How will we close the gap in smoking rates for pregnant Indigenous women?

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Antenatal smoking is the most important modifiable cause of adverse pregnancy outcomes.[1] Indigenous Australian women are more than three times more likely to smoke during pregnancy than non-Indigenous women.[2] As a result, adverse outcomes are more frequent in Indigenous than non-Indigenous babies, with smoking as an independent risk factor.[3]

Reviews of antenatal smoking interventions have shown effective cessation strategies for pregnant women.[1] However, persistently high rates of smoking during pregnancy among Indigenous women suggest that current interventions have had limited impact. Finding ways to effectively reduce smoking in pregnant Indigenous populations is a high priority. Previous systematic reviews have examined smoking cessation interventions for Indigenous peoples; however, none has specifically investigated smoking cessation among pregnant Indigenous women.[4,5]

We undertook a systematic review to examine the effectiveness and methodological quality of smoking cessation interventions targeting pregnant Indigenous women. In December 2012 we searched MEDLINE, PsycINFO, CINAHL (Cumulative Index to Nursing and Allied Health Literature) and Cochrane databases with appropriate search terms, and checked reference lists of retrieved articles. Papers were included if they reported a smoking cessation intervention aimed at pregnant Indigenous women, included a control group and provided cessation results specifically for pregnant Indigenous women. Only peer-reviewed, English-language papers were included. We extracted data and assessed methodological quality against Effective Practice and Organisation of Care quality criteria.[6]

Of 59 identified papers only two met eligibility criteria: one from the United States with Alaskan Native women,[7] and one from Australia with Aboriginal and Torres Strait Islander women.[8] Both involved culturally tailored interventions specifically developed for the target group, and used face-to-face counselling, structured follow-up, attempts to involve family members and nicotine replacement therapy (NRT). Both studies found no treatment effect and had a number of limitations (Box).

This lack of evidence of effective smoking cessation interventions for pregnant Indigenous women prevents implementation of evidence-based programs and highlights a critical need for methodologically rigorous testing of possible strategies.

What interventions should we test?

Evidence from research with Indigenous populations, and with pregnant women generally, provides guidance about the strategies that hold promise for pregnant Indigenous women. These strategies are outlined as follows.

Summary

- Aboriginal and Torres Strait Islander women are more than three times more likely to smoke during pregnancy than non-Indigenous women, greatly increasing the risk of poor birth outcomes.
- Our systematic review found that there is currently no evidence for interventions that are effective in supporting pregnant Aboriginal and Torres Strait Islander women to quit smoking, which impedes development and implementation of evidence-informed policy and practice.
- There is an urgent need for methodologically rigorous studies to test innovative approaches to addressing this problem.

Tailor interventions to local culture

Interventions for Indigenous people need to be culturally secure and locally tailored in order to increase acceptability and accessibility.[4,5,9] Involving local people in developing and tailoring intervention resources to the local context is critical for improving cultural appropriateness, building ownership and enhancing a sense of autonomy, all of which are important in successful cessation.[10]

Include routine assessment and support

Smoking cessation guidelines for pregnant women recommend a systematic approach to cessation where every woman is asked about her smoking status, with smokers followed up and supported to quit in a respectful manner.[11] Health professionals may be reluctant to repeatedly assess smoking status due to concerns that it may be deleterious to their relationship with women and the women's engagement with care.[9,12-14] However, most Indigenous women expect antenatal care to include smoking cessation advice.[15] Systems to support routine assessment and support should be included in intervention trials.

Provide relevant information

Indigenous women's knowledge of specific risks of smoking while pregnant is often vague.[9,15,16] Providing information on the harms of smoking and benefits of cessation may motivate some women to attempt to quit. Discussing the woman's role as a mother and a role model for her family may be more motivating for some Indigenous women than health risk narratives and should be addressed in intervention trials.

Deliver cessation support through all antenatal providers

Overall, 78% of Indigenous women attend five or more antenatal visits during their pregnancies.[2] Providing cessation support through routine antenatal care

Quality rating of eligible studies reporting smoking cessation interventions aimed at pregnant Indigenous women, according to Effective Practice and Organisation of Care quality criteria[6]

Criteria	Patten et al[7]	Eades et al[8]
Design	Clinical controlled trial	Randomised controlled trial
Allocation sequence adequately generated?	Unclear	Low risk
Concealment of allocation?	Unclear	Low risk
Baseline outcome measurements similar?	Low risk	Unclear
Baseline characteristics similar?	Low risk	Low risk
Incomplete outcome data adequately addressed?	Unclear	Low risk
Knowledge of allocated interventions prevented?	Unclear	Unclear
Protection against contamination?	High risk	High risk
Selective outcome reporting?	Low risk	Low risk
Free from other risk of bias?	High risk	Low risk
Comments	The low consent rate and the fact that many women did not take part because they were not ready to quit increases the chances of selection bias. The focus of the study was on feasibility and acceptability rather than on outcomes, although outcomes are reported	High loss to follow-up (33%), but this did not differ between the groups. Randomisation was by week of first visit, so the staff who were recruiting the women were aware of the group allocation. This may have contributed to the greater numbers recruited to the intervention group

overcomes barriers to attending separate services.[13] A collaborative approach between midwives, Aboriginal Health Workers (AHWs) and doctors, all providing consistent advice and support, will reinforce the importance of cessation. The credibility of medical practitioners may be a significant motivating factor for some women. In cases where midwives provide much of the care, the close relationship and frequent contact allows ongoing support. AHWs' cultural knowledge and strong links with local families will enhance implementation of cessation support.[14] In a survey of Indigenous women, over 70% of women felt that support from these professionals was likely to be helpful.[17]

Involve other members of the community

The high prevalence of smoking in Indigenous communities has resulted in smoking being "normalised" as a socially acceptable behaviour, with frequent triggers to smoke and cigarettes being readily available.[9,16,18] Smoking is important in social relationships, and cessation can lead to feelings of isolation.[18,19] Supportive environments for quitting have aided cessation among Indigenous ex-smokers.[10] Trialling interventions that incorporate mechanisms to provide a supportive, pro-cessation environment, such as involving household members in supporting women, peer support groups and whole community interventions should be further explored.[20]

Address relapse

Interventions that incorporate strategies to prevent smoking relapse result in fewer women relapsing in late pregnancy.[1] Up to 80% of women who quit during pregnancy relapse within 1 year.[21] Specific relapse prevention support should be provided during pregnancy and postpartum, including information about the effects of environmental tobacco smoke on the baby, support to make a smoke-free home and support for household members to quit smoking.[21] Relapse prevention strategies have not been examined among Indigenous women and should be included in future trials.

Use contingency-based financial rewards

Systematic reviews of antenatal smoking cessation interventions have found that financial rewards contingent on successful smoking abstinence are significantly more effective than other interventions.[1] However, their efficacy with Indigenous women has not been tested. Australian surveys indicate that contingency-based rewards are considered likely to be helpful by over 90% of Indigenous women and 83% of their antenatal providers.[17,22] This approach should be further explored with Indigenous women.

Other substances

Surveys of pregnant Indigenous women found that tobacco smokers were more than three times more likely than non-smokers to report cannabis or alcohol use, both of which are risk factors for continued smoking.[17] Given the known negative impact of these substances on birth outcomes and the interaction between their use and use of tobacco, interventions should include explicit assessment of other substance use, with support to address these if required.[11]

Training providers

A lack of protocols and poor smoking cessation support skills have been identified as barriers to providing cessation support to pregnant Indigenous women.[12] Well defined protocols detailing specific procedures, and the role of each provider, may assist in increasing provision of support in routine care.[13] Training should cover skills in smoking cessation support, supportive communication and using protocols, as well as recording women's smoking status, cessation behaviour and support provided, to facilitate consistent advice from all team members.

Possible challenges

Conducting complex behavioural intervention trials is difficult. Potential challenges include:

Random allocation

As smoking cessation support is provided at both the service and individual level, randomisation at the individual level is inappropriate as contamination between groups is likely. Cluster randomised controlled trials with randomisation of dispersed services may reduce this problem but require larger sample sizes and more participating services, increasing costs and logistics challenges. As services and communities may not be willing to be randomly allocated to "usual care", it may be more appropriate to undertake a head-to-head comparison of two approaches considered likely to be effective.[23]

Adherence to protocols

Poor adherence to intervention protocols may occur as a result of unsuitable intervention requirements, inadequate staff training, high staff turnover and lack of systems to support the intervention. Smoking among AHWs has also been identified as a potential barrier to implementation and would need to be addressed as part of the intervention.[14,16] Strong organisational support for the implementation and evaluation of strategies is critical to supporting adherence. Collaborative development of the intervention and study design with Indigenous services and pilot studies to assess acceptability and feasibility of the research will help successful implementation.

Conclusions

Given the importance of finding effective strategies to decrease smoking among pregnant Indigenous women, and the current lack of evidence to guide this process, there is an urgent need for rigorous studies to test innovative approaches. While there are many challenges in this research, these may be managed with existing methods for testing complex interventions in diverse settings.[24] Without an evidence base, we risk implementing ineffective strategies, failing to improve outcomes and wasting scarce resources.

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