

Barriers to and facilitators of smoking cessation in pregnancy and following childbirth: literature review and qualitative study

Linda Bauld,^{1,2} Hilary Graham,³ Lesley Sinclair,^{1,2*} Kate Flemming,³ Felix Naughton,^{4,5} Allison Ford,^{1,2} Jennifer McKell,^{1,2} Dorothy McCaughan,³ Sarah Hopewell,⁵ Kathryn Angus,^{1,2} Douglas Eadie^{1,2} and David Tappin⁶

¹Institute for Social Marketing, University of Stirling, Stirling, UK

²UK Centre for Tobacco and Alcohol Studies, University of Stirling, Stirling, UK

³Department of Health Sciences, University of York, York, UK

⁴School of Health Sciences, University of East Anglia, Norwich, UK

⁵Behavioural Science Group, University of Cambridge, Cambridge, UK

⁶Child Health, School of Medicine, Dentistry & Nursing, University of Glasgow, Glasgow, UK

*Corresponding author l.a.sinclair@stir.ac.uk

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Scientific summary

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Background

Maternal smoking in pregnancy causes substantial harm, increasing the risk of miscarriage, stillbirth, prematurity, low birthweight, perinatal morbidity and mortality, neonatal or sudden infant death, asthma, attention deficit hyperactivity disorder, learning difficulties, obesity and diabetes. Although many women in the UK stop smoking before becoming pregnant or soon after becoming pregnant, one in four women smokes for part of her pregnancy and one in eight smokes throughout her pregnancy. Smoking behaviour is influenced by many factors, including the role of partners and significant others (SOs), and support from health-care professionals (HPs). Further understanding of the perspectives and experiences of women, partners/SOs and HPs can help to inform interventions to promote smoking cessation.

Objectives

This study aims to explore and identify barriers to and facilitators of smoking cessation in pregnancy and post partum, and to explore the feasibility and acceptability of interventions to reach and support pregnant women to stop and remain abstinent from smoking.

Methods

The research involved an observational study with four elements.

1. A rapid mapping exercise of existing interventions for smoking cessation in pregnancy in the UK.
2. Systematic reviews of the qualitative evidence of barriers to and facilitators of smoking cessation in pregnancy from three perspectives: pregnant women, their partners/SOs and HPs. These reviews included 38 studies (1100 pregnant women) reported in 42 papers, nine studies (150 partners) reported in 14 papers and eight studies described in nine papers (190 HPs).
3. Qualitative research with pregnant women, partners/SOs and HPs, involving semistructured interviews and, in the case of HPs, some focus groups [with midwives and Stop Smoking Service (SSS) staff]. Forty-one interviews with pregnant women, 32 interviews with pregnant women's partners/SOs and 28 individual and group interviews with 48 professionals were conducted.
4. Recommendations for new interventions for smoking cessation in pregnancy that are either currently being researched or could be tested in future research.

The settings for the study were one study site in Scotland and a second site in England. Both covered a mix of urban and rural areas, with area A located in the central belt of Scotland and area B located in the north of England.

The research was informed by a theoretical framework, namely the social-ecological framework (SEF). This framework conceptualises behaviour as the outcome of an individual's interactions with their environment.

Results

Results are presented for each population in the study: pregnant women, partners/SOs and HPs. We summarise the results from the systematic reviews first, followed by our qualitative research. Each set of results draws on the key elements of the SEF. The SEF is a series of interlocking layers of influences on

health behaviours that run from the micro level (e.g. family) to the macro level (e.g. wider culture), and comprises individual characteristics, interpersonal factors, community factors, organisational factors and societal factors. Findings relating to existing services and interventions associated with the organisational 'layer' of the SEF. Suggestions for new interventions are included in *Conclusions*.

Pregnant women

Among the disadvantaged population of pregnant smokers whose views were synthesised from the review studies, barriers and facilitators were fluid and context dependent, with a capacity to help or to hinder smoking cessation. Four factors were identified that acted as both barriers to and facilitators of women's ability to quit smoking in pregnancy and post partum: psychological well-being, relationships with SOs, changing connections with her baby through and after pregnancy, and appraisal of the risk of smoking. Overall, the pregnant smokers were faced with more barriers than facilitators.

The findings of the pregnant women interviews were analysed at three out of the five levels of the SEF: individual, interpersonal and organisational. Most themes outlined acted as both barriers to and facilitators of positive behaviour change.

There appeared a predominance of barriers at the individual level. Smoking cessation was made difficult for some women by challenges related to a high incidence of disadvantaged circumstances and a lack of self-belief in the ability to stop smoking. Although all women acknowledged some potential harm from maternal smoking, risk perceptions were varied, with some women expressing uncertainty on this issue.

Women's beliefs about smoking in pregnancy were greatly influenced by close relationships with family and friends at the interpersonal level. Risk messages from their social networks often prevailed over information delivered by HPs, which was sometimes perceived as inconsistent. Other women's stories played an important role and were often used to refute the risks of smoking. Some women, however, used these as motivation to stop smoking. A partner's smoking behaviour appeared to have a greater influence on facilitating smoking cessation or making it difficult for women to stop. Workplace routines, demands and relationships could make it easier or more challenging for women to stop smoking, with exposure to negative attitudes leading, in some cases, to a defiant attitude in women about their smoking.

Among the women interviewed post partum, those who stopped attending (e.g. SSS) had a view that if they had maintained face-to-face contact with their advisor this would have helped them to quit. Although risk perceptions of smoking in pregnancy were mixed, in the postpartum period all women were extremely concerned about their baby's exposure to passive smoke and had detailed plans in place for minimising this. They described how the influence of their partner's smoking status was crucial to their success or otherwise in stopping smoking and remaining abstinent, and described an apparent lack of smoking-related discussion, advice and support by HPs.

Perceptions of the SSS were mixed, but the services did contribute to many women being successful in stopping smoking, although study recruitment procedures probably influenced this finding. Women who engaged with services often described positive relationships with cessation advisors that were key to continuing cessation support. A negative image of SSSs, however, discouraged some women from engaging. Women especially liked being offered flexibility in service delivery, home appointments and one-to-one support. Carbon monoxide (CO) screening was a powerful motivational tool for many women.

Partners/significant others

The synthesis of studies in the systematic review identified recurring smoking-related perceptions and experiences that hindered (barriers) and encouraged (facilitators) partners in considering quitting during the woman's pregnancy and into the postpartum period. These were represented in five themes relating to smoking being an integral part of everyday life, becoming and being a father, the couple's relationship, perceptions of the risks of smoking, and their harm reduction and quitting strategies.

The workplace emerged as an important space for and influence on partners' smoking habits, suggesting that alternative cessation intervention locations for future parents are needed. Conversely, health and community settings are seen to offer little support to fathers. Interventions that centre on valued personal traits, such as willpower and autonomy, may have particular salience. The review points, too, to the potential for health information that directly addresses perceived weaknesses in official advice, for example around causal mechanisms and effects and the contrary evidence of healthy babies born to smokers.

In the interviews, smoking or previous experience of smoking was common among partners/SOs, yet it was largely perceived as undesirable. Attitudes to smoking in pregnancy were even more stringent, with most participants showing disapproval towards this and expressing a preference for women quitting during pregnancy. This largely remained the case, even when interviewees had experience of other women smoking in pregnancy with no apparent ill effects for the baby. Partners/SOs also expressed concern about exposing babies and children to second-hand smoke.

According to participants' accounts, smoking appeared to have an important role within relationships between partners/SOs and pregnant women, although this was not always acknowledged by interviewees themselves. Stopping smoking, however, was often recognised as a fraught issue for relationships, with interviewees admitting to avoiding placing emphasis on women to stop for fear of provoking tension or conflict within the relationship or of putting women under excessive pressure.

Partners and members of wider social networks were generally supportive of pregnant women's attempts to stop smoking and were often willing to change their behaviour to assist quit attempts, including, most commonly, avoiding smoking in front of the pregnant woman. Others, particularly partners, had attempted to stop smoking at the same time as the pregnant woman, having recognised the potential negative influence of their own smoking. Some of these partners had attended SSS appointments with the pregnant woman.

Health-care professionals

The synthesis conducted for the systematic review identified that both the professional role of participants and the organisational context in which they worked could act as either barriers to or facilitators of an individual's ability to provide smoking cessation support to pregnant or postpartum women. Underpinning these factors was an acknowledgement that the association between maternal smoking and social disadvantage was a considerable barrier to addressing and supporting smoking cessation.

The review identified a role for professional education, both pre qualification and in continuing professional development, that would enable individuals to provide smoking cessation support to pregnant women. Key to the success of this education is recognising the centrality of the professional client/patient relationship in any interaction. The review also demonstrated a widespread professional perception that there is little that health-care providers can do that is effective in helping women give up smoking in pregnancy, particularly for those in disadvantaged circumstances. Improving the quality and accessibility of evidence on effective health-care interventions, including evidence on 'what works' to support smoking cessation in disadvantaged groups, should therefore be a priority.

In the interviews and focus groups with HPs, a number of health-care-related factors were described that could affect a pregnant smoker's ability to quit, both directly, through the advice or support provided, and indirectly, through care structure and environment. These operated and interacted across multiple levels of the SEF.

In relation to smoking cessation, similar to the review studies, a number of HPs in this study reported a lack of knowledge and confidence around raising and delivering information about smoking in pregnancy and, particularly in opt-in areas, several felt that tackling smoking was not a routine part of their role. This responsibility was primarily placed on midwives, although midwives reported feeling largely underskilled to do this. Across all professional groups, smoking in pregnancy training opportunities appeared to be limited and, when available, were usually accessed only by self-motivated individuals.

This, together with frequent organisational changes, inhibited the adoption and delivery of a cohesive approach to smoking in pregnancy and increased the chances of pregnant women being exposed to 'mixed messages'.

Contrary to the review findings, many participants in this study reported that prompts in clinical paperwork and systems positively facilitated discussion of smoking. However, at a local level, shifting priorities in targeting risk factors or health behaviours in pregnancy, and the availability of smoking cessation guidance and information, appeared to affect professionals' perceptions of the importance of addressing smoking in pregnancy.

This study extends the review findings by identifying how, in some cases, protecting the client relationship appeared to be a factor in professionals downplaying the risks of prenatal smoking and failing to emphasise the importance of abstinence. In some cases, however, good rapport was described as enabling frank discussions about smoking behaviour, and a minority believed that pregnant smokers expected, and wanted, to be told the risks. Some midwives felt that opt-out referral pathways from maternity services to a SSS (in place in area A) simplified referral and increased access to support, whereas others reported concerns about referring women who they felt were not at the 'right stage' to quit. Among SSS advisors, opt-out referral pathways were seen to increase client awareness about the SSS, but some also reported how the pathway clashed with a service philosophy of client choice. Overall, professionals' views were positive about using CO monitoring to identify smoking and as a motivational tool for those trying to quit. However, some expressed concerns that the information given to pregnant smokers about CO monitoring could lead to early dropout.

In some cases, poor communication between antenatal HPs and SSS advisors was identified as contributing to a deterioration in interservice relationships and mistrust, leading to reduced willingness to refer women to SSSs. The quality of communication varied between sites, however, with some examples of effective relationships and efforts made to maintain good communication among antenatal care professionals and SSS advisors. The interviews emphasised that HPs in both study sites were very cautious about nicotine replacement therapy (NRT) use in pregnancy, despite near-universal provision of NRT by the cessation services.

Conclusions

Our findings highlight the complex array of both barriers to and facilitators of smoking cessation in pregnancy. Many of these are present at the individual, interpersonal, community and societal levels of the SEF. They highlight how difficult it can be for women who continue smoking beyond very early pregnancy to then go on to quit. However, there are many promising drivers to behaviour change in the beliefs and values of women and partners/SOs. At the organisational level, there are also a range of practical steps that can be taken to better support women in their attempts to stop a damaging behaviour. These include the valuable role that the UK's SSSs play: offering effective behavioural support free at the point of use, as well as access to licensed stop smoking medication such as NRT. Opt-out referral pathways to these services, supported by routine CO monitoring, are largely acceptable to women, partners/SOs and professionals, and are a valuable element that should be further developed. Future interventions should acknowledge the context in which the majority of smoking in pregnancy occurs, recognising the relevance of disadvantage to women's lives.

Future research should focus on removing barriers to support and also on improving HPs' capacity to offer accurate advice and information, through improved training (e.g. on how best to convey harmful effects of smoking to the fetus), access to evidence and links between services. Further attention needs to be given to concerns about weight, particularly post partum, as these are a persistent barrier to cessation and a contributor to relapse. Likewise, more research is required on relapse prevention, as is more research to improve our understanding of the potential of new interventions, including financial incentives, self-help

interventions and social network interventions. Ongoing research on these and other topics (e.g. the efficacy and safety of NRT, and very new developments such as electronic cigarettes) is under way, but more is needed.

Overall, our findings suggest that, to effectively support smoking cessation in pregnancy, consideration needs to be given to all layers of the SEF and how they relate to individual women's needs and experiences. Ideally, interventions, or connected sets of interventions, should simultaneously operate at multiple levels. This is challenging but provides a basis for thinking about how best to approach future studies on behaviour change in pregnancy.

Study registration

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