Impact and acceptability of the coach and teacher training within a school-based sport-for-health smoking prevention intervention: SmokeFree Sports

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Abstract

This study evaluated the impact and acceptability of a three hour bespoke training workshop for sports coaches and teachers to subsequently deliver a sport-for-health smoking prevention intervention in primary schools. Questionnaires were completed pre- and post-training by both teachers (n=24) and coaches (n=8), and post-intervention by teachers. Interviews were also conducted with coaches (n=7) and teachers (n=12). Both groups displayed a significant increase in intervention knowledge and delivery self-efficacy from pre- to post-training, which was maintained at post-intervention for teachers. Data suggests that a brief training workshop is acceptable to practitioners and fosters confidence to implement a sport-for-health smoking prevention program.

Key Words: Smoking, Training, Sport-for-health, Intervention, Self-efficacy, Acceptability

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Introduction

Despite health promotion efforts, over 207,000 young people in the United Kingdom take up smoking each year (Hopkinson, Lester-George, Ormiston-Smith, Cox & Arnott, 2013). Early smoking onset increases the risk of developing smoking-related morbidities in later life, including cancer, heart disease and stroke (Department of Health, 2011). The importance of targeted preventative actions is therefore widely recognized, with school-based interventions viewed as a critical component in preventing smoking uptake (The National Institute for Health and Care Excellence (NICE), 2010).

Sport-for-health is a growing field in health promotion, whereby sport is recognized as an educational platform to promote public health messages, as well as positively shaping attitudes (Eime, Payne & Harvey, 2008; Priest, Armstrong, Doyle & Waters, 2008; Almond, Almond & Saunders, 2013; Geidne, Quennerstedt & Eriksson, 2013). In North America, community programs have used sport to deliver tobacco control actions (e.g. Tobacco Free Sports [The US Centres for Disease Control and Prevention, 2007]; Play, Live, Be Tobacco Free [www.playlivebetobaccofree.ca]). Within the school setting, in the UK, SmokeFree Sports (SFS), a multi-component sport-for-health smoking prevention intervention, was targeted at children aged nine to ten years (Trigwell et al., 2014; Trigwell et al., 2015). Implementing sport-for-health programs in schools maximizes the reach of children across social groups, utilizes existing infrastructure and is a natural setting for smoking interventions as the focus on education falls within usual activities (Thomas, McLellan & Perera, 2013).

In SFS, sports coaches and primary school teachers (including class teachers, physical education (PE) coordinators, teaching assistants and external sport coaches; termed teachers

hereafter) were recruited to deliver a program of sports activities that aimed to strengthen non-smoking intentions among never smoking children. Although it is recognized that deliverers of smoking education programs should be sufficiently trained (NICE, 2010), research indicates that coaches and teachers may not have the knowledge or skills necessary to deliver sport-for-health programs (Bapat, Jorm & Lawrence, 2009; King, Delfabbro & Griffiths, 2010; Alfrey, Webb & Cale, 2012). Further, a recent survey of initial teacher training providers in England found that only 34% included a smoking education component (Shepherd et al., 2013). Therefore, training was considered key in achieving the aims of SFS.

In the absence of a pre-existing training course that met the needs of SFS, a bespoke three hour training workshop was developed to train sports coaches and teachers to implement the intervention. The present study aims to evaluate the impact of a SFS workshop on self-efficacy of teachers and sports coaches to deliver SFS. Self-efficacy, defined as "the belief in one's capabilities to organize and execute the courses of action required to manage prospective situations" (Bandura, 1997, p. 168), was considered an important construct for evaluating the impact of the training as individuals are more likely to engage, persist and contribute positively in activities through which they have a high perceived self-efficacy (Marks & Allegrante, 2005; Hilland et al., 2014). A secondary aim of the study was to examine the perceptions of teachers and coaches with regard to whether the training materials and methods were appropriate and acceptable. To date, few studies have evaluated sport-for-health interventions, whilst those that have lacked scientific rigor (Almond et al., 2013; Gray et al., 2013). Findings will be used to improve prospective SFS programs, and may have wider implications for the practice and procedures of training of sport-for-health practitioners to deliver school-based substance use interventions.

Methods

Design and Procedures

This study forms part of a wider program of research evaluating the process (Trigwell et al., 2015) and impact of SFS (McGee et al., under review), which was implemented between October 2012 and May 2013. The present study utilized a pre-post-test design and mixed-methods to evaluate the bespoke training workshop and materials between October 2012 and June 2013. Self-efficacy toward delivery of SFS questionnaires were completed pre- and immediately post-training by teachers and coaches (between October 2012 and February 2013), and again at post-intervention by teachers (June 2013), whilst interviews were conducted after intervention delivery (June 2013).

Participants

In September 2012, state primary schools in two local authorities in Merseyside, North-West England (Liverpool, n=104; Knowsley, n=50) were invited to participate in SFS. In total, 43 primary schools agreed to take part (27.9% response rate), comprising 32 intervention and 11 control schools. All Year 5 class teachers from intervention schools (n=54) and all SFS sport coaches (n=11), were invited to attend a three hour SFS training workshop. Teachers (n=33: 54.5% female; 62.5% aged 20-39 years) who attended the training had between one and 34 years of teaching experience (mean=9.7 years, SD =7.5). Coaches (n=11; 81.8% male; 72.7% aged 20-39 years) had between two and ten years of coaching experience (mean=3.3 years, SD=1.1). All workshop attendees provided written informed consent to participate in the study, which received ethical approval from the University Ethics Committee [12/SPS/038].

SmokeFree Sports Intervention

A detailed description of the SFS intervention has been published elsewhere (Foweather et al., 2014; Trigwell et al., 2014). Briefly, SFS aimed to prevent smoking among children aged nine to ten years (Year 5) through a school-based program of physical activity and sport, including sessions delivered by coaches and teachers, and an assembly with a local sports star. Knowledge gained from earlier SFS feasibility studies (Romeo-Velilla et al, 2014; Hilland et al, 2014; Trigwell, McGee, & Foweather, 2012) was instrumental in the evolution of SFS study design.

SmokeFree Sports Training Workshop

Following recommendations from NICE (2010), a bespoke SFS training workshop was developed for coaches and teachers to equip them with knowledge surrounding smoking issues, skills to deliver smoke free messages through physical activity (using an interactive, participatory, game-based active learning approach) and confidence to raise and address key issues about smoking with children. The training was comprised of a two-hour classroom-based session (including presentations, group work and opportunities for questions and answers) and a one-hour practical session, both delivered at a local leisure center during school hours.

The classroom-based component was delivered by two members of the SFS team and a member of the Liverpool Community Health National Health Service Trust. The training provided details of the project and information about smoking, SFS key messages to promote (i.e. around smoking and health, smoking and sport, the contents of a cigarette and their cost, smoking and social influences, and the benefits of participating in sport) and practical demonstrations on how to achieve this via sport. The practical component was delivered by two multi-skill sport coaches and a dance instructor, and provided coaches and teachers with

the opportunity to observe and practice activities and games. Attendees received SFS training resources, consisting of smoke free pledges for children and a training manual, which included ten 60 minute session plans for delivery.

Workshops were delivered between October 2012 and February 2013. All sports coaches and at least one teacher from each participating school was required to attend. Teachers completed the training by November 2012; sports coaches received the training prior to delivering SFS in schools. On completion of the training, SFS coaches were required to deliver five coaching sessions (multi-skill, dance or football) during school hours at each intervention school between October 2012 and April 2013. Teachers were asked to feedback information to colleagues and incentivized, with SFS branded equipment (50 sports cones and 20 bibs), to independently deliver and evaluate a minimum of five session plans over the intervention period.

Measures

Self-efficacy questionnaire. To assess the impact of the training on coaches' and teachers' self-efficacy to deliver SFS, a questionnaire modified from Lane, Hall, and Lane's (2002) measure of self-efficacy, was utilized. The questionnaire included 15 questions (five knowledge and 10 delivery items) with scoring completed on a 'Likert' scale with 0 indicating '*no confidence at all'* and 4 '*very confident*' (see Table 1 for exemplar questions). The question stem 'how confident are you in your ability to [insert competency] was utilized (Lane et al., 2002) and is consistent with previous research (Bandura, 1997). Questions were developed following consultation with expert practitioners, experienced in coaching, behavior change and substance use. Questions surrounded the knowledge and skills required to deliver smoke free messages and were aligned with the learning outcomes from the training. Items were piloted within previous research (Hilland et al., 2014) and with three

community sport coaches, with amendments made where necessary to aid content and face validity. Questionnaires were completed by 24 teachers (12 males) at three time-points (pre- and immediately post-training, and post eight-month intervention). Eight (6 males) of the 11 coaches who attended the training completed questionnaires in full at pre- and immediately post-training. The questionnaire took participants approximately 10 minutes to complete.

Table 1. Examples of domain-specific coach self-efficacy items

Domain	Item
Knowledge	How confident are you in your knowledge of the short and long term health risks of smoking?
Knowledge	How confident are you in your knowledge of the effects of nicotine on the body?
Delivery	How confident are you in your ability to communicate the short and long term health risks of smoking to children and young people?
Delivery	How confident are you in your ability to communicate the effects of nicotine on the body to children and young people?

Semi-structured interviews. Using purposive sampling techniques, 12 teachers (65% female; 85.7% aged 20–39 years,) and seven coaches (86% male; 60% aged 20-39 years) were interviewed to explore teachers' and coaches' perceptions of the impact of the training workshop on their knowledge and delivery self-efficacy to implement SFS, as well as the appropriateness and acceptability of training methods and materials. Interviews formed part of a wider process and impact evaluation of SFS (McGee et al., under review; Trigwell et al., 2015). All interviews were audio recorded and lasted between 30 and 60 minutes.

Data Analysis

For self-efficacy data, descriptive statistics were generated and data were checked for normality. For analysis, self-efficacy questions were grouped into three summary variables, (i)

total self-efficacy score (15 items, α=0.9); (ii) knowledge (5 items, α=0.7); and (iii) delivery (10 items, α=0.9). As data were non-parametric, Friedman tests were conducted to determine differences in teachers' self-efficacy across the three time points, with Wilcoxon Signed Rank Tests applied for post-hoc comparisons (using Bonferroni adjustments) and to analyze coaches' data.

All interview recordings were transcribed verbatim for analysis, imported into NVivo version 10 and subjected to thematic analysis (Marshall & Rossman, 2006). This process involved assigning broad thematic codes, pre-defined from topics covered in the interview schedule, including the perceived impact of the training on deliverers, the acceptability of the training and manual, and recommendations for improvement. Subsequently, broad codes were collapsed into higher and lower order themes and descriptive and interpretive summaries were written based on recursive engagement with the data. To aid the credibility and trustworthiness of the results, analyses and interpretations of the data were discussed and checked within the research team and amendments were made. The use of a mixed methods approach allowed for the conformability of data through the process of triangulation (Shenton, 2004).

Results

Impact of the training workshop on self-efficacy toward delivering the SmokeFree Sports intervention

Quantitative findings. Descriptive statistics for total, knowledge and delivery self-efficacy are displayed in Table 2. Overall, for teachers, data revealed a significant effect for time, across total (X^2 (2, N=24) =36.549, $P< 0.001$), knowledge (X^2 (2, N=24) =38.188, $P< 0.001$), and delivery (X^2 (2, N=24) =36.462, $P< 0.001$) self-efficacy. Between pre- and post-

training, there was a significant increase in total (Z=-4.202, P< 0.001), knowledge (Z=-4.132, P< 0.001) and delivery (Z=-4.205, P< 0.001) self-efficacy. Similarly, between pre-training and post-intervention, significant increases in total (Z=-4.289, P< 0.001), knowledge (Z=-4.298, P< 0.001) and delivery (Z=-4.296, P< 0.001) self-efficacy were found. No differences were observed in self-efficacy scores between post-training and post-intervention (total, Z=-.581, P=0.561; knowledge, Z= -1.691, P=0.091; delivery, Z= -.075, P= 0.94). For coaches, data revealed a significant effect for time, with total (Z=-2.032, P< 0.05), knowledge (Z=-2.032, P< 0.05) and delivery (Z=-2.041, P< 0.05) self-efficacy increasing from pre- to post-training.

Qualitative findings. During the interviews, coaches and teachers articulated that the training had increased their knowledge and awareness surrounding smoking prevalence, reasons for smoking uptake among children and its impact on health.

> *"It gave me more of an awareness of some of the issues surrounding smoking and some of the reasons young people were starting smoking."* (Teacher 1)

> *"When we done the training we were learning about the different effects that smoking has on your body and it was pretty educating for me because I hadn't really done that much about smoking and what effects it has on your body."* (Coach 4)

Table 2. Descriptive statistics for total, knowledge and delivery self-efficacy at all-time points for teachers and coaches

	Teachers (N = 24); Md (IQR)			Coaches (N = 8); Md (IQR)	
	Pre-training	Post-training	Post- Intervention	Pre-training	Post-training
Total	38 (30, 43)	54 (49, 59)	55 (52, 58)	42 (37, 48)	59 (55, 60)
Knowledge	12 (10, 14)	19 (17, 20)	19 (17, 20)	14 (12, 16)	20 (18, 20)
Delivery	25 (20, 29)	37 (32, 40)	36 (34, 38)	29 (25, 32)	39 (38, 40)

In addition, teachers and coaches discussed how the training improved self-efficacy in the delivery of SFS; this was particularly apparent with teachers as the training also provided them with more ideas for delivering sessions:

> *"It gave me more ideas because PE is not my strong point…so it was nice to see the PE activities and how you could get that smoke-free message in."* (Teacher 2)

Acceptability of the training workshop and manual

Teachers and coaches viewed the training and manual positively using terms such as 'enjoyment' and 'interesting'. Whilst teachers and coaches generally valued the importance of the theoretical component of the training, the practical element was considered useful in demonstrating how to deliver smoke free messages via sporting activities:

> *"Seeing some of the games in action and how they panned out, how they worked when we were practicing them as adults, then you get an idea of a few of the potential pitfalls."* (Teacher 11)

In relation to the manual, both coaches and teachers articulated that it aided their delivery of sessions, praising the clarity of instructions and simplicity of session plans.

> *"The manual, I thought was really useful, it breaks down* [the activities] *really simply with clear explanations."* (Teacher 15)

> "[I would use the manual to] *educate myself to make sure what I was saying to the kids was the right message and correct, making sure what I was saying some of the facts and figures definitely."* (Coach 3)

Recommendations to improve the training and manual

In relation to the practical element of the training, some teachers and coaches felt more time to practice delivery would have been beneficial, especially since teachers often felt less confident and/or skilled to deliver physical activity sessions. For example:

> *"I think we could have done a bit more dance - I don't think that was covered as much I wanted to but it's not my strong point."* (Teacher 4)

For the theory session, two teachers felt this section could have been condensed, with one teacher stating:

> *"That was probably an hour or an hour and a half, but you could have cut that down to 10 minutes because the rest could have been put in a leaflet."* (Teacher 13)

Coaches raised concerns surrounding smoking-related issues raised by children during sessions and felt that the training and manual would benefit from including further information or guidance on how to address such issues.

> *"… some of the children were asking different questions and you are thinking on the spot and you have to answer this question the best way you can, so if maybe you get a page in it of awkward questions that children have asked before."* (Coach 6)

It was also suggested by coaches and teachers that the usability of the SFS training manual could also be improved through the inclusion of additional diagrams of the session plans and/or a DVD of activities.

> *"The drawings the diagrams are really good so more of them maybe for other activities, just so when I'm flicking through it's just easier to set up."* (Teacher 10)

Discussion

The present study used a mixed-methods approach to evaluate the impact and acceptability of a bespoke training workshop designed to upskill teachers and coaches to deliver SFS, a school-based sport-for-health smoking prevention intervention. Quantitative data showed that both teachers' and coaches' self-efficacy to deliver SFS increased from pre- to post-training across all domains (total, knowledge and delivery), and for teachers, these efficacy gains were maintained at post-intervention. Qualitative data corroborated these findings and, moreover, revealed the training and materials were acceptable. This study adds to the limited evidence base surrounding sport-for-health interventions and suggests a brief three hour training workshop is sufficient to train practitioners (i.e. teachers and sports coaches) to deliver sport-for-health interventions in primary schools.

Quantitative and qualitative data suggested that coaches' and teachers' self-efficacy (knowledge and delivery) toward implementing SFS increased following the training. These findings concur with previous research conducted in similar populations. For example, elementary school teachers felt better prepared to deliver tobacco use prevention curricula following in-service training (Kealey, Peterson, Gaul, & Dinh, 2000). Similarly, teachers who received training prior to delivering an active program promoting lifestyle education in school had an increased awareness of healthy eating and physical activity among their pupils (Sahota et al., 2001). With regards to coaches, two studies (Bapat et al., 2009; Pierce et al., 2010) reported positive training effects to enhance sports coaches' knowledge, confidence and capacity to recognize and respond to mental illness, whilst another (Glang, Koester, Beaver, Clay & McLaughlin, 2010) offered brief online training to sports coaches and reported improved confidence in sports concussion management and prevention, relative to controls. In the present study, causality of self-efficacy increases cannot be directly attributed to the training due to the lack of a comparison group. However, participants completed the

self-efficacy questionnaire before and immediately after the training, thus providing some level of reassurance that efficacy gains reported represented true training effects. These positive training effects could be explained in accordance with Bandura's (1997) sources of self-efficacy. Participants suggested that the practical component of the training provided opportunities for gaining mastery experiences of SFS activities. This could have been of particular importance for the primary school teachers due to their lack of confidence and perceived inability in terms of delivering PE (Morgan & Bourke, 2008). In addition, both coaches and teachers noted the importance of observing others (modelling) delivering intervention activities in the development of their own self efficacy. Nevertheless, the mechanisms for learning effects warrant further study.

The training and manual were considered acceptable to both teachers and coaches, whilst recommendations for future delivery were given. The pedagogical approaches were well received by participants, and utilized the types of delivery formats (e.g. lectures, group work, manuals, practical demonstrations) commonly incorporated within health related teacher training (Shepherd et al., 2013). Notably, the use of practical sessions prepared teachers and coaches effectively for the delivery of SFS and concurs with previous work (Evans, & Evans, 2007; Fenton, 2008; Nelson, Cushion &Potrac, 2013; Rossato & Brackenride, 2009; Taylor, Prain & Rosengren, 2008).

Recommendations to improve the training included having more time to rehearse delivery, to condense the classroom-based theory session, and to discuss potential issues that children may raise about smoking during sessions. A minority of teachers suggested that the theoretical session was unnecessary. This finding may reflect that teachers had more knowledge of health topics than sports coaches, and therefore have different learning requirements. However, it should be noted that previous research suggests that trained teachers are more likely to continue to implement smoking prevention curriculum than

untrained teachers who only received program materials (McCormick, Steckler & McLeroy, 1995). Future programs may wish to conduct a needs assessment to inform training design. With regards to the manual, suggestions were made to include additional visual learning resources, indicating that program support materials should be regularly reviewed and updated.

Strengths and Limitations

A major strength of this study is the use of mixed methods, as the qualitative data illuminated and added depth to the quantitative findings. Further, the study was the first sport-for-health intervention to explore the efficacy of training both coaches and teachers as intervention deliverers. There are, however, a number of study limitations. Firstly, a lack of comparison group means that causality attributed to the training workshop cannot be confirmed. Secondly, the sample size of coaches was small and represented a limited range of sports, whilst both the teachers and coaches were recruited from a single deprived local authority in the North-West of England, limiting the generalizability of findings. Thirdly, whilst the self-efficacy questionnaire items were created in accordance with guidelines (Bandura, 2006) and in a manner consistent with the development of similar scales (Norcross, Johnson, Bovbjerg, Koester & Hoffman, 2015), reliability checks were limited to internal consistency. Test-retest reliability checks were not considered appropriate as self-efficacy beliefs may not show a high degree of temporal stability (Bandura, 1997). Finally, although coaches and teachers were encouraged to respond honestly, the possibility of socially desirable and therefore biased responses cannot be ruled out.

Conclusion

Sport-for-health programs should provide practitioners with adequate training which includes the rationale and benefits of the program components and how to deliver the program optimally, alongside the provision of appropriate resources and support materials (Finch & Donaldson, 2009). This study has shown the value, acceptability and utility of a brief training workshop for increasing teachers' and coaches' self-efficacy towards delivery of SFS, a novel sport-for-health smoking prevention intervention. However, research is needed to determine whether teacher and coach efficacy beliefs translate into effective implementation of SFS.

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References

Alfrey, L., Webb, L., & Cale, L. (2012). Physical education teachers' continuing professional development in health-related exercise: A figurational analysis. *European Physical Education Review, 18*(3), 361-379. doi: 10.1177/1356336X12450797.

Almond, L., Almond, M., & Saunders, L. (2013). Coaching Sport for Health: A Review of the Literature, 1– 9. *Sports Coach UK*. Retrieved from http://www.sportscoachuk.org/sites/default/files/Coaching%20Sport%20for%20Health%20lit%20review.pdf.

Bandura, A. (1997). *Self-efficacy: The exercise of control.* New York: Freeman.

Bandura, A. (2006). Guide for constructing self-efficacy scales. In F. Pajares & T. Urdan (Eds.), *Self-efficacy beliefs of adolescents* (307-337). Greenwich, CT: Information Age Publishing.

Bapat, S., Jorm, A., & Lawrence, K. (2009). Evaluation of a mental health literacy training program for junior sporting clubs. *Australasian Psychiatry, 17*(6), 475-479. doi:10.1080/10398560902964586.

Department of Health. (2011), Healthy lives, healthy people: A tobacco control plan for England. Retrieved from https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/213757/dh_124960.pdf.

Eime, R. M., Payne, W. R., & Harvey, J. T. (2008). Making Sports Clubs Healthy and Welcoming Environments: A Strategy to Increase Participation. *Journal of Science and Medicine in Sport, 11*(2), 146-154. doi:10.1016/j.jsams.2006.12.121.

Evans, C., & Evans, B. (2007). More than just worksheets?: A study of the confidence of newly qualified teachers of English in teaching personal, social and health education in

secondary schools. *Pastor Care Education, 25*(4), 42–50. doi:10.1111/j.1468-0122.2007.00424.x.

Fenton, A. (2008). Caution children crossing ahead: child protection education with pre-service teachers using a strengths approach. In D. Bottrell, & G. Meagher (Eds.), *Communities and change: selected papers* (pp. 211-38). Sydney: Sydney University Press.

Finch, C. F., & Donaldson, A. (2009). A sports setting matrix for understanding the implementation context for community sport. *British Journal of Sports Medicine, 44*(13), 97-978. doi:10.1136/bjsm.2008.056069.

Foweather, L., Trigwell, J., & McGee, C. E. (2014). *SmokeFree Sports - a physical activity intervention to prevent smoking among primary school children*. Retrieved from http://www.ljmu.ac.uk/sps/SPS_docs/SMOKEFREE_SPORTS_2012-13_Final_Project_Report.pdf.

Geidne, S., Quennerstedt, M., & Eriksson, C. (2013). The youth sports club as a health-promoting setting: An integrative review of research. *Scandinavian Journal of Public Health, 41*(3), 269-283. doi: 10.1177/1403494812473204.

Glang, A., Koester, M. C., Beaver, S., Clay, J., & McLaughlin, K. (2010). Online training in sports concussion for youth sports coaches. *International Journal of Sports Science and Coaching, 5*(1), 1-12. doi:10.1260/1747-9541.5.1.1.

Gray, C. M., Hunt, K., Mutrie, N., Anderson, A. S., Leishman, J., Dalgarno, L., … Wyke, S. (2013). Football Fans in Training: the development and optimization of an intervention delivered through professional sports clubs to help men lose weight become more active and adopt healthier eating habits. *BMC Public Health, 12*(232), 1-17. doi:10.1186/1471-2458-13-232.

Hilland, T. A., Beynon, C. M., McGee, C. E., Murphy, R. C., Parnell, D., Romeo-Velilla, M., … Foweather, L. (2014). Training sports coaches to tackle tobacco: formative evaluation of the SmokeFree Sports campaign. *International Journal of Health Promotion and Education, 53*(1), 2-16. doi:10.1080/14635240.2014.915758.

Hopkinson, N. S., Lester-George, A., Ormiston-Smith, N., Cox, A,. & Arnott, D. (2013). Child uptake of smoking by area across the UK. *Thorax, 0*, 1-3. doi:10.1136/thoraxjnl-2013-204379.

Kealey, K. A., Peterson, A. V., Gaul, M. A., & Dinh, K. T. (2000). Teacher Training as a Behavior Change Process: Principles and Results from a Longitudinal Study. *Health Education Behavior, 27*(1), 64-81. doi: 10.1177/109019810002700107.

King, D. L., Delfabbro, P. H., & Griffiths, M. D. (2010). The convergence of gambling and digital media: implications for gambling in young people. *Journal of Gambling Studies, 26*(2), 175-187. doi: 10.1007/s10899-009-9153-9.

Lane, A. M., Hall, R., & Lane, J. (2002). Development of a measure of self-efficacy specific to statistics courses in sport. *Journal of Hospitality Leisure, Sport and Tourism Education, 1*(2), 47-56. doi:10.3794/johlste.12.17.

Marks, R., & Allegrante, J. P. (2005). A Review and Synthesis of Research Evidence for Self-Efficacy-Enhancing Interventions for Reducing Chronic Disability: Implications for Health Education Practice (Part II). *Health Promotion Practice, 6*(2), 148-156. doi: 10.1177/1524839904266792.

Marshall, C., & Rossman, G. B. (2006). *Designing qualitative research.* London: Sage.

McCormick, L. K., Steckler, A. B., & McLeroy, K. R. (1995). Diffusion of innovations in schools: A study of adoption and implementation of school-based tobacco

prevention curricula. *American Journal of Health Promotion, 9*(3), 210-219. doi:http://dx.doi.org/10.4278/0890-1171-9.3.210.

McGee, C. E., Trigwell, J., Fairclough, S., Murphy, R., Porcellato, L., Ussher, M., Foweather, L. *Effect of a sport-for-health intervention (SmokeFree Sports) on intentions to smoke and smoking-related cognitions among 9-10 year old primary school children: a controlled trial.* Manuscript submitted for publication.

Morgan, P., & Bourke, S. (2008). Non-specialist teachers' confidence to teach PE: the nature and influence of personal school experiences in PE. *Physical Education and Sport Pedagogy*, *13*(1), 1-29.

The National Institute for Health and Care Excellence. (2010). *School-based interventions to prevent smoking*. Retrieved from http://www.nice.org.uk/guidance/ph23.

Nelson, L., Cushion, C., & Potrac, P. (2013). Enhancing the Provision of Coach Education: The Recommendations of UK Coaching Practitioners. *Physical Education and Sport Pedagogy, 18*(2), 204-218. doi:10.1080/17408989.2011.649725.

Norcross, M. F., Johnson, S. T., Bovbjerg, V. E., Koester, M. C., & Hoffman, M. A. (2015). Factors influencing high school coaches' adoption of injury prevention programs. *Journal of Science and Medicine in Sport.* doi:10.1016/j.jsams.2015.03.009.

Play, Live, Be Tobacco Free. Retrieved from http://www.playlivebetobaccofree.ca/.

Priest, N., Armstrong, R., Doyle, J., & Waters E. (2008). Policy interventions implemented through sporting organisations for promoting healthy behavior change (Review). *Cochrane Database System Review,* (2). doi:10.1002/14651858.CD004809.pub3.

Romeo-Velilla, M., Beynon, C., McGee, C., Hilland, T., Murphy, R., Parnell, D., & Foweather, L. (2014). Formative evaluation of a UK community-based sports intervention to prevent smoking among children and young people: SmokeFree Sports. *Journal of Sport for Development, 2*(3).

Rossato, C. & Brackenridge, C. (2009). Child Protection Training in Sport-Related Degrees and Initial teacher Training for Physical Education: An Audit. *Child Abuse Review, 18*(2), 81-93. doi:10.1002/car.1052.

Sahota, P., Rudolf, M. C. J., Dixey, R., Hill, A. J., Barth, J. H., Cade, J. (2001). Evaluation of implementation and effect of primary school based intervention to reduce risk factors for obesity. *BMJ: British Medical Journal, 323*(7320), 1027-1029.

Shenton, A. K. (2004). Strategies for ensuring trustworthiness in qualitative data. *Education for Information*, *22*(2), 63-75.

Shepherd, J., Dewhirst, S., Pickett, K., Byrne, J., Speller, V., Grace M … Roderick, P. (2013). Factors facilitating and constraining the delivery of effective teacher training to promote health and well-being in schools: a survey of current practice and systematic review. *Public Health Research, 1*(2). doi: http://dx.doi.org/10.3310/phr01020.

Taylor, L., Prain, V., Rosengren, R. (2008). Pre-service teachers' engagement with student wellbeing. *Curriculum Perspectives, 28*(1), 21-34.

The US Centres for Disease Control and Prevention. (2007). *Tobacco Free Sports Initiatives.* Retrieved from http://www.cdc.gov/tobacco/youth/sports/.

Thomas, R. E., McLellan, J., & Perera, R. (2013). School-based programs for preventing smoking. *Cochrane Database of Systematic Reviews,* (4). doi:10.1002/14651858.CD001293.pub3.

Trigwell, J., McGee, C., & Foweather, L. (2012). *SmokeFree Sports Report: School Pilot.* Retrieved from http://www.ljmu.ac.uk/sps/SPS_docs/SmokeFree_Sports_PCT_Report_2010-11_FINAL.pdf

Trigwell, J., McGee, C., Casstles, C., Murphy, R., Porcellato, L., Ussher, M., & Foweather, L. (2014). Preventing smoking among nine to ten year-old children using a novel

514 school-based physical activity intervention: Overview of SmokeFree Sports. *Education and*
515 *Health, 32*(3), 93-102.
516 Trigwell, J., McGee, C. E., Murphy, R. C., Porcellato, L. A., Ussher, M., Garnham-
517 Lee, K., … Foweather , L. (2015). Process evaluation of a sport-for-health intervention to
518 prevent smoking amongst primary school children: SmokeFree Sports. *BMC Public Health,*
519 *15*(1), 347. doi:10.1186/s12889-015-1645-1.