☐

while I was pregnant

My partner started drinking alcohol ☐

when I got pregnant

30. How happy are you in your relationship with your partner?

(1 – Extremely unhappy and 5 – Extremely happy)

1 2 3 4 5  
☐ ☐ ☐ ☐ ☐

31. How easy do you find it to talk about feelings or problems with your partner?

(1 – Very difficult and 5 – Very easy)

1 2 3 4 5  
☐ ☐ ☐ ☐ ☐

32. How often do you quarrel with your partner? (Tick one)

We quarrel a lot and have physical fights ☐

We quarrel a lot but no or few physical fights ☐

We quarrel sometimes but do not have physical fights ☐

We rarely quarrel and do not have physical fights ☐

We never quarrel or have physical fights ☐



33. Did you get any advice about any of the following lifestyle areas during your antenatal care? (Tick all that apply for each column)

	Alcohol	Smoking	Drugs	Nutrition
Verbal information/advice	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Written information/advice	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I don't remember	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
None received	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

34. What applies best about information and/or advice that you got during your antenatal care about drinking alcohol in pregnancy? (Tick all that apply; if it applies to you, tick 'yes' and if it doesn't apply to you tick 'no')

I was informed/advised...	Yes	No
...to drink less alcohol	<input type="checkbox"/>	<input type="checkbox"/>
...to not drink alcohol at all	<input type="checkbox"/>	<input type="checkbox"/>
...that drinking alcohol could harm the baby	<input type="checkbox"/>	<input type="checkbox"/>
...about the effects of alcohol on the baby	<input type="checkbox"/>	<input type="checkbox"/>
...that small amounts of alcohol was okay after the first 12 weeks	<input type="checkbox"/>	<input type="checkbox"/>
I don't know/I don't remember	<input type="checkbox"/>	<input type="checkbox"/>
Other	<input type="checkbox"/>	<input type="checkbox"/>
I did not get any information or advice about alcohol in my antenatal care	<input type="checkbox"/>	<input type="checkbox"/>

35. Did your partner attend antenatal care with you? (That is appointments with the midwife, not classes)

Yes	<input type="checkbox"/>	
No	<input type="checkbox"/>	→ Q.37
I don't know/I don't remember	<input type="checkbox"/>	→ Q.37
I don't have a partner	<input type="checkbox"/>	→ Q.37

36. Was your partner advised to support you by not drinking alcohol when you were pregnant?

Yes	<input type="checkbox"/>
No	<input type="checkbox"/>
I don't know/I don't remember	<input type="checkbox"/>

37. Did you get information or advice about alcohol and pregnancy from anywhere/anyone else apart from antenatal care?

Yes (please specify below)	<input type="checkbox"/>
No	<input type="checkbox"/>
I don't know/I don't remember	<input type="checkbox"/>

## LIFESTYLE AND ADVICE DURING PREGNANCY

In this section we want to know what you think about risks for the baby and lifestyle factors during pregnancy

38. This section is about what you think about lifestyle during pregnancy. For each statement indicate to what degree you agree or disagree (1 – Strongly disagree and 5 – Strongly agree)

Drinking alcohol during pregnancy is always related to risks for the baby	1	2	3	4	5
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

If a woman feels good by having for example just one glass of wine it's not harmful to the baby

1	2	3	4	5
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

There are other things that are more harmful to the baby than alcohol

1 2 3 4 5  
☐ ☐ ☐ ☐ ☐

Drinking alcohol during pregnancy should only be avoided the first 12 weeks

1 2 3 4 5  
☐ ☐ ☐ ☐ ☐

Smoking during pregnancy is always related to risks for the baby

1 2 3 4 5  
☐ ☐ ☐ ☐ ☐

Smoking during pregnancy is more harmful to the baby than drinking alcohol

1 2 3 4 5  
☐ ☐ ☐ ☐ ☐

Smoking cannabis during pregnancy is always related to risks for the baby

1 2 3 4 5  
☐ ☐ ☐ ☐ ☐

Taking illicit drugs (e.g. cocaine) during pregnancy is always related to risks for the baby

1 2 3 4 5  
☐ ☐ ☐ ☐ ☐

It is important to eat healthily when you are pregnant

1 2 3 4 5  
☐ ☐ ☐ ☐ ☐

Advice/information to women and partners about drinking alcohol during pregnancy is unclear

1 2 3 4 5  
☐ ☐ ☐ ☐ ☐

Advice/information to women and partners about smoking during pregnancy is unclear

1 2 3 4 5  
☐ ☐ ☐ ☐ ☐

Advice/information to women and partners about smoking cannabis or using illicit drugs (e.g. cocaine) during pregnancy is unclear

1 2 3 4 5  
☐ ☐ ☐ ☐ ☐

Advice/information to women and partners about food and nutrition during pregnancy is unclear

1 2 3 4 5  
☐ ☐ ☐ ☐ ☐

What I was told in antenatal care helped me to change my lifestyle during pregnancy

1 2 3 4 5  
☐ ☐ ☐ ☐ ☐

Pregnant women are told too much about what they can and can't do during pregnancy

1 2 3 4 5  
☐ ☐ ☐ ☐ ☐

39. Do you think that there is a safe amount of drinking during pregnancy? (An amount which is okay to drink without harming the baby)?

Yes ☐  
No ☐ → Q.41  
I don't know ☐ → Q.41

40. If yes; how much and how often do you think is okay for a woman to drink during pregnancy? (Please specify below)





## BACKGROUND

Finally, we just want some background information about you

41. How old are you?

Years

42. What is the highest level of education that you have completed?

- |          |                          |                            |                          |
|----------|--------------------------|----------------------------|--------------------------|
| None     | <input type="checkbox"/> | College/BTECH              | <input type="checkbox"/> |
| GCSE     | <input type="checkbox"/> | University (undergraduate) | <input type="checkbox"/> |
| A-levels | <input type="checkbox"/> | University (postgraduate)  | <input type="checkbox"/> |

43. What was your employment status before you got pregnant?

- |                      |                          |                |                          |
|----------------------|--------------------------|----------------|--------------------------|
| Full-time employment | <input type="checkbox"/> | Long-term sick | <input type="checkbox"/> |
| Part-time employment | <input type="checkbox"/> | Unemployed     | <input type="checkbox"/> |
| Self-employed        | <input type="checkbox"/> | Other          | <input type="checkbox"/> |
| Student              | <input type="checkbox"/> |                |                          |

44. What was your annual pre-tax household income before you got pregnant?

- |                  |                          |                   |                          |
|------------------|--------------------------|-------------------|--------------------------|
| £20,000 or under | <input type="checkbox"/> | £60,001 – £80,000 | <input type="checkbox"/> |
| £20,001 – 40,000 | <input type="checkbox"/> | £80,001 – 100,000 | <input type="checkbox"/> |
| £40,001 – 60,000 | <input type="checkbox"/> | Over £100,001     | <input type="checkbox"/> |

45. What is your relationship status?

- |                   |                          |                    |                          |
|-------------------|--------------------------|--------------------|--------------------------|
| Single            | <input type="checkbox"/> | Married            | <input type="checkbox"/> |
| In a relationship | <input type="checkbox"/> | Divorced/separated | <input type="checkbox"/> |
| Cohabiting        | <input type="checkbox"/> | Widowed            | <input type="checkbox"/> |
| Civil partnership | <input type="checkbox"/> | Other              | <input type="checkbox"/> |

46. What is your ethnicity?

- |                     |                          |                         |                          |
|---------------------|--------------------------|-------------------------|--------------------------|
| White: British      | <input type="checkbox"/> | White: European         | <input type="checkbox"/> |
| White: Irish        | <input type="checkbox"/> | White: Other            | <input type="checkbox"/> |
| Mixed race          | <input type="checkbox"/> | Black/Black British     | <input type="checkbox"/> |
| Asian/Asian British | <input type="checkbox"/> | Chinese/Chinese British | <input type="checkbox"/> |
| Other               | <input type="checkbox"/> |                         |                          |

47. What is your postcode?

(This is only for analysis purposes. This will not be used to contact you or shared with anyone else)

48. Please enter today's date (DD/MM/YYYY):

**Thank you for  
taking part!**

## Appendix D - Questionnaire to partners



For researcher use

Code: \_\_\_\_\_

### Alcohol and Pregnancy Survey - Questionnaire for Partners of Women Who Have Recently Been Pregnant



This is a survey about alcohol and pregnancy among women and their partners in Merseyside. The questionnaire is part of a research project looking at lifestyle factors, with a focus on alcohol use, during pregnancy. We hope the results will help to increase knowledge and improve health advice given to women and their partners during antenatal care so that pregnant women can make informed decisions about their lifestyle. The questionnaire will take about 20 minutes to fill out. All information you provide will be coded and stored securely to assure your answers are kept confidential.

*Please fill out this questionnaire if you are 18 years or older, your partner gave birth within the last 12 months and you live in Merseyside.*

Thank you for your help

I have read the information about the research and I am happy to take part in the survey (please tick) ☐

#### HOW TO COMPLETE THE SURVEY:

- Read the questions carefully and answer them honestly.
- It might be hard to remember things about when your partner was pregnant, if you are unsure please provide your best guess
- Make a clear tick or write clearly in the boxes (as shown).  
- Make sure your answer applies to you. If your answer means you need to skip the next question there will be an instruction. (For example → Q.10 means you need to go to question 10).
- When you have completed the questionnaire, put it in the attached envelope and send it by post or give it back to the researcher (if it is given to you in person).
- Remember that your answers are confidential.

## PREGNANCY AND ALCOHOL

*This section is about how it was with your partner's most recent pregnancy and your alcohol habits before and during your partner's pregnancy. All questions about pregnancy in this survey relate to your partner's most recent pregnancy*

1. Was your partner's most recent pregnancy the first time you became a parent?

Yes ☐  
No ☐

2. Was the most recent pregnancy planned?  
(Were you trying to get pregnant)

Yes ☐  
No ☐

3. How many weeks OR months ago did your partner give birth?

Weeks   
OR  
Months

4. Did you change your drinking habits in any way after you found out that your partner was pregnant? (Tick one)

I drank less alcohol than usual ☐  
I stopped drinking alcohol ☐  
I didn't change my drinking habits ☐  
I drank more alcohol than usual ☐  
I didn't drink alcohol before or while my partner was pregnant ☐ → Q.15  
I started drinking alcohol when my partner got pregnant ☐

### ALCOHOL HABITS 3 MONTHS BEFORE YOU FOUND OUT YOUR PARTNER WAS PREGNANT

5. In the 3 months before you found out that your partner was pregnant, did you drink alcohol?

Yes ☐  
No ☐ → Q.10

6. How often did you typically drink alcohol in the 3 months before you found out that your partner was pregnant? This excludes drinking at special occasions (e.g. birthday party or at Christmas). (Tick one)

Never ☐ → Q.8  
Once a month or less ☐  
2-4 times per month ☐  
2-3 times per week ☐  
Daily or almost daily ☐

7. How much alcohol did you drink on a typical drinking occasion in the 3 months before you found out that your partner was pregnant? This excludes drinking at special occasions (e.g. birthday party or at Christmas). (Please write the number of each type of drink in the boxes below, if none write '0')

Regular glass of wine (175ml)   
Large glass of wine (250ml)   
Bottle of wine (750ml)   
Bottle or can of beer, lager or cider (330ml)   
Pint of beer, lager or cider   
Small bottle of alcopop (275 ml)   
(1 big bottle=3 small bottles)  
Shots or spirits (singles, 25ml)   
Glass of fortified wine (50ml)   
Cocktails   
Other (please specify below)

8. How many special occasions, where you drank alcohol, did you go to in the 3 months before you found out that your partner was pregnant? That is special occasions in addition to your typical drinking pattern (e.g. birthday party or at Christmas). (Please enter the number of each occasion in the boxes below, if none write '0')

I did not drink at any special occasions (please tick) ☐ → Q.10

Birthday party   
 Wedding   
 Bank holiday (e.g. Christmas, Easter)   
 Sport event   
 Other (e.g. funerals, big family celebration)

9. How much alcohol did you drink on a typical special occasion, in the 3 months before you found out that your partner was pregnant? That is special occasions in addition to your typical drinking pattern (e.g. birthday party or at Christmas). (Please write the number of each type of drink in the boxes below, if none write '0')

Regular glass of wine (175ml)   
 Large glass of wine (250ml)   
 Bottle of wine (750ml)   
 Bottle or can of beer, lager or cider (330ml)   
 Pint of beer, lager or cider   
 Small bottle of alcopop (275 ml)   
 (1 big bottle=3 small bottles)  
 Shots or spirits (singles, 25ml)   
 Glass of fortified wine (50ml)   
 Cocktails   
 Other (please specify below)




## ALCOHOL HABITS WHEN YOUR PARTNER WAS PREGNANT

10. When your partner was pregnant, did you drink alcohol?

Yes ☐  
 No ☐ → Q.15

11. How often did you typically drink alcohol when your partner was pregnant? (Tick one)

Never ☐ → Q.13  
 Once per month or less ☐  
 2-4 times per month ☐  
 2-3 times per week ☐  
 Daily or almost daily ☐

12. How much alcohol did you drink on a typical drinking occasion when your partner was pregnant? This excludes drinking at special occasions (e.g. birthday party or at Christmas). Please write the number of each type of drink in the boxes below, if none write '0')

Regular glass of wine (175ml)   
 Large glass of wine (250ml)   
 Bottle of wine (750ml)   
 Bottle or can of beer, lager or cider (330ml)   
 Pint of beer, lager or cider   
 Small bottle of alcopop (275 ml)   
 (1 big bottle=3 small bottles)  
 Shots or spirits (singles, 25ml)   
 Glass of fortified wine (50ml)   
 Cocktails   
 Other (please specify below)



13. How many special occasions, where you drank alcohol, did you go to when your partner was pregnant? That is special occasions in addition to your typical drinking pattern (e.g. birthday party or at Christmas). (Please enter the number of each occasion in the boxes below, if none write '0')

I did not drink at any special occasions (please tick) ☐ → Q.15

Birthday party   
 Wedding   
 Bank holiday (e.g. Christmas, Easter)   
 Sport event   
 Other (e.g. funerals, big family celebration)

14. How much did you drink on a typical special occasion, where you drank alcohol, when your partner was pregnant? That is special occasions in addition to your typical drinking pattern (e.g. birthday party or at Christmas). Please write the number of each type of drink in the boxes below, if none write '0'

Regular glass of wine (175ml)   
 Large glass of wine (250ml)   
 Bottle of wine (750ml)   
 Bottle or can of beer, lager or cider (330ml)   
 Pint of beer, lager or cider   
 Small bottle of alcopop (275 ml)   
 (1 big bottle=3 small bottles)  
 Shots or spirits (singles, 25ml)   
 Glass of fortified wine (50ml)   
 Cocktails   
 Other (please specify below)




15. Has your partner ever drunk alcohol? (Tick one)

Yes ☐  
 No ☐ → Q.18

16. Did you partner drink alcohol in the 3 months before she found out that she was pregnant? (Tick one)

Yes, she did drink alcohol ☐  
 Yes, she drank a little bit on a rare occasion ☐  
 No, she did not drink alcohol at all ☐  
 I don't know/I don't remember ☐

17. Did your partner drink alcohol when she was pregnant? Tick one)

Yes, she did drink alcohol ☐  
 Yes, she drank a little bit on a rare occasion ☐  
 No, she did not drink alcohol at all ☐  
 I don't know/I don't remember ☐

## PARTNER AND ANTENATAL CARE

*This section is about your relationship and your experience of advice in antenatal care*

18. How happy are you in your relationship with your partner?

(1 – Extremely unhappy and 5 – Extremely happy)

1	2	3	4	5
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

19. How easy do you find it to talk about feelings or problems with your partner?

(1 – Very difficult and 5 – Very easy)

1	2	3	4	5
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

20. How often do you quarrel with your partner? (Tick one)

We quarrel a lot and have physical fights ☐

We quarrel a lot but no or few physical fights ☐

We quarrel sometimes but do not have physical fights ☐

We rarely quarrel and do not have physical fights ☐

We never quarrel or have physical fights ☐

21. Did you attend antenatal care with your partner? (That is appointments with the midwife, not classes)

Yes ☐

No ☐

I don't know/I don't remember ☐

22. Did your partner get any advice and/or information about the following lifestyle factors in antenatal care, either when you were present or at any of her visits? (Tick all that apply for each column)

	Alcohol	Smoking	Drugs	Nutrition
Verbal information/advice	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Written information/advice	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I don't know/don't remember	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
None received	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

23. What best describes the information and/or advice your partner, to your knowledge, got in antenatal care about drinking alcohol in pregnancy? (Tick all that apply)

I don't know/I don't remember (please tick) ☐ → Q.24

She was informed/advised... ☒ ☒

...to drink less alcohol ☐ ☐

...to not drink alcohol at all ☐ ☐

...that drinking alcohol could harm the baby ☐ ☐

...about the effects of alcohol on the baby ☐ ☐

...that small amounts of alcohol was okay after the first 12 weeks ☐ ☐

Other ☐ ☐

She did not get any information/advice about alcohol during the antenatal care ☐ ☐

Advice/information to women and partners about food and nutrition to pregnant women is unclear

1                      2                      3                      4                      5

☐                      ☐                      ☐                      ☐                      ☐

Pregnant women are told too much about what they can and can't do during pregnancy

1                      2                      3                      4                      5

☐                      ☐                      ☐                      ☐                      ☐

**27. Do you think that there is a safe amount of drinking during pregnancy? (An amount which is okay to drink without harming the baby)?**

Yes ☐

No ☐ → Q.29

I don't know ☐ → Q.29

**28. If yes; how much and how often do you think is okay for a woman to drink during pregnancy? (Please specify below)**

↓



## BACKGROUND

Finally, we just want some background information about you

29. Are you?

Male ☐

Female ☐

30. How old are you?

Years

31. What is the highest level of education that you have completed?

None ☐ College/BTECH ☐

GCSE ☐ University (undergraduate) ☐

A-levels ☐ University (postgraduate) ☐

32. What was your employment status before your partner got pregnant?

Full-time employment ☐ Long-term sick ☐

Part-time employment ☐ Unemployed ☐

Self-employed ☐ Other ☐

Student ☐

33. What was your annual pre-tax household income before your partner got pregnant?

£20,000 or under ☐ £20,001 – £40,000 ☐

£40,001 – £60,000 ☐ £60,001 – 80,000 ☐

£80,001 – £100,000 ☐ Over £100,000 ☐

34. What is your relationship status?

In a relationship ☐ Civil partnership ☐

Married ☐ Other ☐

Cohabiting ☐

35. What is your ethnicity?

White: British ☐ White: European ☐

White: Irish ☐ White: Other ☐

Mixed race ☐ Black/Black British ☐

Asian/Asian British ☐ Chinese/Chinese British ☐

Other ☐

36. What is your postcode?

*(This is only for analysis purposes. This will not be used to contact you or shared with anyone else)*

37. Please enter today's date (DD/MM/YYYY):

**Thank you for  
taking part!**



## Appendix E – Recruitment letter, interview study with parents



### Volunteers required for study about alcohol in pregnancy and advice in antenatal care in Merseyside

We are doing a study about experiences and attitudes of alcohol during pregnancy. This is part of a PhD research project and we are looking for women and partners of women who gave birth in the last 18 months. If you take part, you will be interviewed about your perception of alcohol consumption during pregnancy, and your thoughts on advice you might have received in antenatal care. Participants will be given a £10 shopping voucher for their time.

You can take part if you are a woman or a partner of a woman who gave birth in the last 18 months, you are over 18 years old and live in Merseyside. For more information please contact:

Lisa Schölin, PhD student  
Faculty of Education, Health and Community  
Liverpool John Moores University  
Email: [L.A.Scholin@2012.ljmu.ac.uk](mailto:L.A.Scholin@2012.ljmu.ac.uk)  
Tel: 0151 231 4441

## Appendix F – Participant information sheet, interview study with parents



### LIVERPOOL JOHN MOORES UNIVERSITY PARTICIPANT INFORMATION SHEET

**Title of Project:** Alcohol Use in Pregnancy and Perceptions of Advice Provided in Antenatal Care Settings in Merseyside

**Name of Researcher and School/Faculty:** Lisa Schölin, Faculty of Health and Applied Social Sciences

*You are being invited to take part in a study about alcohol use before and during pregnancy. You have been invited because you gave birth in the last 18 months, or you have a partner who gave birth in the last 18 months (hereby referred to as 'recently'). Before you decide if you want to take part in this study, it is important that you understand what the study is about. If you have any questions, feel free to contact the researcher.*

#### **1. What is the purpose of the study?**

*Women's lifestyle during pregnancy, especially alcohol use, has been widely researched over the last few years. However, women's and partner's experiences of alcohol use in pregnancy as well as information in antenatal care needs more research. More knowledge about this subject can help health care professionals so that they can support and give good advice to pregnant women and their partners. The aim of this study is to explore knowledge, experiences and perceptions of alcohol use in pregnancy and also alcohol advice in antenatal care.*

#### **2. Do I have to take part?**

*You decide if you want to take part in this study, and if you decide to take part you will be asked to confirm that you are giving the researcher the right to use your data for the purpose of the study. You can however decide to withdraw from the study at any time, and this will not affect your rights to any treatment or service you receive.*

#### **3. What will happen to me if I take part?**

*If you decide to take part in this study, you will take part in a face-to-face interview with the researcher. The interview will take up to an hour, and you will receive a £10 shopping voucher as a thank you for taking part. The interview will be audio recorded with your permission and you will be asked some background questions as well as questions about your/your partner's experience of alcohol use in pregnancy, your attitudes towards alcohol use in pregnancy, and experiences of advice about alcohol use during antenatal care. The recording and notes from the interview will be stored on a password protected server and in a locked cabinet at Liverpool John Moores University. Safe storage of the data you provide is important so you can feel sure that the material is only going to be used for the purpose of this study.*

**4. Are there any risks / benefits involved?**

*Talking about subjects such as alcohol use might be upsetting or distressing. If this should happen to you after you have filled out the questionnaire you are advised to seek support through Mersey Care NHS. Mersey Care provides information and support services to people living in the Merseyside area, and more information can be found in this guide; [http://www.merseycare.nhs.uk/Library/What\\_we\\_do/Corporate\\_Services/Communications/Se>If\\_help\\_guides/Alcohol%20and%20You.pdf](http://www.merseycare.nhs.uk/Library/What_we_do/Corporate_Services/Communications/Se>If_help_guides/Alcohol%20and%20You.pdf). There are no direct benefits for you by taking part in this study, but the results will help to improve services to pregnant women and their partners.*

**5. Will my taking part in the study be kept confidential?**

*Yes. The data you provide will be stored securely to make sure that your data is kept confidential throughout the research project.*

**Contact Details of Researcher**

Lisa Schölin  
PhD student  
Faculty of Health and Applied Sciences  
Liverpool John Moores University  
0151 231 4441  
[L.A.Scholin@2012.ljmu.ac.uk](mailto:L.A.Scholin@2012.ljmu.ac.uk)

**Contact details Supervisor**

Dr Loma Porcellato  
School of Health and Applied Social Sciences  
Liverpool John Moores University  
0151 231 4201  
[L.A.Porcellato@ljmu.ac.uk](mailto:L.A.Porcellato@ljmu.ac.uk)

# Appendix G – Interview schedule, women

Code: \_\_\_\_\_

## Interview Guide - Women

During this interview I would like to discuss your knowledge, attitudes and experiences about alcohol and pregnancy. I would also like to get your opinion on advice about alcohol in antenatal care. This study is part of my PhD project at LJMU and aims at getting a better understanding about perceptions and experience about alcohol in pregnancy. The interview is confidential and your name will not appear anywhere. I am not here to judge in anyway and there are no right or wrong answers, just answer what you think and not what you think I want to hear. So if this is okay with you, we can make a start? If you want to stop the interview at any time and withdraw from the study that is fine, and your data will not be used.

### Introduction

---

Can you tell me a little bit about yourself?

- Age \_\_\_\_\_
- Number of children \_\_\_\_\_
- Relationship status \_\_\_\_\_
- Education \_\_\_\_\_
- Job \_\_\_\_\_

### Alcohol

---

Can you tell me what you know about alcohol and pregnancy?

- *Where did this knowledge come from?*
- *What sources of information did you feel that you trusted about alcohol and pregnancy?*

Can you describe your alcohol habits before you got pregnant?

- *What type of drinker were you?*

If we focus on when you got pregnant, what were your alcohol habits like during pregnancy?

- *What type of drinker were you?*
- *What was the reason you did/didn't change your alcohol habits when you found out about the pregnancy*
- *Was there any differences compared to your previous pregnancy?*

[Don't have a partner – SKIP!] Let's talk about your partner's alcohol habits before you got pregnant, what were they like?

- *What type of drinker was he/she?*

**[Don't have a partner – SKIP!] And if we focus on his/her drinking habits when you were pregnant, what were they like?**

- *What type of drinker was he/she?*
- *What importance do you think your partners alcohol habits had for your decision to drink/not drink during pregnancy?*

---

#### Alcohol Advice in Antenatal Care

**Can you tell me a bit about your experience of receiving alcohol advice during your antenatal care?**

- *Did you and your midwife speak about alcohol?*
- *What did your midwife say about drinking alcohol during pregnancy?*
- *What did you think of the advice you got?*
- *Did the advice make any difference to your behaviour during pregnancy? IF YES: in what way? IF NO: what would have made a difference?*

**[Don't have a partner – SKIP!] Let us talk about your experience of antenatal care and your partner, how was your partner involved in talking about alcohol in antenatal care?**

- Support

---

#### Attitudes

**How do you feel about pregnant women drinking alcohol, in general?**

- Example: There have been incidents for example in restaurants when a waiter has refused to serve a pregnant woman alcohol. How do you feel about that?
- In your opinion, is it acceptable for a pregnant woman to drink alcohol?

**I have brought some examples of campaigns, from different countries, on alcohol and pregnancy. Can you tell me what you think of them?**

- Which one do you prefer?
- Which one do you think has the most impact? Why?
- In your opinion, what is the best way to reach out to pregnant women with information about alcohol and pregnancy?



## Appendix H – Interview guide, partners

Code: \_\_\_\_\_

### Interview guide for partners

During this interview I would like to discuss your knowledge, attitudes and experiences about alcohol and pregnancy. I would also like to get your opinion on advice about alcohol in antenatal care. This study is part of my PhD project at LJMU and aims at getting a better understanding about perceptions and experience about alcohol in pregnancy. The interview is confidential and your name will not appear anywhere. I am not here to judge in anyway and there are no right or wrong answers, just answer what you think and not what you think I want to hear. So if this is okay with you, we can make a start? If you want to stop the interview at any time and withdraw from the study that is fine, and your data will not be used.

#### Introduction

---

Can you tell me a little bit about yourself?

- Age \_\_\_\_\_
- Number of children \_\_\_\_\_
- Relationship status \_\_\_\_\_
- Education \_\_\_\_\_
- Job \_\_\_\_\_

#### Alcohol

---

Can you tell me what you know about alcohol and pregnancy?

- *Where did this information come from?*

Can you describe your partner's alcohol habits before she got pregnant?

- *What type of drinker was she?*

If we focus on when she was pregnant, what were her alcohol habits like?

- *What type of drinker was she?*
- *What were her reasons for drinking/not drinking?*
- *Was there any difference compared to her previous pregnancy/pregnancies?*



Let's talk about your alcohol habits before your partner got pregnant and when she was pregnant, what were they like?

- *What type of drinker were you?*
- *Were there any changes in your alcohol habits?*
- *What importance do you think your alcohol habits had for her decision to drink/not drink during pregnancy?*

#### Alcohol Advice in Antenatal Care

---

Did you go with your partner to any antenatal appointments to the midwife?

**IF YES:** can you tell me a bit about your experience of alcohol advice during in antenatal care?

- *Did the midwife talk about alcohol? What did she say?*
- *What did you think of the advice?*

**IF NO:** can you tell me what you know about any information your partner received about drinking during pregnancy when she went for appointments?

What other information or advice about alcohol did you and/or your partner come across when she was pregnant?

- *Friends, family or co-workers*
- *What's reliable information?*

#### Attitudes

---

How do you feel about pregnant women drinking alcohol, in general?

- *Example: There have been incidents for example in restaurants when a waiter has refused to serve a pregnant woman alcohol. How do you feel about that?*
- *In your opinion, is it acceptable for pregnant women to drink alcohol?*

I have brought some examples of campaigns, from different countries, on alcohol and pregnancy. Can you tell me what you think of them?

- *Which one do you prefer? Why?*
- *Which one do you think has the most impact?*
- *What do you think is the best way to deliver information about alcohol and pregnancy*

## Appendix I – Recruitment letter, interview study with midwives



Are you a midwife?

Do you give advice on alcohol  
use in pregnancy?

Why not volunteer for our study -  
we want to hear your views

*We are looking for midwives working in Merseyside to take part in an interview about their experiences and thoughts around women's alcohol habits in pregnancy, giving alcohol advice to pregnant women and their partners, and recommendations on alcohol use in pregnancy as part of a PhD study.*

*For further information please contact:*

**Lisa Schölin**  
**PhD Student**

**Liverpool John Moores University**

Henry Cotton Building 15-21 Webster Street, Liverpool, L3 2ET

e: [L.A.Scholin@2012.limu.ac.uk](mailto:L.A.Scholin@2012.limu.ac.uk) t: 0151 231 4441



## *PhD Project on Alcohol and Pregnancy*

### **Overview of PhD project**

This is a PhD project looking at alcohol and pregnancy from a public health perspective. Mixed methods are used to explore women's alcohol habits during pregnancy, but also their partner's habits. Previous research has indicated that there may be a relation between a woman's alcohol habits during pregnancy and her partner's habits, and we want to explore this further. We are therefore conducting three studies. 1) A survey on alcohol habits before and during pregnancy. 2) Interviews with new parents about their alcohol habits in pregnancy and their knowledge about risks with drinking, attitudes on alcohol use in pregnancy and advice in antenatal care. 3) Midwives' experiences of giving alcohol advice, thoughts on women's alcohol habits during pregnancy and the guidelines for alcohol advice in pregnancy. This project is a collaboration with Örebro University in Swedish, as we are also looking at similarities and differences between the two countries.

### **Volunteers wanted**

We are now looking for midwives working in the Merseyside area who would like to take part in our research project. This entails an interview with the PhD student running this project, at a time and location of your convenience. During the interview you will be asked about your thoughts around women's alcohol habits during pregnancy, potential influence from the partner, your views on giving alcohol advice, and perceptions around guidelines. The interviews are confidential and your name is not going to appear anywhere.

If you are interested and would like some more information, please contact:

**Lisa Schölin**  
**PhD Student**

**Liverpool John Moores University**

Henry Cotton Building 15-21 Webster Street, Liverpool, L3 2ET  
e: [L.A.Scholin@2012.ljmu.ac.uk](mailto:L.A.Scholin@2012.ljmu.ac.uk) t: 0151 231 4441

# Appendix J – Participant information sheet, interview study with midwives

**LIVERPOOL JOHN MOORES  
UNIVERSITY  
PARTICIPANT INFORMATION SHEET**



**Title of Project:** Alcohol Use in Pregnancy and Perceptions of Advice Provided in Antenatal Care Settings in Merseyside

**Name of Researcher and School/Faculty:** Lisa Schölin, Faculty of Education, Health and Community

*You are being invited to take part in an interview about alcohol use during pregnancy and alcohol advice in antenatal care. You have been invited because you work as a midwife. Before you decide if you want to take part in this study, it is important that you understand what the study is about. If you have any questions, feel free to contact the researcher.*

## 1. What is the purpose of the study?

*The issue of alcohol use in pregnancy has been widely debated over the last few years. Despite significant research on this topic, little is known about the risks of drinking small amounts of alcohol in pregnancy. Previous research has demonstrated that alcohol advice during antenatal care is important to pregnant women's lifestyle choices. The aim of this study is to explore the experiences of alcohol advice during antenatal care among midwives in Merseyside, to obtain better understanding about how midwives perceive policy and practice about alcohol advice and get a holistic view about this topic.*

## 2. Do I have to take part?

*You decide if you want to take part in this study, and if you decide to take part you will be asked to confirm that you are giving the researcher the right to use your data for the purpose of the study. You can however decide to stop the interview at any time.*

## 3. What will happen to me if I take part?

*If you decide to take part in this study, you will be interviewed by the researcher at a location of your convenience about your opinions and thoughts on this topic. The interview will take up to an hour and will be audio recorded with your permission. You will be asked to sign a consent form to confirm that you agree with taking part in the study and that you have read this information.*

## 4. Are there any risks / benefits involved?

*There are no anticipated risks with taking part in this study.*

*There are no direct benefits for the participants of the study, but the results will help inform policy and practice around alcohol and pregnancy in the future. If you take part you will get a £10 shopping voucher as thank you for your participation.*

**5. Will my taking part in the study be kept confidential?**

*Yes. Any personal information collected will be anonymised and remain confidential. If you are interviewed, any personal data collected will be kept securely for 5 years according to Liverpool John Moores University Research Ethics Committee recommendations and the Data Protection Act.*

*It is anticipated that the results of this study will be published in scientific journals and presented at meetings and conferences.*

**Contact Details of Researcher**

Lisa Schölin  
PhD student  
Faculty of Education, Health and Community  
Liverpool John Moores University  
0151 231 4441  
L.A.Scholin@2012.ljmu.ac.uk

**Contact details Supervisor**

Dr Lorna Porcellato  
Faculty of Education, Health and Community  
Liverpool John Moores University  
0151 231 4201  
L.A.Porcellato@ljmu.ac.uk

# Appendix K – Interview schedule, midwives

## Interview Guide - Midwives

During this interview I would like to discuss your experience of giving alcohol advice to pregnant women; your thoughts on involving the partner in alcohol advice; your attitudes towards alcohol use in pregnancy; your opinion on the guidelines for drinking during pregnancy; and your opinion on how to provide effective information about alcohol and pregnancy.

This study is part of my PhD which I am undertaking at LJMU and aims at getting a better understanding about what advice midwives give pregnant women and their partners, and how the guidelines are perceived. The interview is confidential and your name will not appear anywhere. I am not here to judge in anyway and there are no right or wrong answers just answer what you think and not what you think I want to hear. If you want to stop the interview at any time and withdraw from the study that is fine, and your data will not be used. I just want to confirm that you agree to have the interview audio recorded? So if this is okay with you, we can make a start?

### Introduction

---

Can you tell me a little bit about yourself?

- Age \_\_\_\_\_
- Number of children \_\_\_\_\_
- Years worked as midwife \_\_\_\_\_
- Area of practice in Merseyside: \_\_\_\_\_

### General Opinions

---

What is your view of pregnant women drinking alcohol?

- *When do you feel that a woman's drinking habits is a concern?*
- *What do you think influences women to drink when they are pregnant?*

### Experience and Practice

---

In your experience, what do women do about their drinking when they get pregnant?

- *What are women's main concerns about drinking alcohol from your experience?*

In your opinion, how knowledgeable are pregnant women about the risks with drinking alcohol?

- *What risks are they normally aware of?*

What are your experiences of the pregnant woman's partner and alcohol consumption?

- *What changes have you experienced that the partner makes when the woman is pregnant? Can you give an example?*
- *Do you think the partner's alcohol habits are important when the woman is pregnant? If yes: Why? If no: Why not?*

Can you tell me what you normally advise pregnant women to do regarding their alcohol habits?

- *Are there any barriers to talking to women about their alcohol habits?*
- *How comfortable do you feel comfortable about talking to women about their alcohol habits?*

I would like us to talk about the method that you currently use to talk to women about alcohol, what do you think about it?

- *What works well?*
- *What could be improved to provide effective advice?*

What are your opinions of the guidelines (*NICE; abstinence but no more than 1-2 units once-twice per week after first trimester*) to pregnant women?

- *Some women I have spoken to have found the advice confusing and especially mentioned concerns about drinking before knowing they were pregnant. What are your thoughts on how pregnant women perceive the advice?*

---

#### Guidelines and Information

Can you tell me a bit about what you know about alcohol-related birth defects (for example FAS or FASD)?

I have brought some different examples of leaflets to do with alcohol and pregnancy, from different countries. Can you tell me what you think of them?

- *Which approaches do you think are effective to inform women about drinking during pregnancy?*
- *What do you think is the best/most effective way to reach out to pregnant women with information about alcohol and pregnancy?*

---

Is there anything I haven't asked that you feel is important to say about alcohol and pregnancy or the guidelines and advice?

## Appendix L – Consent form, interview studies

**LIVERPOOL JOHN MOORES  
UNIVERSITY  
CONSENT FORM**



**Title of Project:** Alcohol Use in Pregnancy and Perceptions of Advice Provided in Antenatal Care Settings in Merseyside

**Name of Researcher and School/Faculty:** Lisa Schölin, Faculty of Health and Applied Social Sciences

1. I confirm that I have read and understand the information provided for the above study. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily ☐
2. I understand that my participation is voluntary and that I am free to withdraw at any time, without giving a reason and that this will not affect my legal rights. ☐
3. I understand that any personal information collected during the study will be anonymised and remain confidential ☐
4. I understand that the interview will be audio recorded and I am happy to proceed ☐
5. I understand that parts of our conversation may be used verbatim in future publications or presentations but that such quotes will be anonymised ☐
6. I agree to take part in the above study ☐

**Name of Participant:** \_\_\_\_\_ **Date:** \_\_\_\_\_ **Signature:** \_\_\_\_\_

**Name of Researcher:** \_\_\_\_\_ **Date:** \_\_\_\_\_ **Signature:** \_\_\_\_\_

## Appendix M – Alcohol and pregnancy pamphlets

### **National Organisation on Foetal Alcohol Spectrum Disorders (NOFASD), UK**

“How wonderful, you are going to be a father”

<http://www.nofas-uk.org/resources.php>

### **Helsedirektoratet, Norway**

“The best start possible”

<https://helsedirektoratet.no/Lists/Publikasjoner/Attachments/449/Alkoholfritt-svangerskap-den-beste-starten-rad-til-deg-som-planlegger-eller-venter-barn-IS-1758-engelsk.pdf>

### **Folkhälsomyndigheten, Sweden**

“En bra start” [*A good start*]

<https://www.folkhalsomyndigheten.se/pagefiles/12291/En-bra-start.pdf>

### **NHS Grampian, Scotland**

”Pregnancy, parenting and alcohol”

[http://www.nhsgrampian.org/grampianfoi/files/NHSG\\_Pregnancy\\_ParentingAlcohol.pdf](http://www.nhsgrampian.org/grampianfoi/files/NHSG_Pregnancy_ParentingAlcohol.pdf)

### **ULSS 9 of Treviso, Italy**

“Mamma beve bimbo beve” [*Mom drinks baby drinks*]

<http://www.mammabevebimbobeve.it/mamma-beve-bimbo-beve-2010/>



## Appendix N – Ethical approval letters



Dear Lisa

With reference to your application for Ethical approval:

**13/HEA/078 Lisa Schölin - PG Research, Alcohol and Pregnancy - Risk Factors for Drinking in Pregnancy and Perceptions of Advice Provided in Antenatal Care Settings in Merseyside (Mark Bellis)**

Liverpool John Moores University Research Ethics Committee (REC) has reviewed the above application and following the resolution of certain issues I am happy to inform you that the Committee are content to give a favourable ethical opinion and recruitment to the study can now commence.

Approval is given on the understanding that:

- any adverse reactions/events which take place during the course of the project will be reported to the Committee immediately;
- any unforeseen ethical issues arising during the course of the project will be reported to the Committee immediately;
- any substantive amendments to the protocol will be reported to the Committee immediately.
- the LJMU logo is used for all documentation relating to participant recruitment and participation eg poster, information sheets, consent forms, questionnaires. The JMU logo can be accessed at <http://www.ljmu.ac.uk/corporatecommunications/80488.htm>

For details on how to report adverse events or amendments please refer to the information provided at [http://www.ljmu.ac.uk/RGSO/RGSO\\_Docs/EC8Adverse.pdf](http://www.ljmu.ac.uk/RGSO/RGSO_Docs/EC8Adverse.pdf)

Please note that ethical approval is given for a period of five years from the date granted and therefore the expiry date for this project will be June 2018. An application for extension of approval must be submitted if the project continues after this date.

Yours sincerely

PP:

A handwritten signature in black ink, appearing to read "Sue Spiers".

Dr Sue Spiers  
Chair of the LJMU REC  
Tel: (0151) 904 6463  
E-mail: [s.spiers@ljmu.ac.uk](mailto:s.spiers@ljmu.ac.uk)

**ljmu.ac.uk**

Research Support Office,  
Kingsway House, Hatton Garden, Liverpool L3 2AJ



Dear Lisa

With reference to your application for Ethical approval:

Full Ethical Approval: Application for Ethical Approval No.: 14/EHC/027, Alcohol and Pregnancy - Risk Factors for Drinking in Pregnancy and Perceptions of Advice Provided in Antenatal Care Settings in Örebro County, Sweden (Prof Karen Hughes)

Liverpool John Moores University Research Ethics Committee (REC) has reviewed the above application and following the resolution of certain issues I am happy to inform you that the Committee are content to give a favourable ethical opinion and recruitment to the study can now commence.

Approval is given on the understanding that:

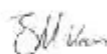
- any adverse reactions/events which take place during the course of the project will be reported to the Committee immediately;
- any unforeseen ethical issues arising during the course of the project will be reported to the Committee immediately;
- any substantive amendments to the protocol will be reported to the Committee immediately.
- the LJMU logo is used for all documentation relating to participant recruitment and participation eg poster, information sheets, consent forms, questionnaires. The JMU logo can be accessed at <http://www.ljmu.ac.uk/corporatecommunications/80486.htm>

For details on how to report adverse events or amendments please refer to the information provided at [http://www.ljmu.ac.uk/RGSO/RGSO\\_Docs/EC8Adverse.pdf](http://www.ljmu.ac.uk/RGSO/RGSO_Docs/EC8Adverse.pdf)

Please note that ethical approval is given for a period of five years from the date granted and therefore the expiry date for this project will be 3rd April 2019. An application for extension of approval must be submitted if the project continues after this date.

Yours sincerely

PP:



Dr Sue Spiers  
Chair of the LJMU REC  
Tel: (0151) 904 6463  
E-mail: [s.spiers@ljmu.ac.uk](mailto:s.spiers@ljmu.ac.uk)



BESLUT  
2014-04-09

Dnr 2014/132

**SÖKANDE FORSKNINGSHUVUDMAN**  
Örebro universitet  
701 82 Örebro

**Forskare som genomför projektet:**  
Charli Eriksson  
Inst. för hälsvetenskap och medicin  
Örebro universitet  
701 82 Örebro

**UPPGIFTER OM FORSKNINGSPROJEKTET ENLIGT ANSÖKAN  
INKOMMEN TILL NÄMNDEN 2014-03-19**

**Projektbeskrivning:**

Alkohol och Gravitetet - Riskfaktorer för alkoholkonsumtion under graviditeten och uppföljning om råd i mödravårdsvården

Regionala etikprövningsnämnden i Uppsala meddelar följande

**BESLUT**

Nämnden bifaller ansökan och godkänner med stöd av 6 § lagen (2003:460) om etikprövning av forskning som avser människor den forskning som anges i ansökan med följande villkor:

Informationsblad och posters kompletteras eller ändras så att:

1. det framgår att Örebro universitet är forskningshuvudman.
2. Charli Eriksson skrivs som huvudansvarig forskare och Lise Schölin som doktorand.
3. det i samtyckesblanketten finns en kryssruta för att markera samtycke till att känsliga personuppgifter får föras utomlands.
4. där finns den standardiserade formuleringen "Ingen obehörig kommer att få ta del av dina svar". Den ersätter i förekommande fall uttryck som innehåller "sekretess", "konfidentialitet", "anonymitet", "bara forskargruppen har tillgång till data" m.fl.

Adress  
Box 1964  
751 49 Uppsala

Telefon  
018-4717400

Fax  
018-4717410

E-post  
[registern@uppsala.se](mailto:registern@uppsala.se)

2014-04-09

Dnr 2014/132

I senvyckesblanketten ska:

1. Forskningspersonerna informeras om sina rättigheter enligt Personuppgiftslagen, liksom på följande sätt: "Personuppgiftsansvarig är Örebro universitet. Enligt personuppgiftslagen, PUL, (1998:204), har Du rätt att gratis en gång per år få ta del av samtliga uppgifter om Dig som hanteras och vid behov få eventuella fel rättade. Kontaktperson är ..." (liksomligen projektsvarig forskare med e-postadress och telefonnummer)

Den sökande uppmärksammas även på att godkännandet endast gäller den forskning som bedrivs i Sverige och att godkännandet inte ersätter eventuella tillstånd som kan krävas i andra länder.

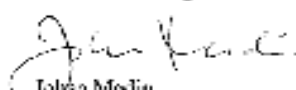
#### Erinran

Godkännandet upphör att gälla om forskningen inte har påbörjats inom två år efter slutgiltigt beslut.

#### BESLUTET FÅR ÖVERKLAGAS

Se bifogad anvisning.

På nämndens vägnar

  
Johan Modin  
Ordförande

#### Beslutande: Ledamöter med vetenskaplig kompetens

Staffan Hygge miljöpsykologi (vetenskaplig sekreterare), Bo Lewné sociologi (vetenskaplig sekreterare), Lena Ahlqvist psykologi, Daniela Andrén miljöekonometri, Henry Cöster sociologi, Katarina Eliasson miljöekonometri (föredragande), Marie Louise Hall-Lord vårdvetenskap, David Kronlid etik och didaktik, Annica Löfdahl Hultman pedagogiskt arbete, Gösta Ågren etologi

Ledamöter som företrädar allmänna intressen

Sture Deckman, Christer Hoel, Thomas Karlsson, Barbro Larsson, Michael Williams

#### Rap. till:

Forskare: Charlé Eriksson

Forskningshuvudansvaras föreskrare: tf. Profekt Margaretha Boo-Månander, Inst. för hälsovetenskap och medicin, Örebro universitet, 701 82 Örebro

Adress	Telefon	Fax	E-post
Box 1904 751 49 Uppsala	018 4717400	018 4717410	<a href="mailto:resimnord@npsid.se">resimnord@npsid.se</a>

**Decision**

**2014-04-09**

**Ref number: 2014/132**

**RESPONSIBLE RESEARCH BODY**

Örebro University  
701 82 Örebro

**Researcher conducting the project**

Charli Eriksson  
Faculty of Health and Medical Science  
Örebro University  
701 32 Örebro

**INFORMATION ABOUT RESEARCH PROJECT ACCORDING TO APPLICATION RECEIVED BY THE BOARD 2014-03-19**

**Project description:**

Alcohol and Pregnancy – Risk factors for alcohol consumption in pregnancy and perceptions of advice in antenatal care

---

Regional Ethical Review Board in Uppsala announce:

**DECISION**

The board approves the application and approves the research in the application with support by § 6 in the law (2003:460) regarding vetting the ethics of research that involves humans, under the following conditions:

Information sheets and posters shall be amended or changed so that:

1. It is clear that Örebro University is the responsible research body
2. That Charli Eriksson is down as the responsible researcher and that Lisa Schölin is down as PhD student
3. That there is a tick box in the consent form for consent for personal information to be transferred abroad
4. That there is the standard phrase "no unauthorised will have access to your answers". This will substitute expressions such as "confidentiality", "anonymity", "only the research team will have access to the data" etc.

Address	Telephone	Fax	Email
Box 1964 751 49 Uppsala	018-471700	018-4717410	<a href="mailto:registrator@uppsala.eon.se">registrator@uppsala.eon.se</a>

The consent form should:

1. Inform participants about their rights according to the Personal Data Act, preferably as following: "Responsible for personal data is Örebro University. According to the Personal Data Act (1998:204) you have the right to free of charge take part of all information about you that has been handled and if needed get potential errors corrected. Contact person is...." (preferably the researcher responsible for the project, with email address and telephone number).

The applicant is also made aware of that the approval only applies to research conducted in Sweden and that the approval does not substitute any approval that may be necessary in other countries.

#### **Admonition**

Approval ceases to apply if research has not commenced within two years of the final decision.

#### **THE DECISION CAN BE APPEALED**

See attached instruction

---

On behalf of the board

*[Signature]*

Johan Modin  
Chair

#### **Decision takers: members with research competence**

Stefan Hygge, Environment Psychology (scientific secretary); Bo Lewin, Sociology (scientific secretary); Lena Almqvist, Psychology; Daniela Andrén, National Economy; Henry Cöster, Theology; Katarina Elofsson, National Economy (Rapporteur); Marie Louise Hall-Lord, Nursing; David Kronlid, Ethics and Didactics; Annica Löfdal Hultman, Pedagogy; Grea Ågren, Etiology.

#### **Members representing public interest**

Sture Beckman, Christer Hoel, Thomas Karlsson, Barbro Larsson, Michael Williams.

#### **Send to:**

**Researcher:** Charli Eriksson

**Representative for responsible research body:** Head of Department Margaretha Boo-Murander, Faculty of Health and Medical Science, Örebro University, 701 32, Örebro

Address	Telephone	Fax	Email
Box 1964 751 49 Uppsala	018-471700	018-4717410	<a href="mailto:registrator@uppsala.se">registrator@uppsala.se</a>

## How to appeal the Ethical Review Board's decision

### Who can appeal?

Appeal should be done by the responsible research body/authorized representative. The authorized representative can provide a written mandate to researchers who are conducting the project.

### Where should the decision be appealed?

The board's decision can be appealed at the Central Ethical Review Board, Stockholm. Appeal should however be sent or delivered to:

Regional Ethical Review Board in Uppsala, Box 1964  
751 29 UPPSALA

If the appeal has arrived in time the board will hand it over the appeal and the documents to the Central Ethical Review Board.

### When should the decision be appealed at the latest?

The appeal should arrive to the board within three weeks from the day you received the decision.

### What should the appeal include?

The appeal should be written and needs to be signed.

In the writ you should specify

- Your name, personal number/organization number and telephone number;
- Which decision you are appealing e.g. by specifying the date of the decision and the reference number;
- How you perceive the board's decision should change and why it should be changed;
- Possible mandate as an appendix

Address	Telephone	Fax	Email
Box 1964 751 49 Uppsala	018-471700	018-4717410	<a href="mailto:registrator@uppsala.cen.se">registrator@uppsala.cen.se</a>



23<sup>rd</sup> April 2014

Lisa Schölin MSc, AFHEA  
PhD Student  
Liverpool John Moores University  
Henry Cotton Building  
15-21 Webster Street  
Liverpool  
L3 2ET

Direct dial: 0151 702 4346  
Email: [gillian.vernon@lwh.nhs.uk](mailto:gillian.vernon@lwh.nhs.uk)

Dear Ms Schölin,

**RE033: Alcohol Use in Pregnancy and Perceptions of Advice Provided in Antenatal Care Settings in Merseyside**

Following submission of project documents, associated paperwork and approvals to the Trust's R&D Department, I am pleased to inform you that your research project concerning NHS staff only has been approved.

The research is registered on the Trust's R&D database under the reference RE033, which I would be grateful if you could quote in all future correspondence regarding the project.

The Sponsor(s) of this research project under the Research Governance Framework for Health and Social Care (RGF) is John Moores University.

Having gained approval to conduct this research under the auspices of Liverpool Women's NHS Foundation Trust, you will be expected to comply with the principles and guidelines set out in ICH Good Clinical Practice and the Department of Health RGF. Our Trust R&D Department must be kept informed of amendments, updates and approvals – this is your responsibility as site investigator.

It is also your responsibility to assure the confidentiality and protection of participant identifiable information. To gain a thorough understanding of your information governance responsibilities, the Trust R&D Department recommends that you refer to the NHS IG Toolkit, accessing the online training materials where necessary ([www.connectingforhealth.nhs.uk/igtrainingtool](http://www.connectingforhealth.nhs.uk/igtrainingtool)).

I would like to take this opportunity to wish you the best of luck with this research.

Yours sincerely

Gillian Vernon  
Research & Development Manager

## Appendix O – Additional tables

**Table a. Alcohol use during pregnancy by country, using frequency as indicator**

	England (n=103)	Sweden (n=128)	Total (N=231)
<b>1st trimester</b>			
Never	93 (93)	126 (98)	219 (96)
≤Once per month	6 (6)	1 (1)	7 (3)
2–4 times/month	1 (1)	1 (1)	2 (1)
Missing	3	–	3
<b>2nd trimester</b>			
Never	84 (83)	125 (98)	209 (91)
≤Once per month	13 (13)	3 (2)	16 (7)
2–4 times/month	4 (4)	–	4 (2)
Missing	2	–	2
<b>3rd trimester</b>			
Never	75 (77)	126 (98)	201 (89)
≤Once per month	17 (17)	2 (2)	19 (8)
2–4 times/month	6 (6)	–	6 (3)
Missing	5	–	5

*The presented percentages are non-missing proportions*



**Table b. Distribution of drinking across trimesters**

Participant (Nationality)	First trimester		Second trimester		Third trimester	
	g/typical	g/special	g/typical	g/special	g/typical	g/special
1 (E)		Yes 76.80	No		No	
3 (E)		No	17.92	Yes 17.92	17.92	Yes 17.92
4 (E)	17.92	Yes	17.92	Yes 17.92	17.92	Yes
5 (E)		No	No		Yes	6.60
6 (E)		No	No		Yes	17.92
7 (E)		No	Yes	98.56	No	
8 (E)		No	17.92	Yes 35.84	17.92	Yes
9 (E)		Yes 35.84	53.76	Yes 35.84	17.92	Yes
10 (E)		Yes 17.92		Yes 17.92		Yes 35.84
11 (E)		No	17.92	Yes 17.92	17.92	Yes
12 (E)	17.92	Yes	17.92	Yes 17.92	17.92	Yes
13 (E)	4.48	Yes 4.48	No		17.92	Yes
14 (E)		No	No		17.92	Yes
15 (E)		No	17.92	Yes 17.92	17.92	Yes 35.84
16 (E)		Yes 17.92		Yes 17.92		Yes 17.92
17 (E)		No		Yes 7.20		Yes 7.20
18 (E)		No	17.92	Yes 17.92	17.92	Yes
19 (E)		Yes 17.92	No		No	
20 (E)	17.92	Yes 17.92	43.52	Yes 35.84	17.92	Yes
21 (E)		No	No		17.92	Yes
22 (E)		No	No			Yes 11.20
23 (E)		No	17.92	Yes	25.60	Yes 25.60

24 (E)	No		Yes		Yes	
			6.60		17.92	17.92
25 (E)	No		Yes		No	
			7.20			
26 (E)	Yes		Yes		No	
	25.60		25.60	25.60		
27 (E)	Yes		No		No	
		53.76				
28 (E)	Yes		Yes		Yes	
	4.48		8.96	17.92	2.69	
29 (E)	Yes		No		No	
	17.92					
30 (E)	No		No		Yes	
						22.72
31 (E)	No		No		Yes	
					3.96	
32 (E)	Yes		Yes		Yes	
		13.20		13.20		13.20
33 (E)	No		Yes		Yes	
			11.36		12.27	
34 (E)	No		Yes		No	
			8.96	17.92		
35 (E)	Yes		No		No	
	13.20					
36 (E)	Yes		No	No		
		4.48				
37 (E)	No		No		Yes	
						8.96
38 (E)	Yes		Yes		No	
	17.92	17.92	17.92			
39 (E)	No		No		Yes	
					17.92	
40 (E)	No		No		Yes	
					35.84	35.84
41 (E)	No		Yes		Yes	
			10.75		10.75	
42 (E)	No		No		Yes	
					11.20	8.00
98 (E)	No		Yes		No	
			22.72			
103(E)	No		No		Yes	
					17.92	Missing*
104 (S)	No		Yes		Yes	
			6.00		6.00	
105 (S)	No		Yes		No	
			6.00			

108 (S)	Yes	No	No
	42.00		
109 (S)	Yes	Yes	Yes
	6.00	12.00	6.00
110 (S)	No	Yes	No
			6.00
<hr/>			
<b>Total = 48</b>	<b>First trimester = 19</b>	<b>Second trimester = 28</b>	<b>Third trimester = 33</b>
<hr/>			
	<b>Typical=12</b>	<b>Special=12</b>	<b>Typical=20</b>
			<b>Special=21</b>
			<b>Typical=24</b>
			<b>Special=17</b>
<hr/>			
*ticked 'yes' but did not provide amount for how much consumed on special occasions,			
reported amount for special occasions, (E) = English, (S) = Swedish			