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Chronological narratives from smoking initiation through to pregnancy of
Indigenous Australian women: a qualitative study

ABSTRACT:

Objective:

One in two Indigenous Australian pregnant women smoke, yet little is known about their trajectory of smoking. This study aimed to explore Aboriginal women's narratives from starting smoking through to pregnancy.

Methods

A female Aboriginal Researcher conducted individual face-to-face interviews with 20 Aboriginal women from New South Wales, Australia. Recruitment, through Aboriginal services and community networks, continued until saturation was reached. Audio-recorded transcripts were independently open coded by two researchers, inductively analysed and reported using a three-dimensional structure of looking backwards, forwards, inwards, outwards and a sense of place, to elucidate the chronology of events, life stages, characters, environments, and turning points of the stories.

Results

A chronology emerged from smoking initiation in childhood, coming of age, becoming pregnant, through to attempts at quitting, and relapse post-partum. Several new themes emerged: the role mothers play in women's smoking and

quitting; the contribution of nausea to spontaneous quitting; depression as a barrier to quitting; and the hopes of women for their own and their children's future. The epiphany of pregnancy was a key turning point for many – including the interplay of successive pregnancies; and the intensity of expressed regret.

Conclusions

Aboriginal women report multiple influences in the progression of early smoking to pregnancy and beyond. Potential opportunities to intervene include: a) childhood, coming of age, pregnancy, post-natal, in-between births; b) key influencers; c) environments, and d) targeting concurrent substance use. Morning sickness appears to be a natural deterrent to continued smoking. Depression, and its relationship to smoking and quitting in Australian Indigenous pregnant women, requires further research.

Keywords:

Indigenous population, pregnancy, smoking, smoking cessation, tobacco use disorder

INTRODUCTION

The whole of life-course is becoming increasingly recognised when considering the genesis of chronic disease. Although smoking prevalence is reducing slowly among Indigenous Australians, smoking during pregnancy occurs at four times the rate of non-Indigenous counterparts (48% versus 12%).¹ Few Indigenous Australian women quit in early pregnancy (3-4%).^{2,3} The views and experiences of Indigenous Australian women about smoking during pregnancy have been well documented.^{4-6 7,8} From a systematic review of studies, influences on smoking among pregnant Australian Indigenous women include social norms, life stressors, family smoking, the difficulties of quitting, and a lack of salience of anti-tobacco messages.⁵

Several studies explored smoking initiation in Indigenous Australians. Four interlinking factors in smoking initiation were relevant for rural Aboriginal women in New South Wales (NSW): historical influences from colonisation; the norms of smoking within Aboriginal social networks; stressful lives and disadvantage; and smoking to maintain relationships within family and community networks.⁹ Family and peers had a key role in the uptake of smoking among Aboriginal youth in the Northern Territory.¹⁰ However, denormalisation of smoking was also evident among Indigenous youth.¹⁰ A regional community survey of Indigenous men and women smokers of reproductive age revealed that a younger age of smoking initiation and alcohol use were related to lower intentions to quit smoking.¹¹ Other Australian studies similarly reported family and peer influences, stress, boredom and peer pressure as initiators for smoking

among Indigenous youth.^{12,13} Correspondences exist for smoking initiation in other Indigenous populations. Most American Indian teenagers first tried smoking in a social setting with cousins, siblings, or friends.¹⁴

None of these studies however traced the narratives of individual women from initiation to becoming pregnant and beyond. More needs to be known about the genesis of smoking and the journey to becoming pregnant, to know how smoking could be prevented in youth, pre- and post-conception, and after birth. The aim of this study (“Our Smoking and Smoke-Free Stories by Aboriginal Women”) was: to explore women’s narratives from starting smoking through to at least their first pregnancy.

METHODS

Design: A qualitative study to explore the stories about smoking and quitting of Aboriginal women. Narrative inquiry has its roots in phenomenology.¹⁵ It uses the power of narrated story to understand human experience. Within the framework of oral history, women have an opportunity to make connections and find meaning, such as making connections between the events in their own lives and the significance of them. The interviewer has a role in helping the narrator tell their story by respectful listening and appropriate prompting. We hoped, by allowing women to tell their story in their own way, to be able to allow evidence gaps to be naturally filled.⁵ Clandinin and Connolly propose a three-dimensional (3-D) framework in narrative inquiry, namely a text, which looks backward and forward; inward and outward; and situates the experiences in place.¹⁶ In

explicating the findings, this 3-D arrangement was used, giving attention to people, place, events and turning points. Note: participants were not specifically asked to view their lives in this way, but their stories were viewed with the aid of this framework during the analysis.

Sample and setting: a female Aboriginal Researcher (AR) who was working as a research assistant and undergoing PhD studies, conducted in-depth individual interviews with women from Hunter New England (HNE), in New South Wales (NSW), Australia. Inclusion criteria were women 16 years or over, who were pregnant or had given birth within the last 18 months, and had experiences of smoking or quitting during pregnancy.

Recruitment: Twenty women were purposively recruited to gain a range of perspectives, using maximum variation such as primigravida and multigravida, and of different ages and smoking status, from August 2015 until April 2016.

Recruitment was through staff at Aboriginal Community Controlled Health Services (ACCHS) an ArtsHealth Centre for pregnant women, Aboriginal community groups and playgroups, and Aboriginal Maternity Services, advertised through a flyer, by personal approach using the ARs networks, and through evaluators of another maternal cessation program, when they were contacting women. Recruitment continued until saturation of themes was reached. Location of interviews were: ACCHSs (n=3), ArtsHealth centre (n=4), private homes (n=7), playgroups (n=3), others (n=2), by telephone (n=1). Some women were accompanied by young children.

Procedures: The AR explained the purpose of the study, gained informed consent, and administered a demographic survey. The woman was then encouraged to tell her story in a non-threatening culturally appropriate way, using a methodology based on yarning, or conversational talking. Bessarab and Ng'andu state that: "Story telling is a feature of Indigenous societies where oral traditions were the main way of transmitting and sharing knowledge."¹⁷

Generally, the interviewer asked where the woman grew up, as a sense of place is important in Aboriginal culture. Where possible, interruptions were avoided, and probing was conversational. See interview guide, Box 1. Individual audio-recorded interviews were transcribed and emailed to the woman for member checking.

Box 1: Extract from interview guide for the narrative inquiry

"I am interested in hearing your story about how smoking tobacco has affected your life. You can tell this story in your own way, and I can help you by asking some questions along the way. You may start at any point, either tell me about your smoking now, or start at the beginning when you first tried smoking. If smoking yarndi (cannabis or pot) is part of your smoking story you may share that if you are comfortable doing so, and what you say will be confidential."

1. Questions that may be used (if not already covered)

- a. Can you tell me a bit about your tobacco smoking?
- b. Could you tell me about when you started smoking cigarettes?
- c. How has your smoking changed over the years?
- d. Who are the key people that have influenced your tobacco smoking?
- e. How is/was smoking different for you when you became pregnant?
- f. Have there been any turning points for you in your journey with tobacco smoking
- g. What would it mean to you if you stopped smoking cigarettes (if still a smoker)?
- h. What would it mean to you if you continued smoking cigarettes (if still a smoker)?
- i. What would it mean to you if you started smoking again (if an ex-smoker)?
- j. Why do you think there so much fuss about tobacco smoking?

Analysis: Researchers were a non-Indigenous medical practitioner experienced in Indigenous tobacco research (GG) and the AR (MB). The narrative analysis of transcripts was initially of an inductive nature. GG and MB independently line-by-line coded half of the transcripts using NVivo software (v11 Mac). A coding book was developed to identify and summarise the inherent meaning of each coding category. MB coded the remaining transcripts, with regular discussions with GG, especially when new codes emerged, to enhance reliability. Codes (first order constructs) were sorted into themes (second order constructs) and collapsed where necessary into larger categories. Consensus was reached about the emergent themes, named on a pragmatic or intuitive basis, and how these

fitted into a narrative structure, e.g. by exploring the elements of plot structure, life stages and chronology, characters and events, epiphanies and turning points of the story.¹⁶ A senior Aboriginal female academic (MG) and an Aboriginal Obstetrician (MC) gave input into the analysis to appropriately privilege the participants' voices.

To check validity and reliability, the post-modern perspectives were used of: 1) Richardson and St. Pierre who conceptualized validity in qualitative research as a multidimensional crystal, reflecting many facets of the truth (rather than the more common concept of triangulation of three points);¹⁸ and 2) Lincoln et al., who emphasize the importance of discourse within an ethical relationship with participants, privileging their voices, and self-reflexive transformation of researchers.¹⁹ The COREQ checklist guided reporting.²⁰ The paper highlights new findings, abbreviating those of previous studies on Indigenous smoking initiation.

Human Research Ethics Committee approvals were: HNE Local Health District, University of Newcastle, and Aboriginal Health and Medical Research Council NSW.

RESULTS

The 20 women were Aboriginal; aged between 17 and 38 years old (median 27; IQR 23.25:33). Over half were current smokers (n=11; 55%), 30% (n=6) were currently pregnant, and 65% (n=13) were educated to year 11 or less. All of the

women reported indoor smoking bans at home. See Figure 1 for a representation of the 3-D schema of findings, including “looking back”, “turning points”, “looking forwards”, “Looking inwards”, “looking outwards”, and “places”.

[Figure 1 here]

Looking back

Covert to overt smoking

At first children hid smoking from their parents or Elders: *...we're always trying not to let [Dad] see us (P5)*. Parents would sometimes admonish children when they were found smoking. Getting enough smokes to feed a growing habit involved: ‘sneaking’ cigarettes *...we'd take some smokes off our Nan and she wouldn't even know (P9)*, coercing family members into buying cigarettes, or picking up ‘bumpers’ (discarded butts): *...I was asking random strangers, anyone that I'd seen smoking a cigarette (P3)*.

A ‘regular’ smoker progressed from covert (hidden) to overt (open) smoking. Even parents or relatives, who previously disapproved, increasingly tolerated the young woman’s smoking. Becoming an overt smoker promoted easier access, and higher consumption: *...“Oh yeah, I can do it more now” (P12)*. Having entered the adult realm; children could sit with parents and share the smoking experience: *...I smoked behind my Mum's back for a while and then I just decided I didn't want to [any] more and we just smoked together (P11)*.

Having one's own money, turning 18 years (legal age of purchase), or access through parents was a conduit to regular smoking: *... I had me own money and I could buy myself so I had them whenever I wanted to (P1)*. The legal age for alcohol (18 years old) was associated with heavier smoking, and lack of control: *...when I started hitting the clubs at 18...I just become a smoker, like a heavy smoker...(P18)*. Participants noticed the addictive nature of cigarettes: *I couldn't stop, it was addictive (P10); The older I got the more I needed it and the stronger they got (P4)*. Smoking occurred with cannabis: it was common to mix cannabis with tobacco, even when cigarette smoking had been given up. One woman reported smoking heavily when using hard drugs.

Turning points

Becoming pregnant

Pregnancy was associated with changes to smoking behaviors. Sometimes the change was prompted by a woman being told smoking was bad for her or the baby, or she knew that herself. Several women stated they only quit for the baby: *...just knowing that I had a baby inside of me, I had to quit smoking so my baby would be healthy (P13)*. The dominant narrative is that few Indigenous women quit smoking in pregnancy. Although the 'quitting' described here may not conform to agreed abstinence standards, many women described being abstinent for reasonable lengths of time during their confinement. *I just woke up one morning and I didn't want to smoke and just stayed like that (P7)*.

Morning sickness

Almost half of the women narrated that nausea was a factor in aiding them to quit in early pregnancy:... *I just didn't feel like a smoke. I just quit because it was making me sick (P7)*. A degree of revulsion was evident:... *was just horrible, I couldn't stand it (P9)*. Many women would vomit and not be able to go near anyone who was smoking. Some women not realising they were pregnant, did not know what was happening to them. Even the thought of smoking, could induce nausea, and the smell of an electronic cigarette.

Even when people were smoking around me I'd walk away and I'd go somewhere else because it would just make me sick....I actually vomited from the smell of the cigarette. (P10)

After the birth

Many women who quit during pregnancy relapsed after birth. Smoking very soon after the birth was common. Finally getting to have one cigarette, on the day of birth, was perhaps a reward for the following person, leading to relapse:

Me and my partner went outside and I said, "yes, I finally get to have one finally". I went out and I had one... I think maybe two weeks, a month, by the time I started getting back on to it. I haven't stopped since. (P12)

Just 'one draw' of another's cigarette, could restart smoking at previous levels of consumption. At first some tried to hide that they had relapsed, knowing others would be disappointed, and perhaps they were disappointed in themselves: *...I didn't want anyone to know that I'd started again so I was hiding it for a bit (P7).*

Multiparous women reported a cycle of quitting for pregnancy, and taking up smoking afterwards. The following woman finally breaking the cycle: *...I made that choice, I wanted to smoke again so I did it. I'm glad this last time that I've quit for good (P9).*

Women were mindful to stay quit while breast-feeding, or moderate consumption. Keeping busy was used as a strategy to avoid smoking; cleaning the house for one woman; another expressing her milk to feed: *...I just didn't have time for it, so I didn't smoke as much (P19).* Transitioning to bottle-feeding became a trigger for relapse: *...once she was on the bottle, that's when I started smoking again (P9).* One woman gave up smoking after the birth to breast-feed, then re-started after weaning. Sometimes the first smoke after birth induced nausea again, but it was not a sufficient deterrent to keep off cigarettes.

...it made me sick and I don't know why I kept doing itI knew with my breast milk it would have made the babies sick... so when I stopped breast-feeding I went back to smoking. My first one was a bit rough and then after that it was like I was addicted again, and I smoked for another two years. (P10)

Looking forwards

Looking back provided an opportunity to express hopes and wishes for the future. Women expressed pride and hopefulness for a new future for themselves; a determination to achieve abstinence from smoking.

I'm pretty proud of myself that I can just quit just like that. There's a lot of people that can't do that. (P13)

'Having more energy' was a recurring topic: being active, keeping up with a growing child, and a lower likelihood of illness: *...I would have a lot more energy to be able to go and do stuff with my son and not be puffed (P18).*

Similarly, women desired a healthy future for their children and babies, and were relieved once they were able to quit: *...Now I realise it can make them sick I'm so glad I did stop (P10).* Women wanted to be around for their children: *...you want to be as long as you can with them to see them grow up, to be a great-great-grandma (P3).* It was important to be a good role model and break the cycle of smoking in the community: *I wouldn't want them to think that it is OK to smoke (P2).*

Looking inwards

Regret

Women spontaneously expressed regret for starting smoking: *...Until this day I'm the one that goes I regret picking it up (P16)*; regret for loss of health and what life would have meant as a non-smoker.

I regret – if I could ever go back in time and not smoke, I would probably be the most fittest person....I probably lost about ten years of my life (P3).

The most intense regret was for smoking during pregnancy or relapsing, and the way that had affected their babies' health. There was sorrow that if only more support had been available; one would have been able to stop. Underlying these narratives was a tone of helplessness.

...didn't have anyone there to push me to tell me to slow down [smoking] which I wish I really did now, because when she was born it was terrible to see how small she was... I knew she'd be small but not that thin...(P1).

...if I just had that little bit more support when I was pregnant with her maybe I could have prevented some of it....I feel my smoking has put my baby at risk (P16).

The following participant expressed her double bind about stress engendered by both smoking and quitting: *...stress and smoking they both did harm to her because by the time she was born she was a very unsettled baby...(P16).*

Conversely, some did not accept that smoking was bad for health: *...I had no signs*

of having an unhealthy baby, so I continued to smoke (P18).

Depression and stress

Four women reported that depression increased smoking and relapse, during pregnancy or after birth. One woman specified her relapse was associated with post-natal depression. Another used smoking as a way to motivate herself: *I basically realised if I don't smoke I'm not going outside.... It was just getting me out that front door...(P11)*. Smoking was recognized as a marker for stressful life circumstances: *... All I know is that my smoking is aligned with times of chaos and stress (P11)*. Stress was seen to maintain smoking, or trigger post-partum relapse. Stressors included arguments, relationship breakdowns, domestic violence, seeing an ex-partner, or when a partner was incarcerated.

I had a breakup with my husband, he fell into drug addiction and I kicked him out of the home. Just going through depression and grief. (P11)

Extreme stress made other things, even one's own or the baby's health, seem less important.

I knew it wasn't good for me or baby at the time, but like it was just more stress... because I had so much of it, I just didn't care what I was doing at the time. (P1)

Not smoking made stressors less manageable, but for one participant it was

worth not smoking none-the-less:....*I'd rather stress out now and not have a smoke, than stress out and have a smoke (P9).* Smoking cannabis (called yarndi by Aboriginal Peoples locally) could worsen depression:....*The yarndi was making my depression 10 times worse than it was, so I gave it up and I've never looked back... (P18).*

Looking outwards

Characters of mother and partner stood out as being key influencers in the women's realm. As an incidental finding, 'Mum' was the most frequent word spoken, after smoke or cigarettes, on an NVivo Word Frequency Query. References were mostly one's own mother, but could be a friend's mother. Mothers were reported to facilitate smoking as a supplier, consciously or otherwise:....*We used to get them from a friend's Mum once a week (P4).* On reflection, this participant was disappointed that her mother facilitated smoking:

I think the worst part was when Mum actually brought me my first packet of cigarettes...it would have been easier to stop if she was the type of parent that didn't enable it... (P16)

Equally, mothers were positive role models, either because they had never smoked, or they had quit successfully. Growing up in a non-smoking household was described as "clean". Women reported smoking less when around their mother, especially when pregnant, and because Mum's voice was: "*always in my*

head" (P18). Mothers were key supporters and encouragers for their daughter quitting in pregnancy.

...I said I'm trying to give up cigarettes and smoking and she's like you know you can do it, you don't need it and all of this sort of stuff. That gave me a bit of confidence in myself that I knew I could do it.... (P10)

In one case, mother and daughter quit together, when both were pregnant. Another daughter helped her mother quit smoking by working out how much she would save, if she quit; encouraging her to take a holiday. Some reported that their mothers or other pregnant relatives desperate to quit were lacking the support for doing so.

... if she [Mum] tried to give up cigarettes I know I would too just to help her, encourage her, because she doesn't get any sort of encouragement at home to not smoke... (P1)

Other maternal figures were other peoples' mothers and grandmothers. Fathers and stepfathers were mentioned infrequently.

Partners also were a positive or negative influence. A new positive relationship, or a sense of "getting settled", motivated quitting in pregnancy, or helped women stay quit. This could be more effective if the partner was a non-smoker.

I got into a new relationship and that's when he really helped me quitting because he didn't smoke at that time either.... (P12)

Partners who smoked sometimes tried to control the woman's smoking: women expected partners to do so. It helped if the partner was encouraging, or even 'nagging' (berating) the pregnant woman to quit: *...it was constantly my partner telling me you know "time to cut down"...(P18)*. This may not be possible depending on the level of stress: *...he was that stressed out he wouldn't try to tell me to stop smoking, so I didn't have anyone there to push me to tell me to slow down. (P1)* Having a stressful relationship, made women smoke more.

Places

Smoking was often associated with a place or environment: at school, home, work, or within a social group. Smoking initiation coincided with moving to a different place: *...once I did move up to the mission there were so many more people smoking around me...(P3)*; or a school where peer-pressure was more pervasive: *...when we moved up here, I started getting in with the real in-crowd...(P4)*. If circumstances had been different women reflected that they might not have taken up smoking: *...If I went to a different school I would have been right...wouldn't have met certain friends.... (P1)*.

Going back to visit one's family of origin or the community where raised, could increase consumption or be associated with relapse: *...When I go visit family is*

when I do smoke more than I usually do (P5). Telephoning a family member could be a trigger:... I'll go sit outside...ring my sisters, and that's when I smoke the most (P17).

DISCUSSION

In this qualitative study of 20 Aboriginal women, several themes emerged. As far as we are aware, new to the literature about Australian Indigenous maternal smoking are: the role of nausea in spontaneous quitting; the salience of 'Mum' to women's smoking and quitting; the interplay of smoking and depression as a barrier to quitting; and the hopes of women for their own and their children's health. We extended understandings about becoming an overt smoker after smoking initiation, the epiphany of pregnancy, as a key turning point; the interplay of successive pregnancies; the role that partners play; and the intensity of regret – noted as lacking by Wood et al, in their qualitative study.⁷

Almost half of our sample spontaneously reported that nausea was a key factor in quitting; not reported before in an Indigenous population. Nausea was reported in studies about quitting in early pregnancy among women in the general population internationally,²¹ and in regression analysis was a positive predictor of quitting.²² Continuing smokers are less likely to report morning sickness.^{22 23}

Family have influences on women's smoking in pregnancy,^{24-26 27 28} but mothers have not been singled out previously. The overwhelming reporting of 'Mum' in

the whole life-course of smoking and quitting was unexpected. Mothers were a source of information; a positive role model as non-smokers, or if they quit during pregnancy, or encouraged their daughter to quit. Conversely, mothers aided smoking initiation, and provided companionship for smoking. Other maternal and paternal were mentioned less frequently.

Partners are a known influence on women's smoking during pregnancy.^{21, 29, 30} Having a partner who smokes is a significant risk for smoking during pregnancy, and postpartum relapse. The interaction with the partner is important: a supportive partner can aid quitting, even if they smoke.³¹ Contrary to reports from other studies, in our study verbal harassment about smoking (*nagging*) was expected by some women, and could have a positive result: it was even missed if the partner was unable to *nag*, due to stress or self-concerns. Partners were reported to facilitate quitting or encourage smoking in pregnancy among Indigenous populations in US and Australia.^{5, 8, 32-34} Unfortunately, interventions that deliberately target partners, have not yet been effective.³⁵

Some women in our study reported depression and post-natal depression in relation to smoking in pregnancy and relapse. In contrast to the topic of 'stress', depression and smoking has received scant attention in this target group.⁵ In our study, depression was also linked with cannabis use. Cannabis, tobacco and alcohol use was reported to cluster in Aboriginal pregnant women, but the links to depression have not been explicitly addressed.³⁶ Another study, including 37 women (pregnant status unknown), reported that cannabis users in remote Australian Indigenous communities were four times more likely to have

depressive symptoms.³⁷

Nuanced attitudes about the impact of smoking on the participants included regrets for themselves and their children. Regret for starting smoking was reported in a study of Aboriginal men and women of reproductive age in NSW.³⁸ In a large national sample of Australian Indigenous smokers, 78% also regretted ever starting smoking.³⁹ However, some of our participants reported not regarding harm as occurring to their baby, as the baby seem healthy: a lack of visibility of harm was previously reported among pregnant smokers.⁴

Women reported hopes for their children's health and wellbeing, and hopes for quitting for their own benefit. Many programs promote quitting for the baby's sake, yet these women had an excellent grasp of what they gain from not smoking. 'Having more energy' and avoiding health problems were highlighted, and could be important for health promotion messages in a woman-centred approach.^{4, 40}

This study further extends our understanding of pregnancy as a turning point or epiphany in Aboriginal women's lives.⁴ Other studies described pregnant Indigenous women cutting down,^{5, 7} but few captured the serial nature of quitting and relapse from pregnancy to pregnancy, revealed here. Aboriginal Health Workers suggested it was easier to intervene with primigravida women compared with multiparous women,⁷ however women in our study reported frequent attempts to quit in successive pregnancies, and some finally achieved success.

Strengths and Limitations

This study uniquely allowed women to tell their story of smoking and quitting in a free-form way. This encouraged self-reflection on their life course as a smoker, the role of people and places in their stories, pregnancy as a turning point, and their hopes for the future. A strength of the study was the interviewer being an Aboriginal woman, thus providing a culturally safety milieu for the women involved, enabling the privileging of Aboriginal women's voices, and encouraging Aboriginal women to be engaged in the study who may otherwise would not have engaged in research. The study, in one region of Australia, may not be transferable to others. However, the 3-D schema affords a holistic perspective that may be applied beyond this population group, to other vulnerable pregnant populations where smoking prevalence is high.

Implications for practice and further research

This qualitative study in highlighting Aboriginal women's trajectory of smoking from initiation to pregnancy suggests potential entry points to intervene. These include: a) the life stages of coming of age, preconception, during pregnancy and between births; b) key characters notably mothers and partners; c) environments, e.g. school and community settings and d) other substances, e.g. alcohol and cannabis.

The opportunity to target pregnancy as a 'teachable moment' has been

promoted.^{41, 42} The most typical intervention is during pregnancy, by staff at antenatal clinics. Passey et al, suggested improvements to service provision to achieve this.^{42, 43} Fewer programs globally have been trialed for preconception smoking cessation care (defined as before and in-between pregnancies), with mixed success.⁴⁴ However these may be worthy of consideration as a whole of life course approach.

Delaying onset of smoking and alcohol may be considered at a policy-level (increase the legal age of purchase), as the evidence presented here supports that reaching the legal age of smoking and drinking accelerates consumption and access. Younger age of smoking initiation and drinking alcohol, in a NSW cohort of Aboriginal smokers, was associated with lower intentions to quit smoking in adulthood.¹¹ In this context targeting multi-substance use may be a worthy approach.³⁶

Smoking cessation interventions need to be easily accessible to women from adolescence onwards through multiple environments, such as schools, social settings, playgroups and workplaces. Community-based programs are worth exploring, employing strong maternal role models as messengers for early intervention with pregnant mothers. An Aunties program has been trialed for pregnant New Zealand Maori smokers with success, and a Native Sisters' program is underway for tobacco use in pregnant Alaska Native women.^{45 46}

The finding that morning sickness, as an important natural deterrent to smoking, needs exploration on a broader scale. Depression, and its relationship to

smoking and quitting in Australian Indigenous pregnant women, also requires further research.

DECLARATION OF INTERESTS

None declared

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FIGURES

Figure 1: 3-Dimensional Schema of themes from a narrative inquiry of 20

Aboriginal women in NSW