

# 'People still want a face and that's where we can fill in': a qualitative study of community pharmacists' experiences of providing healthcare advice about preconception and pregnancy

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## Abstract

**Objectives** This study aimed to explore community pharmacists' practices and attitudes towards the provision of healthcare advice regarding preconception and pregnancy.

**Methods** A qualitative focus group study was conducted virtually with community pharmacists around urban areas of London in October 2021. A topic guide was utilised to cover pharmacy practice, barriers and confidence in counselling women, education and training and thoughts on how to improve preconception and pregnancy health services. Focus groups were transcribed and analysed using thematic analysis.

**Key findings** Eleven community pharmacists participated. Three themes were identified: 'Community Driven Needs'; 'Needs of Community Pharmacists'; 'Shared Needs and Understanding' which were related through a central organising concept of 'Unmet Needs in Pharmacy-led Preconception and Pregnancy Care'. Community pharmacists are frequently consulted by women before and during pregnancy, however, a discord was uncovered between current pharmacy practice and the needs of the community. A clear need was identified for the incorporation of risk minimisation counselling focusing on smoking, alcohol intake and drug use. Education and organisational factors were reported as challenges to providing advice.

**Conclusions** Community pharmacists can play a pivotal role in providing information and support to women before and during pregnancy. Our findings suggest integration of community pharmacy-led structured counselling may be a useful public health strategy to optimise pregnancy health. Our work highlights educational and organisational barriers which hinder the ability of pharmacists to promote preconception and pregnancy health. These must be addressed, and we provide recommendations for change to both policy and practice.

**Keywords:** community pharmacy; preconception; pregnancy; women's health

## Introduction

To benefit the health of women, and any children they may have, pregnant women and those planning pregnancy need to be identified, and better supported. In the UK, there are no preconception health services for women planning pregnancy,<sup>[1]</sup> while during pregnancy, antenatal services are commonly delivered in hospital-based settings with attendant challenges, including equity of access, convenience and costs. In contrast, community settings have inherent advantages for providing advice and sustained support for women before and during pregnancy. Community pharmacies are well placed to inform and disseminate key health messages with 90% of the UK population able to walk to a community pharmacy within 20 minutes, with closer proximity in highly deprived areas.<sup>[2]</sup>

Thus, engagement in the community pharmacy may be particularly effective in areas of high deprivation and serve to reduce health inequalities.

Poor pregnancy outcome impacts health across generations and is a major societal challenge. At least one in four women in the UK have a body mass index (BMI) of 30 kg/m<sup>2</sup> or above at their first antenatal visit<sup>[3]</sup>; this profile increases the risk of adverse maternal, infant and childhood outcomes, and is a major burden on national antenatal services.<sup>[4, 5]</sup> Suboptimal health behaviours can adversely impact maternal and infant health and are frequently established, before conception. Previous research with over 130,000 UK-based women has shown the majority of women are not adequately prepared for pregnancy, with 20% of women reporting smoking,

31.5% taking folic acid supplements and ~50% consuming alcohol.<sup>[6]</sup> Thus, there is an urgent need to increase awareness of health before pregnancy.

Community pharmacy-based interventions have been shown to be effective for smoking cessation and feasible for delivering weight management interventions;<sup>[7]</sup> however, there is limited evidence assessing community pharmacies as a forum to improve preconception and pregnancy health. Previous research demonstrated the benefit of community pharmacy-delivered interventions in improving iron status and smoking cessation in pregnant women while increasing awareness and use of folic acid supplements in preconception women.<sup>[8]</sup> Indeed, a recent study to raise awareness of preconception care (PCC) within community pharmacies in Northern Ireland was shown to be both feasible and acceptable to women and pharmacy staff.<sup>[9]</sup>

The experiences of community pharmacists in providing medication advice for pregnant women are well documented,<sup>[10, 11]</sup> however, there is a paucity of studies assessing their experiences and attitudes towards providing advice to preconception and pregnant women beyond medication usage. There is some evidence that while community pharmacists provide advice to preconception and pregnant women, several barriers exist including a lack of education, difficulties identifying a woman's pregnancy status and challenges in interprofessional collaborations.<sup>[12, 13]</sup>

This study aimed to explore community pharmacists' practices and attitudes towards the provision of healthcare advice to preconception and pregnant women. Pharmacists' views on training and service provision to improve women's health before and during pregnancy were also investigated.

## Methods

A descriptive qualitative focus group study methodology was used to gain an in-depth understanding of community pharmacists' experiences and attitudes towards providing healthcare advice to preconception and pregnant women.<sup>[14]</sup> The study was reviewed and approved by King's College London research ethics committee, study reference (ref: LRS/DP-20/21-22603).

## Recruitment and participants

A purposive sample of participants was recruited via e-mail between September and October 2021. Inclusion criteria required practising UK-based community pharmacists, willing and able to provide informed consent. Pharmacists were provided with an information sheet about the study and for those who were interested in participating, informed consent was obtained.

## Data collection

Three focus groups were conducted via Microsoft Teams and facilitated by two female members of the research team (SL MRPharmS, ACF PhD) trained in qualitative methods, and took place in the evenings, at times mutually convenient to the participants. Consent was confirmed verbally before the focus groups were recorded. A topic guide was used to facilitate discussion and included questions on participants' current pharmacy practice, confidence in counselling women, barriers to advice provision, training opportunities and services to improve preconception and pregnancy health. The focus groups were audio recorded

and transcribed using intelligent transcription by a professional transcription company, into Microsoft Word. To ensure data accuracy, checks were conducted by listening to the original audio and examining the accuracy of the transcripts.

## Data analysis

Data from the focus groups were analysed using thematic analysis<sup>[15]</sup> which involved a number of phases including familiarisation with the data through reading and re-reading the transcripts, generating an initial list of codes, cross-checking codes, grouping codes into themes, refining and naming themes and subthemes. All data were coded by two members of the research team (PK and ACF) and themes and subthemes were refined (PK, ACF, JW and SAS). A central organising concept<sup>[16]</sup> unified aspects of the data assigned to the different themes. The study is reported in accordance with COREQ guidelines ([Supplementary File](#)).

## Results

Eleven community pharmacists were recruited (male:  $n = 3$ ; female:  $n = 8$ ). All participants worked in urban settings in London and varied in experience practising as community pharmacists ( $M_{\text{Years}} = 22$ ;  $\text{Range} = 7\text{--}40$  years). Six participants worked in an independent pharmacy setting while five worked as part of a large pharmacy multiple ([Table 1](#)). Three focus groups were conducted virtually using Microsoft Teams in October 2021 and lasted 63, 64 and 64, respectively ( $M_{\text{Time}} = 63.6$  min).

Three main themes were identified: (1) Community Driven Needs; (2) Needs of Community Pharmacists; and (3) Shared Needs and Understanding. Each theme had between two and three subthemes ([Table 2](#)). Themes were related through a central organising concept of 'Unmet Needs in Pharmacy-led Preconception and Pregnancy Care'. Additional example quotes are shown in [Table 3](#).

### Theme 1: community-driven needs

#### Advice on increasing chances of conception

Participants discussed how they are frequently asked for conception advice, particularly by those experiencing difficulties in conceiving or those wanting advice on optimising health to conceive.

*"So, at preconception stage I think it's normally women would only approach you if they'd been trying to conceive for a very long time and nothing's happening, if they're not falling pregnant. It's only then if they're concerned, they will approach and they will just basically say 'What can I do?'"* (Female, FG1)

For women experiencing difficulties conceiving, participants highlighted the importance of providing advice beyond vitamins and minerals and asking more in-depth questions about ovulation and frequency and timing of intercourse while identifying whether signposting for further support is needed.

*"So, I think more important than the multivitamins and the minerals is to find out is the woman even ovulating? Is she having periods? Because if not and she's going*

**Table 1** Focus group participant characteristics

| Focus group | Sex    | Years of experience in community practice | Type of pharmacy | Area                                |
|-------------|--------|---|------------------|-------------------------------------|
| 1           | Female | 7   | Independent      | North-west London                   |
|             | Female | 9   | Multiple         | North-west London and Hertfordshire |
|             | Female | 10  | Multiple         | North-west London                   |
|             | Male   | 35  | Multiple         | North-west London                   |
| 2           | Female | 10  | Independent      | South-east London                   |
|             | Female | 28  | Multiple         | South London                        |
|             | Female | 40  | Independent      | North London                        |
|             | Male   | 40  | Independent      | North London                        |
| 3           | Female | 8   | Independent      | North-west London                   |
|             | Female | 40  | Multiple         | North-west London                   |
|             | Male   | 20  | Independent      | North London                        |

**Table 2** Themes and subthemes

| Theme                          | Subtheme  |
|--------------------------------|---|
| Community Driven Needs         | Advice on Increasing Chances of Conception<br>Optimising Health and Understanding Risks |
| Needs of Community Pharmacists | Education and Training<br>Confidence in Providing Preconception and Pregnancy Advice    |
| Shared Needs and Understanding | Cultural Competencies<br>Capacity Building  |

*months without, then she's – bless her – taking a multi-vitamin every day thinking that's going to help ... even knowing when to refer because we might think it's really obvious that "Oh well, if you're not having your periods then you're obviously not going to conceive," so I think it's important to maybe possibly ask the right questions. "Are you having regular periods? Are you actually having enough intercourse and having it frequently enough and at the right times of the month?"* (Female, FG1)

The health of the partner was also recognised as being important.

*"Also, with preconception, if somebody is trying but actually not getting pregnant then I would also bring in the topic about the partner as well and the health of the partner as well."* (Female, FG2)

### Optimising health and understanding risks

The need of the community in seeking advice and information on preconception and pregnancy health from community pharmacists was evident. The participants discussed important components of preconception and pregnancy health and their varied experiences of providing advice on a range of topics.

*"... the areas where I've given advice is on ovulation kits, folic acid, general nutrition like vitamins and minerals"* (Male, FG1)

The participants spoke about how they often assume women are aware of high-risk behaviours such as alcohol consumption, smoking and drug use. Participants felt that these risk factors are covered by NHS campaigns and known to women planning a pregnancy or pregnant women.

*"I think the alcohol bit, I must admit I have overlooked to a large extent and not actively but passively, not really thought about the alcohol consumption, but that's a good point to have raised and one would use that. One just takes it for granted that if somebody is pregnant yes, that they would inherently have taken that on board and acted accordingly"* (Male, FG2)

### Theme 2: needs of community pharmacists Education and training

When the participants were asked about training on preconception and pregnancy health, the benefits of training to update current knowledge were highlighted.

*"I think it would helpful and I wouldn't mind taking part in it, certainly, because I think my knowledge does need upgrading as well as the current trends and advice to give now."* (Female, FG2)

There was a consensus that there are insufficient training opportunities unless part of an existing service.

*"There's not much. I haven't seen anything in particular raised regarding pregnancy or contraception, unless you participate in the morning after pill or free condoms"* (Male, FG3)

Only one participant reported taking part in any type of training which focused on smoking cessation in pregnancy.

*"When I used to work for a different PCT [Primary Care Trust], we did specialist training on pregnancy and smoking cessation"* (Female, FG3)

Education and training both at a university level and as part of continuing professional development were described as superficial.

**Table 3** Additional example quotes

| Themes                                  | Subthemes   |   |
|---|---|---|
| Theme 1: Community Driven Needs         | <i>Advice on Increasing Chances of Conception</i>                 | <p>"We get quite a few people wanting to know is there anything they can take to be fit enough to have a baby" (Female, FG 3)</p> <p>"Have you had trouble already conceiving?' I think that would be a question to ask, because if they've been trying for a while and nothing's happened, and they've already tried the healthy diet and folic acid and stopping smoking, you're thinking maybe there is a problem and they need signposting to some other support" (Female, FG3)</p> <p>"I have had the experience of [pause] people coming to me, asking me as a Pharmacist for a Pharmacist's opinion with regards to preconception with apps... Women vary so much from 21- to 45-day cycles, and it's very misleading. And what happens is month after month, women are missing their opportunity to fall pregnant because they're relying on this app, which is giving false information, which I think is quite [pause] [sigh] shocking really, but that's just something that I did want to mention that I have come across" (Female, FG1)</p>  |
|   | <i>Optimising Health and Understanding Risks</i>                  | <p>"I would say keeping themselves active, yes? Just some sort of an exercise, walking or if you are catching a bus, try doing it from one bus stop away so it's that form of exercise" (Female, FG2)</p> <p>"Yes, so the most important I would say lifestyle, so obviously healthy weight, physical activity, smoking, alcohol like you said. It may also be if a patient has got chronic disease so it would be controlling that, so diabetes, hypertension. Vaccination, so flu vaccination" (Female, FG1)</p> <p>"Do you have any medical conditions or are you taking any other medicines? Or they might think 'No, the doctor's not giving me anything, but in the meantime, I take an aspirin every time I have a headache or buy Sudafed Cold &amp; Flu every time, I have a headache.' So, they could inadvertently be taking things they shouldn't" (Male, FG3)</p> <p>"One of the important things is that everything is turning digital, a lot of the things are, but people still want a face and that's where we can fill in" (Male, FG3)</p> <p>"...we see that the NHS are always campaigning in general with healthy living and everything, like smoking cessation. Every time you go to the doctors there's the questionnaires, surveys of how many units of alcohol are you drinking, this, that and the other, so you just kind of assume that that's there and then it's just not spoken about" (Female, FG1)</p> <p>"I don't talk about it. I'm thinking that if they're coming in asking for advice on how to get fit enough to conceive, then they are already knowing that they shouldn't be using drugs and alcohol. Because those are the people who want to have a baby, so they're already doing their best but perhaps it hasn't happened yet, so they want to go a bit further. I think that is a problem, though, with people who conceive without realising, and we do an enormous amount of emergency hormonal contraception. Absolutely enormous" (Female, FG3)</p> |
| Theme 2: Needs of Community Pharmacists | <i>Confidence in Providing Preconception and Pregnancy Advice</i> | <p>"...so, let's say for me personally, before having my children I would have told you figures very, very low. And there are a lot of pharmacists, how many pharmacists are coming out every year from the universities, the majority may not already have kids or gone through something like that, so the personal knowledge isn't there. And without that personal knowledge it's very difficult to understand what exactly it means to conceive, be pregnant and then go through the postpartum period" (Female, FG1)</p>  |
| Theme 3: Shared Needs and Understanding | <i>Cultural Competencies</i>                                      | <p>"What my concern is that cultural differences, because there are women out there for whom actually English is not their first language, and I don't know what the rate of miscarriage is or whatever or not proper pregnancies and so forth, so are these women missing out on this advice and are their local communities – for examples temples and places of worship – do they have professional people who can actually give advice? Because if they come to the pharmacy, for example, I speak English and some other languages, but if a person who's Somalian comes to me, I wouldn't be able to explain that to her" (Male, FG1)</p>   |
|   | <i>Capacity Building</i>  | <p>"I don't pro-actively give advice because I think the whole pharmacist situation at the moment, since the pandemic, has just been horrendous. The amount of workload that we have, we have very little pro-active advice to give. If somebody asks, then yes, I would give and I'm quite fluent about what I would want to talk to them about during pregnancy but that would be if they asked me a question and asked me advice" (Female, FG2)</p>  |



Table 3 Continued

| Themes | Subthemes  |
|--------|--|
|        | <p><i>"You can combine it with minor ailments, so when you're doing things like a CPCS [Community Pharmacist Consultation Service] referral, you could have something like that for pregnant ladies" (Male, FG3)</i></p> <p><i>"But I think it would be difficult then for us to do full tests, or if we were able to refer to the GP to get things done if we thought they would be needed, that would be good" (Female, FG3)</i></p> |

*"And what we're taught at university, like [name] said right at the start, really just superficial like scratches the surface; there's not that much underneath. And then on top of that, we do have CPDs [Continuing Professional Development], so let's say there's a CPD that we do on helping with breastfeeding and the CPD basically says "Oh, breast is best," even though I know that it's now "Fed is best," - they say that, "Fed is best," which is rightly so - but then you do your CPD and it says "Encourage the mother that breastfeeding this and whatever it is, and help them in this way and that way", but then again it's all very superficial" (Female, FG1)*

### Confidence in providing preconception and pregnancy advice

When the participants were asked about how confident they felt in providing advice, the responses varied. Most participants rated themselves above five on a scale from one to ten. A lower score was related to a lack of training and a lack of confidence in oneself.

*"I think it's training, as well, isn't it? Confidence, lack of confidence. Yes, I just think sometimes that the only time you wouldn't actually be able to fully give advice is if you're not very confident yourself, so I think that's one of the key reasons as well" (Female, FG2)*

Participants spoke about how the personal experience impacted confidence which was associated with feeling more confident and knowledgeable in providing advice.

*"Yes, I'm probably about a seven or an eight. I think the answer might be different for females as opposed to males as both [name] and I have had children, so we tend to know a bit more about our bodies and what's important and what isn't, whereas a male might not be as confident in that" (Female, FG3)*

Personal experience impacting confidence was challenged by a male pharmacist.

*"Can I challenge that thought? Sorry. [laughter] I don't have epilepsy. Does that mean I don't know how an epileptic will feel and I can't give them advice?" (Male, FG3)*

### Theme 3: shared needs and understanding

#### Cultural competencies

The impact of culture and language on practice was discussed by the participants with language a challenge in providing advice.

*"I think language, because we've got a very big Hispanic population. Now, I myself have got no idea how to speak*

*Spanish. I can understand a few words but not a lot. And how do you explain to the mothers?" (Female, FG2)*

Some participants noted cultural differences may result in a patient's reluctance to ask for advice from a male pharmacist.

*"So, the thing is, in our pharmacy I've got my husband and myself, and like I mentioned, communities. We've got some communities who, if I wasn't around, wouldn't be able to speak or get advice from my husband" (Female, FG2)*

#### Capacity building

Participants acknowledged that community pharmacists have varied duties meaning their time is often divided. The increasing demand for services has led to fewer opportunities to provide advice proactively.

*"...at the moment, because of the enormous pressure of the workload, there just isn't the physical capacity to be able to give advice unless actively asked." (Male, FG2)*

When asked about their views on a service to improve health before and during pregnancy, a place for a pharmacist-led service was considered, in particular, how such a service could be implemented, for example, having a separate clinic or using existing pathways.

*"...I would prefer it if it was done in a one-monthly clinic, half a day or whatever it is, it's open to the public, it's well advertised, you can take bookings, if you're able to take walk-ins you do it that way and that is it, really" (Female, FG2)*

The participants highlighted potential challenges in implementing a pharmacist-led service including referring women to existing services and difficulties in providing diagnostic tests in a community pharmacy setting.

*"The only thing, I'm just thinking, if we have a lot of referrals, at a lot of points... Say you mentioned weight management, so a lot of people after pregnancy, it's an area that would be quite popular, they would come in for advice, how to shift some weight, then referring them onto somewhere else... I don't know, I just feel like sometimes we just need to be careful; how much are we referring out, and to where?" (Female, FG2)*

Time constraints and remuneration were additional challenges to providing a service. Adequate remuneration was seen as essential to ensuring good quality care and positive outcomes.

*"The only thing I just want to say, is bringing up all this, there's so many services that we're already doing and like [name] said, it's time-consuming and who do we give our time to?" (Female, FG2)*

*"If there is proper funding and maybe pharmacists actually have a choice that you can prioritise yourself, or select out of say ten different services which are on the agenda, be it pregnancy, or be it diabetes, or be it hypertension, or whatever and like [name] said, you can have a designated clinic slot on there, that would be much more fruitful and constructive and probably money better spent on there, in terms of overall NHS outcomes that we're looking for."* (Male, FG2)

## Discussion

Our findings show that community pharmacists are an important point of contact for preconception and pregnancy advice and are ideally placed to counsel women on a wide range of topics to optimise health. However, our results show a discord between the needs of the community with practice needs of pharmacists. Education and training initiatives in addition to building capacity within pharmacy practice are required to ensure community pharmacists can positively impact preconception and pregnancy health and as a consequence, lifelong health.

## Strengths and limitations

This was an in-depth qualitative study conducted with UK-based community pharmacists which provided rich information on preconception and pregnancy health in a community setting which could be missed in quantitative methodologies. This study adds to the paucity of research exploring community pharmacists' experiences, attitudes and barriers to providing healthcare advice to women before and during pregnancy. However, as with all studies of this kind, our data should be considered in the context of several inherent limitations. Firstly, the pharmacists involved in the focus groups were those who were interested in the topic and were available to partake in this study; the voluntary response may lead to bias. Secondly, participants were based in urban areas around London and hence, may not be representative of pharmacy practice in rural areas which limits the generalisability of our findings. Thirdly, our sample size was relatively small which could also underrepresent the target population. Finally, the proportion of male participants was significantly lower compared with female participants which may not be an accurate representation of the pharmacist profession in the UK.

## Context of other literature

Our findings suggest that community pharmacists are frequently consulted by pregnant women and those planning pregnancy and play a key role in the community, providing advice on a range of healthcare topics. This is consistent with previous research findings.<sup>[12,13,17]</sup> In a cross-sectional study of 192 community pharmacists in Kuwait, the advice provided to pregnant women included recommending supplements and information on lifestyle and exercise.<sup>[17]</sup> In an online survey in Belgium, over 80% of community pharmacists reported providing information on folic acid to women trying to conceive, 60% on alcohol and smoking cessation and in pregnancy, over

half reported providing information on alcohol, smoking, diet and exercise.<sup>[13]</sup>

The majority of pharmacists reported feeling confident in providing advice to women which is in line with a recent survey in community pharmacists in the United Arab Emirates, where pharmacists were confident to counsel pregnant and breastfeeding women.<sup>[18]</sup> Women seek information regarding medications during pregnancy and cite pharmacists among the sources of information they use.<sup>[19]</sup> The integration of structured counselling for pregnant women who require advice on medications may be a useful public health strategy to optimise the pregnancy health of UK-based women. Alternatively, as suggested in this study, advice could be provided in designated and adequately funded 'clinics' or linked to referrals to the pharmacy for minor pregnancy ailments.

The finding that community pharmacists provide preconception advice is important. The preconception period is an opportunity to address suboptimal health behaviours before pregnancy to reduce the intergenerational burden of non-communicable diseases.<sup>[20]</sup> A recent study carried out in Northern Ireland showed that increasing awareness of PCC in community pharmacies was both feasible and acceptable to women and pharmacy staff.<sup>[9]</sup> Furthermore, community pharmacies have been identified as ideal providers to deliver preconception health services.<sup>[21,22]</sup> From a public health perspective, community pharmacies have reached areas of high deprivation<sup>[2]</sup> to reduce health inequalities. In the absence of preconception health services in the UK and evidence that UK women are not adequately prepared for pregnancy,<sup>[6]</sup> public health strategies should consider preconception health services delivered within community pharmacy settings to improve preparation for pregnancy.

Community pharmacists commonly provide advice on health behaviours such as diet, micronutrient supplementation and physical activity. However, it was often assumed that women are aware of the adverse effects of risky behaviours such as smoking, alcohol intake and drug use. In a survey conducted in Italy, only 25% of pregnant women agreed that alcohol, smoking and obesity could result in harm to the baby.<sup>[23]</sup> In UK-based women planning pregnancy, smokers were found to be 1.87 times more likely to be actively planning a pregnancy compared with non-smokers.<sup>[6]</sup> This highlights the need for more attention in pharmacy practice for risk minimisation counselling associated with smoking, alcohol and drug use.

Although findings indicate the importance of community pharmacists in optimising preconception and pregnancy health, there is a dichotomy between real-life consultation and what is required to meet the needs of the community. Lack of education and training was highlighted as challenges to providing advice which is consistent with previous research.<sup>[13]</sup> Continuing education opportunities and university curriculum refinement are needed to ensure pharmacists are equipped with the knowledge and skills to counsel women including those from ethnic minority groups which were identified as challenging in this study.

However, training alone is insufficient to improve counselling practice. The impact of a blended learning program in preconception, pregnancy and lactation pharmaceutical care was assessed by Belgian community pharmacists. Although the program positively impacted knowledge and counselling practice, lack of time and privacy as barriers were evident post-training.<sup>[24]</sup> Capacity was also highlighted as a

challenge in this study with pharmacists reporting only providing advice when asked. Time and resource constraints are well-documented barriers<sup>[25]</sup> and future research should focus on how knowledge and skills can be applied in pharmacy practice given the organisational challenges.

## Implications

Community pharmacists may benefit from education and training initiatives to provide healthcare advice to preconception and pregnant women. This training should also incorporate counselling women on the adverse effects of smoking, alcohol consumption and drug use. Our study demonstrates that the community pharmacy is a convenient and effective forum for the provision of healthcare advice to pregnant women and those planning pregnancy; we would urge policymakers to view the community pharmacy in this context.

## Conclusion

Community pharmacists are frequently consulted by pregnant women and those planning pregnancy and are a pivotal point of contact for information and advice on a range of topics. Community pharmacists commonly do not provide advice on risky health behaviours such as smoking, alcohol intake and drug use due to their assumption that women have knowledge on the adverse effects of these behaviours. The needs of the community must be reconciled with the needs of pharmacy practice as pharmacists described lack of education, time and resource constraints as impacting practice. Community pharmacy settings should be considered for public health strategies to improve health and provide sustained support for women before and during pregnancy, however, organisational and educational barriers still need to be addressed to effectively implement services.

## Supplementary Material

Supplementary data are available at *International Journal of Pharmacy Practice* online.

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## Author Contributions

ACF, JW, SAS designed the study; PK, ACF carried out the research; SAS, PK, ACF, JW analysed the data and SAS, AF wrote the manuscript.

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## Conflict of Interest

The author(s) declare that there are no conflicts of interest.

## Data Access

The authors collected and had complete access to the study data.

## Data Availability Statement

Data are available on request.

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