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Thesis abstracts

Improving health providers' management of smoking in Australian Indigenous pregnant women

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Abstract of a thesis for a Doctorate of Philosophy in Behavioural Science submitted to the University of Newcastle, Callaghan, Australia

Globally, tobacco use is the leading cause of morbidity and mortality, causing an annual death rate of seven million people. In Australia, tobacco use is responsible for 9% of the total burden of disease. Smoking during pregnancy remains a significant public health problem for specific population groups, causing miscarriage, stillbirth, low birth weight and more. Psychosocial interventions such as behavioural counselling have been shown to be effective. Clinical guidelines in Australia recommend using the 5As approach: Ask about smoking status; Advise briefly to quit; Assess nicotine dependence and motivation to quit; Assist as needed (including behavioural counselling and nicotine replacement therapy [NRT] if required); and Arrange follow-up and referral to smoking cessation support services. NRT is recommended if the woman is unable to quit using only behavioural counselling, with oral NRT considered as first line.

Aboriginal and Torres Strait Islander pregnant women have the highest smoking rates in Australia at 43%, facing multiple barriers to quitting smoking, including lack of adequate support from health providers. Health providers also face many barriers to support pregnant women to quit smoking, on an individual and systematic organisational level. To date, very few interventions have tried to improve health providers' management of smoking with Aboriginal and Torres Strait Islander pregnant women. Those that have either did not use rigorous research methods or suffered from multiple implementation challenges.

The aim of this thesis was to explore health providers' practices regarding smoking cessation care during pregnancy, barriers to the provision of smoking cessation care and methods for improving health providers' care, and to test an evidence-based behaviour change intervention to improve health providers' provision of smoking cessation care to pregnant Aboriginal and Torres Strait Islander women.

As part of this thesis, a national cross-sectional survey of 378 general practitioners (GPs) and obstetricians was conducted about their knowledge, attitudes and practices providing smoking cessation care to pregnant women. Data from this survey revealed low levels of provision of several smoking cessation care components ("Assess," "Assist" and "Arrange"), with only 15.6% of GPs and obstetricians reporting "often and/or always" performing all of the recommended 5As. Overall, 25% of GPs and obstetricians reported "never" prescribing NRT, with nearly 50% reporting

they would "never" prescribe combination NRT (NRT patch plus an oral NRT). GPs and obstetricians reported that they lacked time, resources and confidence in their ability to prescribe NRT during pregnancy, and lacked optimism that their intervention would be effective.

Semi-structured qualitative interviews were conducted with 19 GPs, aiming to explore their management of smoking during pregnancy in greater depth and what would enable them to improve their smoking cessation support to pregnant women. Participants reported they lacked communication skills to provide pregnant patients adequate support for quitting, focusing on providing information on smoking harms and discussing treatment options only with patients who reported an interest in quitting. Lack of time, NRT cost, previous negative experiences with NRT and safety concerns, being unfamiliar with the Quitline process and uncertainty over its suitability (specifically for Aboriginal and Torres Strait Islander peoples) were all perceived as additional challenges. Participants reported needing clear detailed guidelines, with visual resources they could use to discuss treatment options with patients.

A narrative review of the current guidelines regarding NRT use in pregnancy was performed, while considering the existing evidence base on NRT safety, efficacy and effectiveness during pregnancy. Animal models show that nicotine is harmful to the foetus, especially for brain and lung development, but human studies have not found any harmful effects on foetal and pregnancy outcomes. Previous studies have used NRT doses that might have been too low and not have adequately accounted for the higher nicotine metabolism during pregnancy, and thus not sufficiently treating withdrawal symptoms. Nonetheless, studies of efficacy and effectiveness in the real world suggest that NRT use during pregnancy increases smoking cessation rates. Current national clinical guidelines from Australia, the United Kingdom, New Zealand and Canada recommend that if women are unable to quit smoking with behavioural interventions alone, they should be offered NRT in addition to behavioural counselling. The guidelines also impose many restrictions on NRT prescription during pregnancy and do not provide practical detailed guidance on when to initiate NRT and how to titrate the dosage. Pragmatic suggestions for clinical practice were made, including an approach for initiating and titrating NRT dosage during pregnancy and for discussing the risks versus benefits of using NRT in pregnancy with the pregnant patient and her partner.

A systematic review and meta-analysis reviewed the data from all published interventions aimed to improve health providers' smoking cessation care during pregnancy. Overall, 16 studies describing 14 interventions were included — 10 used a quasi-experimental design (pre–post), with only six studies using a randomised controlled trial (RCT) design. The review found that the median number of intervention components reported by studies was two (range 1–6). The most common intervention components used were training (93%, *n*=13), educational resources (64%, *n*=9) and reminders (57%, *n*=8). Studies used a variety of outcome measures, with different data collection methods, affecting the ability to synthesise the data. Specifically, the "Assist" or "Provide smoking cessation support" component of care was ill defined with vast variability

between studies. Meta-analysis of the different smoking cessation care components (according to the 5As) showed a small significant increase in the provision of all smoking cessation care components. The review suggests that use of a behaviour change theory to guide intervention development, and inclusion of audit and feedback, increases the likelihood of intervention effectiveness in improving health providers' provision of certain smoking cessation care components.

Informed by these studies, a multi-centre community-based participatory research study was undertaken. This study aimed to assess a collaboratively developed educational resource package to aid health providers' smoking cessation care in pregnant Aboriginal and Torres Strait Islander women. A panel of eight experts with complementary expertise provided input and suggestions to aid simplicity and usefulness of the resources. Staff members from three Aboriginal medical services in New South Wales, Queensland and South Australia scored each of the patients' resources using the "Suitability of Material" scoring method, finding that all received adequate or superior scoring. Average readability was grade 6.4 for patient resources (range 5.1–7.2; equivalent to ages 10–13 years) and 9.8 for health provider resources (range 8.5–10.6; equivalent to ages 13–16 years). Content analysis from focus groups with health providers from the three Aboriginal medical services revealed four themes including "Getting the message right," "Engaging with family," "Needing visual aids" and "Requiring practicality under a tight timeframe." Results were presented back to a Stakeholder and Consumer Aboriginal Advisory Panel (SCAAP), and resources were adjusted accordingly for inclusion in the ICAN QUIT in Pregnancy multi-component intervention.

Thereafter, a step-wedge cluster randomised pilot study was conducted: the ICAN QUIT in Pregnancy intervention. This intervention aimed to improve health providers' provision of evidence-based, culturally responsive smoking cessation care to pregnant Aboriginal and Torres Strait Islander smokers. Six Aboriginal medical services were randomised into three clusters for implementation. Clusters received the intervention staggered by one month. The intervention included a three-hour training webinar for health providers, educational resource packages for health providers and pregnant women, free oral NRT for pregnant women and audit and feedback on health providers' performance. Of 93 eligible health providers, 50 consented to the trial (54%), 45 completed the pre-intervention survey (90%) and 20 completed the post-intervention survey (40%). About 42% (n=39) of health providers participated in the webinar training. Mean knowledge composite scores improved significantly from pre to post (78% vs 84% correct, p=0.011). The mean NRT-specific knowledge composite score also improved significantly (68% vs 79% correct, p=0.004). The mean attitude composite score improved significantly (3.65 [SD 0.4] to 3.87 [SD 0.4]; p=0.017). The mean NRT-specific attitudes composite score also improved significantly (3.37 [SD 0.6] to 3.64 [SD 0.7]; p=0.005). None of the practices improved significantly, including the prescribing of NRT.

In summary, increasing health providers' provision of smoking cessation care to pregnant Aboriginal and Torres Strait Islander women is a significant priority in Australia. This body of work highlights that currently,

health providers are lacking in their provision of smoking cessation care, specifically in their support for pregnant Aboriginal and Torres Strait Islander women to quit smoking. Particularly, the provision of the "Assist" smoking cessation component was low, including the prescription of NRT. Multiple barriers exist and include lack of knowledge, skills (especially communication skills), time, resources and lack of optimism. Guidelines do not provide clear guidance, including the optimal timing for initiating NRT and titrating the dosage. The pilot intervention tested within this thesis showed promising initial results, with health providers significantly improving their knowledge and attitudes, although this did not translate into improved practices. Several strategies might enhance the effectiveness of the intervention and should be tested in a larger and adequately powered trial. The complex nature of tobacco smoking, and considering its historical and social context in Aboriginal communities, suggests that wider and more intensive interventions are needed.

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Intrinsic and extrinsic aspirations and psychological well-being: a meta-analysis and latent profile analyses of life goals

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Goal Contents Theory holds that intrinsic life goals (personal growth, relationships, community giving, and health) and extrinsic life goals (wealth, fame, and image) differentially relate to psychological well-being. Intrinsic life goals, or aspirations, inherently satisfy basic psychological needs and therefore promote optimal functioning, while an emphasis on extrinsic aspirations represents a reliance on external contingencies which, at best, only indirectly satisfies basic psychological needs. Despite abundant evidence supporting goal contents theory, positive links between extrinsic aspiring and well-being, observed particularly in Eastern European countries, have led some authors to contend that extrinsic aspirations may not be damaging in all contexts. In addition, the frequently observed positive correlation between intrinsic and extrinsic aspirations