

Experiences and cessation needs of Indigenous women who smoke during pregnancy: a systematic review of qualitative evidence

Sandra Small^{1,3} • Caroline Porr^{1,3} • Michelle Swab^{2,3} • Cynthia Murray^{1,3}

¹*School of Nursing, Memorial University of Newfoundland, St. John's, Canada*

²*Health Sciences Library, Memorial University of Newfoundland, St. John's, Canada*

³*Memorial University School of Nursing Collaboration for Evidence-Based Nursing and Primary Health Care: A Joanna Briggs Institute Affiliated Group*

Corresponding author: Sandra Small, ssmall@mun.ca

Post-print version. Final published version available at: Small, S., Porr, C., Swab, M., & Murray, C. (2018). Experiences and cessation needs of Indigenous women who smoke during pregnancy: a systematic review of qualitative evidence. JBI database of systematic reviews and implementation reports, 16(2), 385-452. <https://doi.org/10.11124/JBISRIR-2017-003377>

Executive summary

Background

Smoking during pregnancy not only affects pregnant women's general health, but it also causes such serious problems as pre-term delivery, low birth weight, and sudden infant death. Rates of smoking during pregnancy are particularly high among Indigenous women. Learning about Indigenous women's experiences of smoking during pregnancy and associated smoking cessation needs is important to providing informed health care to them.

Objectives

The aim of conducting this review was to identify and synthesize the best available evidence to address two questions: (1) What is the experience of smoking during pregnancy for Indigenous women? and (2) What are the smoking cessation needs of Indigenous women who smoke during pregnancy?

Inclusion criteria

Types of participants

The participants of interest were Indigenous women who smoked during a current or past pregnancy.

Phenomena of interest

The phenomena of interest were the experience of smoking during pregnancy for Indigenous women and the smoking cessation needs of Indigenous women during pregnancy.

Context

The context was any community worldwide where pregnant Indigenous women live.

Types of studies

Studies considered for this review were those in which qualitative data were gathered and analysed on the phenomena of interest, including mixed methods research.

Search strategy

A comprehensive search was conducted for published studies in academic databases (i.e., PubMed, CINAHL, PsycInfo, Embase, Sociological Abstracts, SocINDEX, and Web of Science), unpublished studies in sources of gray literature (i.e. ProQuest Dissertations and Theses, OAlster, LILACS, MEDNAR, Google, Google Scholar, OpenGrey, and websites of relevant research institutions, government agencies, and non-government organizations), and any additional studies in reference lists. Language and date limiters were not applied. The searches were for all studies globally and were carried out on October 31, 2016.

Methodological quality

Studies that met the inclusion criteria were assessed for methodological quality, by two

reviewers independently, using the criteria of the JBI QARI Critical Appraisal Checklist for Interpretive & Critical Research.

Data extraction

Descriptive details of each study accepted for this review were extracted in accordance with the elements of the JBI QARI Data Extraction Form for Interpretive & Critical Research.

Data synthesis

The research findings that were relevant to the phenomena of interest and had participant voice were extracted from each included study and synthesized using the JBI meta-aggregative approach. The synthesized findings were assigned confidence scores in accordance with the JBI ConQual approach.

Results

Thirteen studies were included in this review following careful consideration of the methodological quality of each study. The studies yielded a total of 116 research findings, which were grouped into 19 categories and then aggregated to form five synthesized findings. Confidence in the findings was determined to be low to very low (see ConQual Summary of Findings).

Conclusions

The synthesized findings yielded a number of recommendations for health care provider practice and for health care and social policy. In particular, health care providers need to offer the best evidence-based smoking cessation interventions and offer support at every contact with pregnant Indigenous women who smoke, while taking into account barriers that impede quitting for these women. Policy makers need to implement comprehensive, well-resourced smoking cessation strategies for pregnant Indigenous women.

Implications for research

This review gave rise to several recommendations for future research. More studies are needed to strengthen the evidence and contribute further understanding to inform practice about smoking in pregnancy among Indigenous women.

Keywords

Indigenous, maternal smoking, pregnancy, experience, smoking cessation, qualitative research

ConQual Summary of Findings

Synthesized findings	Type of research	Dependability	Credibility	ConQual Score
1. Being pregnant is a motivator for Indigenous women to quit, try to quit, or cut down on smoking, mainly because they want to protect their children from the harmful effects of maternal smoking during pregnancy but also because of biological and environmental deterrents to smoking during pregnancy.	Qualitative	Downgraded 1 level	Downgraded 1 level	Low
2. Knowing the health risks to the child and that one should not smoke during pregnancy, feeling emotionally troubled about one's smoking while pregnant, or acknowledging that smoking is not a personally desirable behavior may not be sufficient impetus for pregnant Indigenous women to quit smoking.	Qualitative	Downgraded 1 level	Downgraded 1 level	Low
3. For Indigenous women, quitting smoking during pregnancy and staying quit may be impeded by such barriers as experiencing smoking dependency, being under stress, living in a smoking environment, lacking social support for quitting, rejecting or not knowing the facts about smoking harms, being unreceptive to anti-smoking messages, and having nothing to do.	Qualitative	Downgraded 1 level	Downgraded 1 level	Low
4. Indigenous women who smoke during pregnancy need prominently available and easily accessible health information, interventions, and programs for smoking cessation; ongoing support to stay quit; and helpful and understanding health care providers.	Qualitative	Downgraded 2 levels	Downgraded 1 level	Very low
5. Indigenous women who smoke during pregnancy have varied preferences for smoking cessation initiatives.	Qualitative	Downgraded 2 levels	Downgraded 1 level	Very low

Derivation of ConQual scores according to JBI approach.¹ See Appendix I for detailed explanation. The scores indicate that due to dependability limitations and a mix of unequivocal and credible findings across the included primary studies, confidence in the synthesized findings is low to very low.

Introduction

Although the overall prevalence of smoking has declined in many countries in recent years,^{2,3} smoking remains a major public health concern.⁴ In fact, the World Health Organization has described tobacco use as a global epidemic⁵ because of its continued and high prevalence in many countries worldwide.^{2,3,6} Smoking among Indigenous peoples is of particular concern.⁷⁻¹⁰ However, what is known about smoking prevalence in Indigenous peoples is largely based on reports from Western countries, namely Canada, the United States, Australia, and New Zealand. In these countries the prevalence rate of smoking among Indigenous peoples is higher than that in the general population; in some cases, it is two to three times higher.^{8,10-14}

Smoking is a leading cause of preventable morbidity and mortality within many countries. It is an important risk factor for three of the most common causes of death among adults, which are heart disease, lung cancer, and chronic lung disease,^{15,16} and is causally linked to many other diseases.¹⁷ Research indicates that smoking harms nearly every organ in the body.¹⁸ Half of all long-term smokers die prematurely from tobacco-related diseases.¹⁹ Many people who smoke have a reduced quality of life from the chronic and debilitating health effects and from the financial burden it causes.^{17,18} Smoking contributes to the impoverishment of disadvantaged people, not only because of the cost of purchasing tobacco but also because of lost wages due to smoking-attributed illness and death and the cost to families for treatment of such illness.^{6,20-22} The economic burden to society from smoking-related health care costs and lost productivity is enormous.^{6,23,24} Smoking during pregnancy is of particular concern. This is because not only does smoking adversely affect the pregnant woman's general health, it also adversely affects pregnancy outcomes and the health of the fetus and of the child after birth and into childhood and adult years. Cigarette smoking during pregnancy is considered to be the most common injurious agent for the fetus in Western countries.²⁵ Smoking during pregnancy has been found to be causally related to such serious consequences as placenta previa, placenta abruption, pre-term delivery, low birth weight, and sudden infant death. Moreover, it has been found to be causally related to cleft lip and cleft palate and to impaired lung function in childhood.^{17,19,26} There is also evidence to suggest an association with other congenital abnormalities, behavioral disorders in childhood (e.g., attention deficit hyperactivity disorder),^{17,19} and overweight and obesity in childhood with related risks for cardiovascular and metabolic disorders later in life.^{25,27-30}

In addition, women who smoke during pregnancy tend to smoke in the postpartum period.³¹⁻³⁵ Although smoking exposes breastfed babies to nicotine³⁶ and it is recommended that lactating mothers not smoke, breastfeeding is considered the best nutritional choice for infants regardless of maternal smoking status.^{37,38} Yet, women who smoke are less likely to breastfeed and more likely to wean early than are nonsmoking women.³⁹⁻⁴¹ A number of explanations for reduced breastfeeding among women who smoke have been proposed, including negative physiological effects of smoking on breast milk (e.g., potentially less milk production)⁴² and psychosocial barriers (e.g., socioeconomic disadvantage).⁴¹ In particular, women who smoke may be disinclined to breastfeed for fear of harming their babies.⁴³ Furthermore, maternal smoking in the postpartum period exposes infants to second-hand smoke if the mother smokes

in the child's presence. Second-hand smoke from parental smoking is causally associated with childhood lower respiratory illnesses, asthma, recurrent otitis media, and chronic middle ear effusion. As with smoking during pregnancy, exposure to second-hand smoke is a causal factor for sudden infant death and for lower lung function in childhood.²⁶

Despite a decline in smoking in pregnancy in Western countries in recent years, prevalence rates continue to be alarming, with population reports indicating that approximately 8 to 15% of women smoke during pregnancy.^{31,34,44-50} Similar to the discrepancy in smoking rates between Indigenous populations and non-Indigenous populations generally,^{8,10-14} smoking rates during pregnancy are considerably higher among Indigenous women than among other women. In Canada, 47% of First Nations⁵¹ and 56% of Inuit⁵² women, compared with 8.6 to 12% of women in the general population,^{31,47} smoke during pregnancy. In the United States, 16.7% of American Indian and Alaska Native women smoke during pregnancy compared with 12.2% of White women.⁴⁵ In Australia, 45% of Aboriginal women smoke during pregnancy compared with 7.4 to 12% of non-Aboriginal women.^{49,50} In New Zealand, approximately 38% of Māori women smoke during pregnancy compared with 14.8% of women in the general population and approximately 8% of women of European descent.³⁴ Yet, as concerning as the Indigenous figures are, they may be conservative estimates as they are based on self-reports. It is well acknowledged that women's self-reports tend to underestimate the actual rate of their smoking during pregnancy.⁵³⁻⁵⁵ Women might be reluctant to disclose that they smoke or might minimize the extent of their smoking because of the stigma associated with smoking during pregnancy⁵⁶⁻⁵⁸ or because of emotional difficulty from knowing the health impacts.^{56,59}

A number of factors are associated with smoking during pregnancy. Those most commonly recognized, both within non-Indigenous and Indigenous populations, include low-income, low educational level, unemployment, and deprived or remote community location, along with other sources of social stress;^{31,34,45,49-51,60-64} all factors that pervade Indigenous peoples.^{11,51,65-67} Within Indigenous populations generally, there are specific historical, cultural, and social factors that have been identified as important influences on the high rates of smoking. These are the introduction and commoditization of tobacco by colonists, exploitation of Indigenous peoples and dispossession of Indigenous lands by colonists, a high level of normalization of smoking and concomitant high exposure to smoking in Indigenous communities, Indigenous peoples' value of smoking as a social experience and a way to connect and maintain relationships,^{64,65,68-71} and inadequate attention to smoking prevention and cessation services and programs for Indigenous peoples, both in terms of availability and evaluation of effectiveness.^{64,72-75} Some Indigenous peoples use tobacco for traditional medicinal or ceremonial purposes, but it is the habitual use of commercial tobacco that is addictive, harmful, and of concern.^{72,76}

Although many women who smoke when they become pregnant quit at some point during pregnancy, a considerable number continue to smoke, whether at the same or a reduced level. Quit rates during pregnancy for national studies in Western countries vary from 22% in Australia⁵⁰ to approximately equivalent rates of 53% in Canada³¹ and 55% in the United States.³² However, generally, quit rates are much lower in pregnant women who are

socioeconomically disadvantaged.^{31,62,77} Within Indigenous peoples, specifically, the quit rate during pregnancy is in the area of 11% in Australia,⁷⁸ 30% in Canada (among First Nations communities),⁵¹ and 53% in the United States.⁶² It has been suggested that pregnancy is “a window of opportunity” to assist women to quit smoking because of their contact with health professionals for antenatal care^{79(p.26)} and because attachment to their unborn children⁸⁰ and concern for the child’s health may be strong incentives for quitting.^{81,82} However, there is little in the literature about effective smoking cessation interventions for pregnant Indigenous women.^{75,83}

Because of the high rate of smoking among Indigenous peoples, they shoulder a disproportionate burden of smoking-attributed morbidity and mortality, both generally and perinatally, compared with non-Indigenous populations.^{67,84,85} Given the high rate of smoking during pregnancy among Indigenous women and the consequent serious health effects, it is important to examine the experience of smoking during pregnancy for these women and to examine their smoking cessation needs. Hence, this systematic review was conducted, according to an *a priori* published protocol,⁸⁶ to address these phenomena. A search of literature databases and sources (i.e., *JB Database of Systematic Reviews and Implementation Reports*, Cochrane Library, PubMed, PROSPERO, and DARE) produced four prior qualitative systematic reviews about smoking during pregnancy.^{56,64,87-89} However, the inclusion criteria for those reviews are different than the inclusion criteria for this review. Two of the papers were about different aspects of the same review.^{56,87} All^{56,87-89} but one⁶⁴ of the reviews were about smoking during pregnancy in general populations in Western countries and without reference to Indigenous women. Furthermore, some of those reviews were restricted to specific topics (i.e. cutting down smoking,⁸⁷ the quitting process,⁸⁸ or the uptake of interventions for smoking cessation⁸⁹) and had mixed samples of participants that were not exclusive to women who had the experience of smoking during pregnancy.^{56,87-89} The one review about smoking during pregnancy in Indigenous women was confined to studies conducted in Australia and included other participants (e.g. non-Aboriginals, health care providers) in addition to Aboriginal women who had smoked during pregnancy. The focus was on knowledge, beliefs, attitudes and barriers with respect to maternal smoking and cessation,⁶⁴ rather than the experience and cessation needs from the perspective of women who smoked during pregnancy.

Review question/objective

The aim of this review was to identify and synthesize the best available evidence to address two questions: (1) What is the experience of smoking during pregnancy for Indigenous women? and (2) What are the smoking cessation needs of Indigenous women who smoke during pregnancy?

Inclusion criteria

Participants

This review consists of studies that had Indigenous women participants who smoked during a current or past pregnancy. No restrictions were placed on studies in terms of the participants' age, parity, length of gestation, and time since pregnancy. Studies were included whether the participants were solely Indigenous women or were a mixed sample (e.g., some non-Indigenous women, some men), as long as data could be extracted on the Indigenous women. The commonly accepted understanding of the concept Indigenous used by the United Nations was applied to identify studies conducted on the participants of interest. Indigenous peoples are found in 70 countries from the Arctic to the South Pacific, and given the diversity of the peoples, a single official definition is not appropriate.⁹⁰ However, there are commonly accepted criteria that are used to determine who Indigenous peoples are. The main criterion is self-identification as Indigenous at the individual level and acceptance by the Indigenous group as one of its members.⁹¹ Other criteria are that Indigenous peoples are peoples who

- “Demonstrate historical continuity with pre-colonial and/or pre-settler societies.
- Have strong link to territories and surrounding natural resources.
- Have distinct social, economic or political systems.
- Maintain distinct language, cultures and beliefs.
- Form non-dominant groups of society.
- Resolve to maintain and reproduce their ancestral environments and systems as distinctive peoples and communities”.

⁶⁶ In some countries, there may be a preference to use other terms, rather than Indigenous, such as Aboriginal, First Nations, First Peoples, and Tribes.⁹⁰

Phenomena of interest

The phenomena of interest for this review were the experience of smoking during pregnancy for Indigenous women and the smoking cessation needs of Indigenous women during pregnancy. Therefore, studies were included if one or both of those phenomena had been examined.

Context

The context for this review was any community worldwide where pregnant Indigenous women live.

Types of studies

Studies considered for this review were those in which qualitative data had been gathered and analysed on the proposed phenomena. Studies of interest included such methodologies and approaches as qualitative description, phenomenology, grounded theory, ethnography, action research, feminist research, and mixed methods research.

Methods

Search strategy

A comprehensive three-prong approach was employed in this review to find both published and unpublished studies globally. That involved (1) a search of academic databases for published studies, (2) a search of sources of grey literature for unpublished studies, and (3) a hand search of reference lists for studies unidentified through the prior two means.

Searching the academic databases involved three steps. An initial limited search of PubMed and CINAHL was conducted using these keywords: tobacco use, smoking, smoking cessation, expectant mothers, pregnancy, Indigenous, Aboriginal, First Nations, Native, Indian, tribe, experience, perception, perspective, narrative, interview, field study, focus group, audio-recording, observational method, qualitative, phenomenology, grounded theory, ethnography, mixed methods, and content analysis. That search was followed by an analysis of text words contained in the titles and abstracts of retrieved articles and of the index terms used to describe the articles. A second search was then conducted across all chosen databases (i.e., PubMed, CINAHL, PsycINFO, Embase, Sociological Abstracts, SocINDEX, and Web of Science) using all keywords, identified text words, and index terms. See Appendix II for the various search strategies.

Searching for unpublished studies was conducted through various other databases, search engines, and websites. Those were ProQuest Dissertations and Theses, OAlster, LILACS, MedNar, Google, Google Scholar, OpenGrey, and websites of relevant research institutions, government agencies, and non-government organizations (see Appendix II for a complete list of the websites). The search strategy for ProQuest Dissertations and Theses is detailed in Appendix II. The other sources were searched using various keywords and combinations of keywords suitable to the particular sources. The keywords were tobacco, smoking, smokers, cigarettes, Aboriginal, Indigenous, Native, First Nations, Inuit, Metis, addictions, maternal, maternal child health, maternal health and addiction, qualitative, and qualitative research.

Hand searching was carried out on the reference lists of records that had been retrieved and assessed for inclusion eligibility.

The academic databases and grey literature searches were implemented by the health sciences librarian on this review in consultation with the primary reviewer. The hand search of reference lists was conducted by the primary reviewer. No language, date, or country limiters were applied in any of the searches. The academic databases were searched on October 31, 2016, with each database search from inception through to October 31, 2016. The search for grey literature also occurred on October 31, 2016. The hand search was completed concurrently with the retrieval of full-text records for possible inclusion. See Figure 1 for a diagrammatic representation of the search approach, which was based on the Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) method.⁹²

Assessment of methodological quality

Studies agreed upon by the reviewers as meeting the inclusion criteria were assessed for methodological quality by the primary and secondary reviewers independently using the

standardized Joanna Briggs Institute (JBI) Critical Appraisal Checklist for Qualitative Research.⁹³ The checklist consists of 10 criteria concerning the methodology, methods, and findings of qualitative studies. Discrepancies that arose between the two reviewers on appraisal of the studies were resolved through discussion. The studies kept following the methodological assessment yielded the findings for the review.

Data extraction

Details about the studies included in this review were extracted from the records using the standardized JBI QARI Data Extraction Form for Interpretive & Critical Research.⁹³ Both the primary and secondary reviewers were involved in that process. Details were noted about the following aspects of the studies: methodology, method, phenomena of interest, setting, geographical location, cultural context, participants, data analysis, and the study author's conclusions. Other observations about each study that the reviewers thought were relevant were also noted (e.g. study limitations, strengths). For two of the studies,^{72,94} the authors were contacted for further detail about the methods.

Data synthesis

The qualitative research findings from the included studies were synthesized using the JBI procedures.⁹³ That involved several steps:

1. The research findings were extracted from each study by the primary reviewer. The findings were identified through repeated reading of the text that formed the findings or results sections of the records. Text was considered a research finding if it was a verbatim statement (or statements) or phrase by the study author, which was that author's description or interpretation of narrative data, with accompanying illustration. For the studies in this review, the illustrations were participant quotations (i.e., voice). Only findings that could be confidently identified as being Indigenous women's experiences and smoking cessation needs in relation to their smoking during pregnancy (and had their voices explicitly) were extracted from the studies.
2. Each extracted finding was rated independently by the primary and secondary reviewers according to three levels of credibility (unequivocal, credible, or unsupported) and consensus on level was reached through discussion, as necessary. Where there was more than one quotation for a finding, the highest level of credibility among the quotations was assigned.
3. Findings deemed unequivocal (i.e., the study author's words undeniably supported by participant quotation) or credible (i.e., the fit between the study author's words and participant quotation not fully apparent but believable) by the two reviewers were grouped into categories on the basis of similarity in meaning. The categories were derived through discussion between the two reviewers. Findings considered unsupported (i.e., participant quotation completely inconsistent with study author's words) by the two reviewers were eliminated from further analysis.

4. All the categories were examined and those with commonality among them were aggregated by the primary reviewer to form synthesized statements that (a) represented conclusions from the various findings across the studies and (b) formed the basis for recommendations for practice and policy. The synthesized findings and recommendations were examined and affirmed by the secondary reviewer and by the other two reviewers on this team. The review findings were also examined by two Indigenous women whose work involves promoting smoking cessation and tobacco control. The findings resonated with what they knew about Indigenous women's experiences of smoking during pregnancy, the availability of resources and supports for Indigenous women who smoke during pregnancy, and helpful resources and supports for smoking cessation.

Confidence in the findings

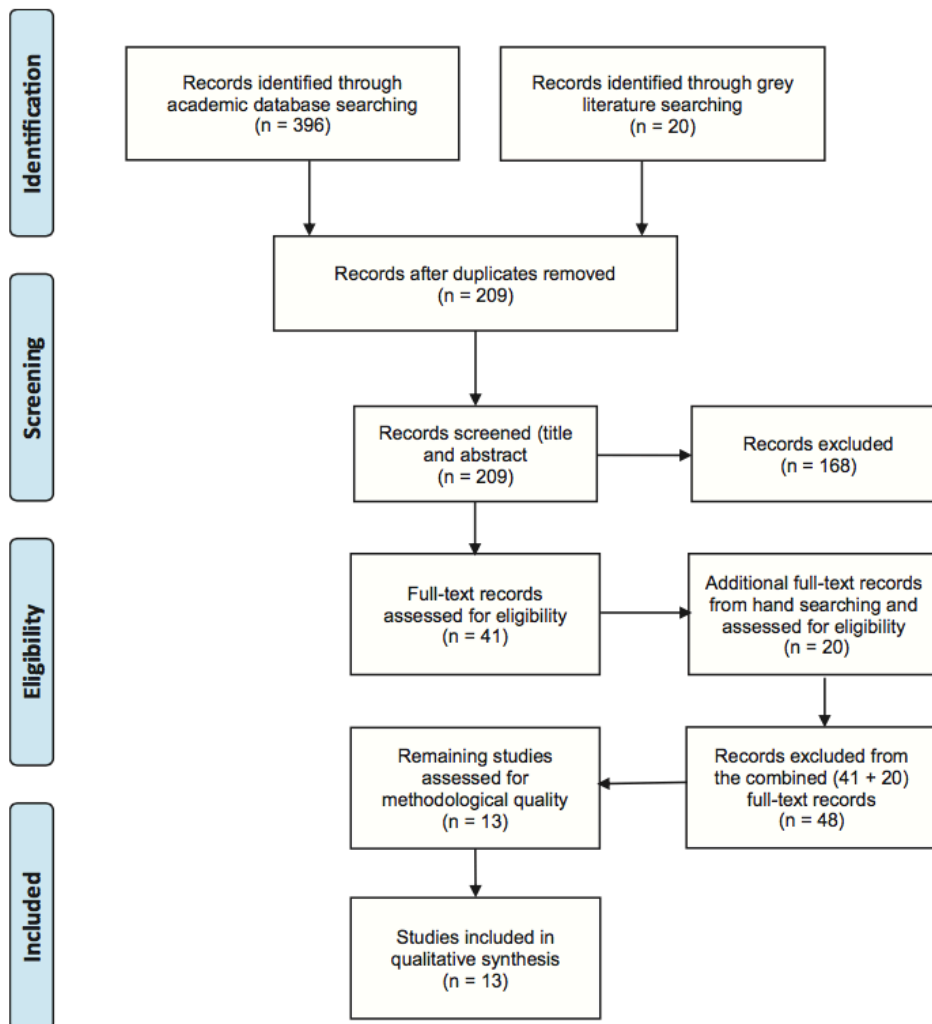
The synthesized findings were subjected to an assessment, using the JBI ConQual approach, to determine the level of confidence (trust) knowledge users may have in the value of the synthesized findings for informing healthcare practice and policy.¹ Within the approach, level of confidence for each finding is scored as high, moderate, low, or very low on the basis of the dependability of each primary study from which the finding was composed and the credibility of the research findings from those studies. Dependability is established through the responses to five criteria on the JBI QARI Critical Appraisal Checklist for Interpretive & Critical Research and credibility is established through the congruency between the study author's interpretation and supporting data (e.g., participant quotations). The ConQual score is downgraded in consecutive order, from a starting point of high, on the basis of the combined scores applied to dependability and credibility. See Appendix I for a detailed explanation of the derivation of the ConQual scores for this systematic review.

Results

Study inclusion

Searching the academic databases yielded 396 records and searching for grey literature yielded 20 records (see Figure 1). After eliminating duplicates among the 416 records, 209 were screened for possible full-text review. The screening process involved examination of the title and abstract of each record, by the primary and secondary reviewers independently, to determine possible fit with the review inclusion criteria. Records agreed to affirmatively by both reviewers were retained for full-text examination. Records considered by both reviewers as not suitable were excluded from further examination. Records for which there was disagreement between the two reviewers as to retention or exclusion were assessed by a third reviewer. The decision of that reviewer determined retention or exclusion of those records. That screening process resulted in 41 records remaining for full-text review. The reference lists of those records were searched by the primary reviewer and yielded a further 20 records, for a total of 61 records for full-text review by the primary and secondary reviewers independently. All records found through the three searches were in the English language.

Discussions between the primary and secondary reviewers resulted in consensus that 13^{72,94-105} of the full-text records met the inclusion criteria and should be retained for methodological assessment; the remaining 48 records would be excluded. The 13 retained studies were composed of two doctoral^{96,101} and two master's theses,^{95,103} four agency reports,^{72,94,100,104} and five journal publications.^{97-99,102,105} See Appendix III for a list of retained studies. Forty-six of the 48 excluded records did not meet one or more inclusion criteria. See Appendix IV for a list of excluded studies. One of the other two records (#15 excluded record) was not found, but the study appears to have been published in two subsequent papers, both of which were among the 13 retained records.^{97,98} For the purpose of this review, the two papers were treated as two studies as the research findings are different between them. The other record (#19 excluded study) appears to be a publication from a prior unpublished report.¹⁰⁰ The unpublished report was chosen for retention over the published paper as it contains more of the research findings that are relevant to this review than does the published paper.



From: Moher D, Liberati A, Tetzlaff J, Altman DG, The PRISMA Group (2009). Preferred Reporting Items for Systematic Reviews and Meta-Analyses: The PRISMA Statement. PLoS Med 6(6): e1000097.

Figure 1. Search and study selection process⁹²

Methodological quality

The methodological assessment of the retained studies is presented in Table 1 and reveals considerable variability across the studies. Seven^{72,94,95,97-99,102} of the 13 studies achieved appraisal scores of 50% or less, indicating that only 5 or fewer of the 10 assessment criteria were met for those studies. The remaining 6 studies^{96,100,101,103-105} had scores of 70% or higher, indicating that at least 7 of the assessment criteria were met for those studies. Three studies,^{96,101,103} all of which were doctoral or master's theses, achieved 100% ratings. Both the agency reports and journal publications had variable methodological quality and overall, may be considered to be of less methodological quality than the theses. In general, the lower assessment ratings reflect inadequate detail or lack of clarity in the studies with respect to the methodologies and methods and lack of information about the respective researcher's cultural or theoretical stance and influence on the research.

However, regardless of the assessed quality of the studies, and after careful deliberation, the decision was made by the primary and secondary reviewers to include all 13 studies in this review. The rationale for that decision was based on several considerations: the studies had relevant findings that included participant voice; the studies had at least credible findings; only supported findings (unequivocal and credible) would be extracted for synthesis; there was a limited number of studies relevant to the phenomena of interest; all of the studies together would provide sufficient findings for synthesis; supported findings from all the studies would provide as complete an understanding as possible from what was known about the important public health concern of smoking during pregnancy among Indigenous women; and the ConQual scores would provide readers with a level of confidence in the usability of the synthesized findings.

Table 1: Studies assessed for methodological quality

Study	Appraisal questions									
	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
BlueEye, Rohweder, McDougall, 2008 ⁷²	U	U	U	U	U	N	N	U	U	U
Drewer, 2014 ⁹⁵	U	U	U	U	U	Y	Y	Y	Y	Y
Glover, 2000 ⁹⁶	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Glover, Kira, 2011 ⁹⁷	U	Y	N	N	U	N	N	U	Y	Y
Glover, Kira, 2012 ⁹⁸	N	Y	N	N	U	N	N	Y	N	Y
Glover, Kira, Cornell, Smith, 2016 ⁹⁹	U	Y	U	U	Y	N	N	U	Y	Y
Glover, Nosa, Watson, Paynter, 2010 ¹⁰⁰	Y	Y	Y	Y	Y	U	Y	Y	Y	Y
Hughes, 2011 ⁹⁴	U	U	U	U	U	Y	U	Y	Y	Y
Nelson, 2012 ¹⁰¹	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Pletsch, Kratz, 2015 ¹⁰²	U	Y	Y	N	U	N	N	N	Y	Y
Shepherd-Sinclair, 2014 ¹⁰³	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y

Wilson, 2009 ¹⁰⁴	Y	Y	Y	U	Y	U	U	Y	Y	Y
Wood, France, Hunt, Eades, Slack-Smith, 2008 ¹⁰⁵	U	Y	Y	Y	Y	U	U	Y	Y	Y
% Yes	39%	77%	54%	39%	54%	39%	39%	69%	85%	92%

See JBI Critical Appraisal Checklist for Qualitative Research for the appraisal questions.⁹³ N, no; U, unclear; Y, yes.

Characteristics of included studies

The 13 studies were confined to four countries: one in Canada¹⁰¹ two in the United States,^{72,102} three in Australia,^{94,104,105} and seven in New Zealand.^{95-100,103} For some of the studies, the specific qualitative methodologies were not explicitly stated.^{72,95,105} For other studies, designs were reported as longitudinal quasi-experimental (with open-ended questions);⁹⁶ exploratory qualitative;^{97,98,100} exploratory participatory action;⁹⁹ mixed methods;¹⁰¹ longitudinal qualitative descriptive;¹⁰² Kaupapa Maori qualitative research;¹⁰³ and action research.¹⁰⁴ One study was described as having a phenomenological design but the methods did not match the stated methodology and the study may more suitably be described as qualitative evaluation.⁹⁴ The data across the studies were collected through group (i.e., focus groups, group discussions, group meetings, small group interviews), paired interviews, or individual approaches (i.e., case studies, individual discussions, semi-structured interviews, questionnaire-guided interviews). For two of the studies, the data analysis methods are not clear.^{72,99} For the remaining studies, the data were thematic or content analysed for themes or categories. The Indigenous women in the studies consisted of Inuit in Canada, Native Americans (it is not clear whether any were Alaska Natives) in the United States, Aboriginal people (it is not clear whether there were Torres Strait Islanders) in Australia, and Māori in New Zealand. Because of the lack of detail about the samples in some studies, especially in studies with mixed samples and group data collection, it is not possible to determine the total number of participants across the studies who met the inclusion criteria for this review or to aggregate sociodemographic characteristics. However, the number of participants who were Indigenous women and who had the experience of smoking during pregnancy can be determined to be at least 105. The women in the samples either had smoked during a pregnancy in the past or were pregnant at the time of the study and were smoking or had smoked during that pregnancy. See Appendix V for a summary of various characteristics of the studies.

Review Findings

Analysis of the 13 studies yielded a total of 116 research findings, 79 (68%) of which were assessed to be unequivocal and 37 (32%) as credible. See Appendix VI for the findings from each study. The findings were grouped into 19 categories, which were then aggregated to form five synthesized findings (see Table 3). As revealed in the following descriptions, synthesized findings I to IV address review question #1, as the findings are about Indigenous women's experience of smoking during pregnancy. In addition, synthesized finding IV addresses review question #2, as it is about the women's smoking cessation needs. The women's needs may also be inferred through synthesized finding V, which is about their preference for smoking cessation initiatives.

Synthesized finding I

Being pregnant is a motivator for Indigenous women to quit, try to quit, or cut down on smoking, mainly because they want to protect their children from the harmful effects of maternal smoking during pregnancy but also because of biological and environmental deterrents to smoking during pregnancy.

Synthesized finding I was derived from 13 research findings grouped into 4 categories:

1. Being pregnant is a motivator to quit, try to quit, or cut down on smoking

For some women, being pregnant was a motivator to quit, try to quit, or cut down on smoking during their pregnancies.

“As soon as I found out I was pregnant I gave up just like that.”^{100(p.12)}

“...because I wanted to give up. Because you know everyone knows you don’t smoke when you’re pregnant.”^{100(p. 66)}

2. Quitting smoking for baby’s health

Women wanted to quit smoking because they were aware of the harmful effects on the baby of smoking during pregnancy and they wanted to protect their babies’ health.

“I do want a healthy baby this time, not a dead baby.”^{95(p. 53)}

“Well I went cold turkey, the health of my baby is more important than a cigarette a day. So it was not easy at first, but I just put it to myself, like my son, my baby is more important. So two weeks later I did not want one. I was Ok, did not feel like a cigarette. There was no cravings, no nothing.”^{103(p. 52)}

3. Experiencing biological deterrents to smoking during pregnancy

Women experienced biological deterrents to smoking during pregnancy, such as morning sickness and altered taste and smell for cigarettes, which caused them to not want to smoke.

“I think it [morning sickness] had a lot to do with that, every time I went to have a smoke, it was like err, gross.”^{95(p. 52)}

“I couldn’t stand the smell of cigarettes. I could smell cigarette butts from a fucking mile away, yeah. I just couldn’t stand it, so I just went cold turkey.”^{100(p. 12)}

4. Experiencing environmental deterrents to smoking during pregnancy

Women experienced environmental deterrents to smoking, mainly perceived social pressure; that is, the perception that others expect women not to smoke during pregnancy. Such perceived pressure caused the women to not want to smoke in public.

Environmental restriction on smoking, such that smoking was not permitted in certain places, was also a deterrent to smoking.

... “put off smoking in public because of people pressure.”^{98(p. 68)}

“I cut down a lot when I was in hospital, and I was in hospital for 6 weeks, plus you'd need to go downstairs and outside, out on the road to smoke there anyhow, so can you really be bothered. And then I think cos of all the health officials, you know, and again, that, the whole smoking thing, that was me being self-conscious I guess and I don't know, I just didn't want to be looked down on you know, quietly I just wanted to be my own private person and not really let on you know. So it was easier for me to go hours without a cigarette in hospital, and I think too that bleeding, I started feeling really guilty, but obviously not guilty enough to make me stop.”^{95(p. 52)}

Synthesized finding II

Knowing the health risks to the child and that one should not smoke during pregnancy, feeling emotionally troubled about one's smoking while pregnant, or acknowledging that smoking is not a personally desirable behavior may not be sufficient impetus for pregnant Indigenous women to quit smoking.

Synthesized finding II was derived from 14 research findings grouped into three categories:

1. Knowing the health risks to the child and that one should not smoke during pregnancy

Women knew that there are health risks for the baby, such as prematurity, low birth weight, respiratory problems, and even death, when women smoke during pregnancy and knew that because of health risks women should not smoke during pregnancy. Some women had previously had children with such health problems or had experienced stillbirth and those women attributed the problems to their own smoking during pregnancy.

“I can go in early and have prem babies through all the smoking that I do. My babies are always too small; they are never the weight, the proper weight.”^{105(p.2358)}

... “cos they couldn't find a reason why the baby died. Smoking is the only thing that happened during the pregnancy.”^{95(p.55)}

“Everyone knows you don't smoke when you're pregnant ... a reason for stopping, but I didn't actually do it.”^{100(p.12)}

2. Feeling emotionally troubled because of smoking during pregnancy

Women who smoked during pregnancy were emotionally troubled as a result of it. They experienced guilt and other negative emotions for possibly harming their unborn children and they felt they were being judged by others for smoking.

“Even though I know it's hurting my baby and I don't like that part, but I think I'm just so

addicted to it that its not making me want to quit as much ... I feel sorry for the baby inside me because the baby can't go nowhere.”^{101(p.116)}

“A lot of people would look down on mums smoking. So I think for me, I think it was more, a self-image, a self-image or something. I didn't want to be that pregnant woman, in public, smoking where people can clearly see I'm hapu [pregnant].”^{95(p.67)}

3. Acknowledging that smoking is not a personally desirable behavior

Women acknowledged that they found smoking to be an undesirable behavior because of its negative attributes, such as unappealing smell, and because it negatively affected their health. They referred to it as a “disgusting habit”.^{95(p. 49)}

“A smoke doesn't even taste that great, it's just the feeling I get when, when I actually inhale a smoke.”^{95(p. 49)}

“If I could give it up, it would do me world of good.”^{97(p. 25)}

Synthesized finding III

For Indigenous women, quitting smoking during pregnancy and staying quit may be impeded by such barriers as experiencing smoking dependency, being under stress, living in a smoking environment, lacking social support for quitting, rejecting or not knowing the facts about smoking harms, being unreceptive to antismoking messages, and having nothing to do.

Synthesized finding III was derived from 47 research findings grouped into 7 categories:

1. Experiencing smoking dependency

Women who continued to smoke during pregnancy or who quit but relapsed did so because smoking was difficult to quit due to tobacco dependency or as some women put it “addiction.”^{101(p.115)} Finding it “really hard”^{100(p.66)} to stop smoking was a commonly identified reason for continued smoking during pregnancy.

“I smoked cigarettes [even family said] ‘stop smoking’...I used to have to hide from my pop to have a smoke. [I tried to give up] by trying to cut down, smoke less, tried to give up altogether [but it] didn't work.”^{104(p. 32)}

“A couple of weeks before I had my daughter. Oh, I feel like a cigarette ... For some unknown reason I started smoking again.”^{100(p. 72)}

2. Being under stress

Women continued to smoke during pregnancy due to various sources of social stress, such as financial and relationship problems. Pregnancy and having a baby were additional sources of stress. Smoking was used as a coping mechanism. As with tobacco dependency, stress was commonly reported as a reason for continued smoking.

“...it’s mostly stress at home too ‘cause we’re having problems with housing. We can’t get our own place and like peoples being, a lot of people have been applying for houses and some of them up, have been trying for so many years and every family has different situations and that’s not how the housing, ah, association is looking at it...like anyways just so stressed, stressed out about not having our own space and our own place, like our own rules right so I think it’s more stress...ah, there’s 5 of us, two bedrooms and another one coming, one on the way.”^{101(p.117-118)}

“Well being a single parent and taking care of all three boys, um, I don’t like to make excuses though but, ah, sometimes it’s just really hard to try and balance, um, to be a mother and, ah, a person....you know, I don’t know what else, just ah, the father and I have some real issue to deal with.”^{101(p. 117)}

“Stops me from worrying about things.”^{97(p. 25)}

3. Living in a smoking environment

Smoking was common within pregnant Indigenous women’s communities and among their partners, family members, and friends. The ubiquitous exposure to smoking was an influencing factor in their desire to smoke and it made quitting difficult.

“I find it difficult to quit and everybody else that I’m usually around smoke too, so seeing them puff on a cigarette makes me want to puff on a cigarette.”^{101(p. 119)}

“I think it would be harder to quit because I got a lot of friends who smoke cigarettes and my parent smoke cigarettes and my boyfriend and my brother.”^{101(p. 119)}

4. Lacking social support for quitting

Women who smoked during pregnancy lacked support within their social networks for quitting. Although some of the women reported having a friend or friends who would help them quit smoking or having partners and family members who told them that they should not smoke during pregnancy or that they should stop smoking for the baby’s health, such advice was viewed as unhelpful in light of continued smoking by members of their social network. Indeed, women who had smoked during pregnancy thought that pregnant women who smoke would be best helped by their partners, family members, and friends if those persons did not smoke. That perspective is consistent with some women’s reports that they did not have anyone in their social network who could help them to quit smoking because “they’re all smokers.”^{97(p. 28)}

... “like even my partner, he’s like, we should quit babe, it’s not good for our babies and rahdy rah, and it’s still not enough to make me quit”.^{95(p. 59)}

“He’s actually a big part of why I still smoke and I’m not going to blame him, but he does, he thinks he smokes less than me, but he actually smokes a lot more than me. And when we have, or when I’ve tried to cut down it’s been really hard because you see him

go out for a cigarette. I would try to do it together and um he thinks it's a game who's going to crack first. So it usually doesn't last very long, and I find that even when we trying to give up um, he will um like he'll cut down but he'll go behind my back and have a sneaky cigarette."^{95(p. 60)}

"...even though she smokes she doesn't like me smoking."^{97(p. 27)}

5. Rejecting or not knowing the facts about smoking harms

Women rejected or did not know the facts about smoking harms. For example, women discounted the harm to the unborn child on the basis of having prior experience with smoking during pregnancy and not having problems or of knowing others who smoked during pregnancy without having problems. Such misperception was used to rationalize continued smoking during pregnancy.

"They (the health professionals) just said that you know it makes baby small and that, but my babies were healthy you know, nothing was wrong with them."^{105(p. 2382-2383)}

"I don't think smoking has any defects on their learning or on their brain or anything like that, what damage we don't know, I mean, what can it do to a baby really?"^{95(p. 56)}

6. Being unreceptive to antismoking messages

Women were unreceptive to antismoking messages in that they did not want to receive advice about quitting smoking or were not interested in anti-smoking material.

... "it's like oh God shut up, we were just talking about this last week."^{95(p. 63)}

"It got me angry. I was like, it's my body, I should be able to."^{95(p. 51)}

... "when they first come out I didn't like them, especially the baby one, but now I don't really, I just don't notice the pictures anymore."^{95(p. 63-64)}

7. Having nothing to do

Women had little to occupy themselves in their communities and were bored; hence, smoking was something for them to do.

"There is nothing to do in my home town."^{101(p. 118)}

"Sitting at home being pregnant it's really yuk. It's really stink. There's nothing else to do and they can't go out because they're big and fat. I spoke to a lot of other friends: can't go and look for work because they're pregnant. Can't go out 'cos feel fat and ugly. If I kept myself occupied I wouldn't smoke so much."^{98(p. 68)}

Synthesized finding IV

Indigenous women who smoke during pregnancy need prominently available and easily accessible health information, interventions, and programs for smoking cessation; ongoing support to stay quit; and helpful and understanding health care providers.

Synthesized finding IV was derived from 27 research findings grouped into 3 categories:

1. Prominently available and easily accessible health information, interventions, and programs for smoking cessation

Women did not know whether smoking cessation programs were available to them or how to access any such programs; some thought that no formal smoking cessation support was available to them in their communities. Women indicated that there needed to be more information available on how to quit smoking, easy access to cessation help, exposure to nicotine replace therapy (NRT) and NRT options, and financially affordable NRT products. Hence, Indigenous women who smoke during pregnancy need to know about available smoking cessation health information, interventions, and programs and have easy access to resources and programs that facilitate smoking cessation.

“Because I wouldn’t have known about them if not set up at the clinic I go to because they weren’t there with other children. It should be offered to every pregnant woman – that there are services available. Make it more aware that there are services out there, more than Quitline. One on one meetings in person and maybe – I didn’t know there are subsidised patches and gum.”^{98(p. 67)}

“Yes it does (make it harder to quit at home) ah ‘cause you, you would have to try and quit by yourself without anybody helping you.”^{101(p. 121)}

“There’s people that want to give up and they have to, they will have to pay for it before and that’s what stopped them.”^{94(p. 19)}

2. Ongoing support to stay quit

Women thought there needed to be continuing support in the form of services, encouragement, or motivational feedback to assist women who quit smoking to stay quit; for instance, women suggested that a quitline, support group, or buddy system would be helpful. Hence, because of the potential for relapse, Indigenous women need ongoing support to stay quit.

“A lot of people are on the internet now, like I don’t go anywhere unless I have to... maybe internet even SMS... they can sign up for free SMS... if there was something like that with...motivational little quotes... Maybe a little reward you know like... AA you get a 30 day tick, something like that... I don’t know maybe even groups... for smokers, like you know they have alcoholics anonymous. Say like ‘oh I feel like having a smoke, you know do you want to come over and we’ll go for a walk’... my father was actually... did do a course last year... he passed away a couple of weeks ago but... he wanted to give

up smoking, that's what he was working towards so I think there needs to be more... support groups for people who are thinking about giving up smoking and who have given up smoking... ”94(p. 16)

“The drinking just stopped like that. That was easy. But smoking was still really hard. ... how did you get through that? I don't know. ...I eat. ...It's just swapping one addiction for another isn't it? You just ate. I don't know. It wasn't hard though. ...As soon as I found out I was hapū I just stopped. Drinking and smoking. That was the end of it. And then, I was all good right up until I finished breastfeeding.”100(p. 66)

3. Helpful and understanding health care providers

Some women had positive experiences with their health care providers, indicating that the information and support they received were helpful. Other women received little advice and found that their needs for information were not met. Many women who had been advised to quit smoking were not influenced by the advice. Women indicated that health care providers needed to be more supportive and less judgmental and to provide encouragement. Hence, women who smoke during pregnancy need health care providers who offer helpful assistance for smoking cessation and who are understanding, such that they are nonjudgmental and encouraging and make women feel comfortable when smoking is being addressed.

... “you're given the stuff and you've got to do it on your own.”98(p. 66)

... “they've got to understand where the smoker's coming from.”98(p. 67)

“The way she put it across was really kind and thoughtful, not judgmental ... and some of the things she said made me think a lot about smoking and drinking.”99(p. 1215)

... “every midwife should encourage women who are pregnant that the effects of what, what it might do to the baby, and every time they see them they should perhaps encourage them a bit.”95(p. 63)

Synthesized finding V

Indigenous women who smoke during pregnancy have varied preferences for smoking cessation initiatives.

Synthesized finding V was derived from 15 research findings grouped into 2 categories:

1. Views on health messages and methods to facilitate smoking cessation

Women had different views on types of health messages and methods to facilitate smoking cessation. Some women thought that health messages should emphasize the facts about the damage smoking causes and be realistic or graphic; other women thought health effects advertisements were not effective. Likewise, phone cessation services (e.g., a telephone quitline) were perceived positively (someone to call would be

helpful) or perceived negatively (impersonal). Some women thought that smoking cessation support should be culturally grounded; other women thought that culturally appropriate resources were not needed as the same messages could benefit all people.

... “more advertising on the cigarette pack itself for pregnant women - have a graphic picture.”^{98(p. 67)}

... “don’t just have a warning notice on packets. It doesn’t work”.⁹⁸⁽⁶⁷⁾

“I don’t even take any notice of their stupid ads.”^{98(p. 68)}

... “kaupapa Māori.”^{98(p. 67)}

“White or black sort of thing it doesn’t matter, smoking don’t discriminate who it kills and all that. Everyone can benefit.”^{94(p. 12)}

2. Suggestions for smoking cessation resources and programs

Women had various suggestions for resources and programs they thought would support smoking cessation. Those ranged from individual-focused resources (e.g., a website for convenient access to wide information) to group-based programs (e.g., support group for group activities and help from others) to a comprehensive program (e.g., a holistic program with advice on and support for associated health needs, such as nutritious eating and physical activity).

“I think a website is a great idea all different links to everything... you know when you do a course and you feel obligated to go?... could it be something where you’re not obligated, you can just show up if you feel like it... obligation that’s stressful see, obligation or responsibility, that’s what turns people to smoking (laughter).”^{94(p. 16)}

... “the sort of thing where you get a lot of support and help from other people.”^{98(p. 68)}

“... also the hard thing with giving up smoking is eating... I’ve always been a big girl... I’m an emotional eater so if I was to give up smoking I would just be eating twice as much as I do now...”⁹⁴⁽¹⁶⁾

Table 2: Synthesized findings

Findings	Categories	Synthesized findings
For some women, stopping smoking when pregnant was easy. (U)	Being pregnant is a motivator to quit, try to quit, or cut down on smoking	<i>1. Being pregnant is a motivator for Indigenous women to quit, try to quit, or cut down on</i>
Reasons for quitting - Another group noted that pregnancy came up for women more. (C)		
Pregnancy was cited as a quit method because of the frequency with which it had caused women to stop smoking. (U)		
Most of these young women seemed to be aware of the negative effects of smoking during pregnancy and said that before they were pregnant they		

smoked cigarettes but once they discovered they were pregnant they stopped smoking, tried to stop or reduced the number of cigarettes they smoked. (U)		<i>smoking, mainly because they want to protect their children from the harmful effects of maternal smoking during pregnancy but also because of biological and environmental deterrents to smoking during pregnancy.</i>	
Women focused on information that reinforced their decision [to not smoke]. For example, losing her first baby was a constant reminder for Leanne of what can happen and that was her one reason to not restart. (U)	Quitting smoking for baby's health		
She was able to quit when she became pregnant, but only until after her daughter was born. By the time she was 19, Joshelina was smoking 3–4 packs of cigarettes a day when she became pregnant with her second child. (C)			
Cold turkey was the method of choice for some as their baby's health became more important than smoking. (U)			
Several mothers made the decision to quit cold turkey because they were pregnant, indicating that the decision was made for the health of their baby. (U)			
Reducing the amount that was smoked was triggered by two main factors. Morning sickness was mentioned by five women. (U)	Experiencing biological deterrents to smoking during pregnancy		
One of the reasons it was so easy for some women to quit when pregnant was that they felt sick and couldn't smoke due to morning sickness. (C)			
Changes in taste and smell of primary and second-hand smoke shortly after they became pregnant. Women described their experiences of losing their taste for cigarettes, with most making a direct attribution of the taste and smell changes to being pregnant. (U)			
Four women who were admitted to hospital for pregnancy complications or to be induced remembered how they had been unable to smoke at all, or had smoked less. Reasons included being physically unable to get to the smoking area, not wanting to smoke in such a public place and feeling too ill. (U)	Experiencing environmental deterrents to smoking during pregnancy		
Two women thought that social pressure would help motivate pregnant women to give up. (U)			
Awareness of the risks related to smoking during pregnancy - Prematurity was mentioned less frequently than low birthweight as attributed to smoking. (U)	Knowing the health risks to the child and that one should not smoke during pregnancy	<i>II. Knowing the health risks to the child and that one should not smoke during pregnancy, feeling emotionally troubled about one's smoking while pregnant, or acknowledging that smoking is not a personally desirable behavior may not be sufficient impetus for pregnant Indigenous women to quit smoking.</i>	
Leanne and JC had both lost babies prior to birth and had to give birth naturally to them. Neither had been given a medical reason for their baby's death, but both attributed smoking as a causal factor. (U)			
Women also spoke of past pregnancies and their older children who had experienced health complications that the women had connected to smoking. (U)			
Awareness of the risks related to smoking during pregnancy - Asthma and breathing related problems in children were other effects of smoking during pregnancy most frequently mentioned. In several cases, mothers attributed their child's asthma directly to their own smoking during pregnancy. (U)			
Most women identified that they understood there were health risks to their fetuses. All were aware that the baby is "smoking" every time they do, but this was not sufficient motivation for them to quit. (U)			
For those who have had previous pregnancies, when asked about their previous smoking behaviors, all of them stated they smoked with their previous pregnancies. Seven women stated that their other children had respiratory illnesses. (U)			
Not being able to stop smoking when pregnant created cognitive dissonance that some participants coped with by becoming quite dismissive of this as a reason. For example, one woman said despite knowing she should stop for pregnancy, she didn't. (C)			
But, another young woman, speaking from experience, said despite saying she would stop smoking for pregnancy, she did not. (C)			
When talking about smoking during pregnancy, 14 of the 15 women reported guilt or other negative emotional responses. (U)			Feeling emotionally troubled because of smoking while pregnant
To avoid being judged or responded to critically, women hid their smoking or carefully chose who they would talk to about it. (U)			
Six women who smoked at some point in their pregnancy could remember when they had felt judged or negatively assessed by people in public, friends or			

family. (U)		
Some of the women expressed feelings of guilt as they felt they could not stop smoking due to their self-reported addiction to nicotine. (U)		
Described how much they hated or disliked smoking; in particular they mentioned the smell, and that it was a disgusting habit. Stacey, who hadn't thought about stopping, admitted that . . . (C)	Acknowledging that smoking is not a personally desirable behavior	
Participants cited multiple reasons motivating them to quit smoking . . . Reasons for contemplating quitting were for . . . own health. Several previous quit attempts had been "for my health." (U)		
Many of the others who had continued to smoke during pregnancy mentioned how hard they would find it to quit. (C)	Experiencing smoking dependency	<i>III. For Indigenous women, quitting smoking during pregnancy and staying quit may be impeded by such barriers as experiencing smoking dependency, being under stress, living in a smoking environment, lacking social support for quitting, rejecting or not knowing the facts about smoking harms, being unreceptive to anti-smoking messages, and having nothing to do.</i>
Women who continued to smoke were generally reluctant to pass any kind of judgement on another woman's behaviour whilst pregnant. (C)		
All who commented on this indicated that it was extremely difficult to stop smoking entirely and that they struggled to reduce the number of cigarettes they smoked in a day. (U)		
Seven women spoke of the addictive qualities of smoking. . . . It was also Stacey who described the only way she would be able to quit ... (C)		
Of the reasons given for smoking 50% of participants said they smoked because of habit. (U)		
Joshelina encourages others to have faith in their decision. (C)		
One woman, got a craving 2 weeks before birth and started then. (U)		
Quitting for pregnancy was also seen as a temporary quit, like a reluctant unintended and therefore not real quit attempt, because women just return to smoking as soon after having baby as they can. (C)		
Many women who stopped smoking unintentionally because of morning sickness in pregnancy or intentionally for pregnancy, started again as soon after they'd had the child, or stopped breastfeeding. (U)		
Problems with partners and ex-partners . . . were cited as reasons for relapse. One participant had multiple problems: she felt alone with no adult company, having moved away from her hometown and whanau. She was pregnant and her partner was unemployed so they had limited money, which he was spending going out drinking and smoking. They began arguing . . . (U)	Being under stress	
The second most common reason for smoking was due to stress. (U)		
General stress was cited, as was stressful life events, like having a baby. (U)		
All the women identified that smoking was used as a coping mechanism as it helped them temporarily relieve their anxiety. When asked if they could see themselves doing something else to help alleviate their stress, the mere thought of not smoking was enough to provoke an anxious response. Increased marijuana use was often cited as an alternative to reduced tobacco use to help control their anxiety. (C)		
Stress and addiction to nicotine were the most commonly reported reasons why smoking continued during pregnancy. (C)		
All women reported stress as the main reason for their continued smoking throughout their pregnancy. . . . three women described stressful life circumstances impeding their ability to quit smoking including financial situations, housing instability, troubled partner relationships and single parenthood. (U)		
All women . . . who were not originally from Iqaluit and staying at the boarding home stated that they increased cigarette smoking since arriving in Iqaluit to await the delivery of their babies, some as much as 2–3 times their regular daily cigarette consumption. Reasons for this increase in cigarette consumption at the boarding home included partner instability/troubled relationships and the stress of leaving their children behind in their communities as the women are typically sent to Iqaluit alone to give birth, and usually cannot bring their children with them. (C)		
Coping with study and trying to quit, as want to be seen to be doing the right		

thing, presented its own set of challenges. (U)		
Some of the women felt pregnancy made them smoke even more because it increased boredom or stress. (C)		
Smoking at work was easy (U)	Living in a smoking environment	
Even participants who worked or were students at schools, an environment designated smokefree under legislation, still smoked while there. (U)		
The social aspect of smoking was the most prominent overarching theme as a barrier to smoking cessation. Most women have smoking partners, friends or family members of which they are exposed to everyday. (U)		
Many women identified that it would be difficult to resist smoking if they saw their friends or family go out for a cigarette, and most would be surrounded by others smoking on a daily basis. (U)		
Seeing other women smoking often increased their desire to smoke. (U)		
Having smokefree whanau - Six women said it helps to have smokefree environments (U)		
Change government policy – Several women suggested a ‘prohibition against tobacco’. (U)		
None of these women’s partners or flatmates made attempts to quit and only some made small alterations to their smoking such as smoking away from them. (U)		Lacking social support for quitting
In contrast, about eight women didn’t think they had anyone in their whanau or social circle who could support them to quit . . . (U)		
The women’s mothers were the next main group to advise cutting down or stopping smoking (22%). (C)		
19 women (32%) said their partner wanted them to stop smoking. (U)		
Three women spoke about how their partners would tell them they should stop smoking for the health of the baby. (U)		
Partners were the most frequently named support person. Some women’s partners . . . (U)		
Support to quit - About Six participants had a friend or friends who would support them. (U)		
Having smokefree whanau – Twelve women thought pregnant women would be helped to change their smoking if their partner, family or friends didn’t smoke. (U)		
Quitting to have a healthy pregnancy or to protect the unborn child from risks to health was rejected by some participants who did not believe smoking caused harm, either because that had been their experience or they had poor health literacy and didn’t know. (C)	Rejecting or not knowing the facts about the harms of smoking	
Despite women talking about negative impacts on health, they were uncertain of the specific risks. (C)		
Stacey talked about how she was not too concerned about her baby being born with breathing difficulties. (U)		
Previous experiences of their own or another’s pregnancy were used to illustrate that smoking perhaps wasn’t as concerning as it is purported to be. (U)		
Attitudes towards smoking during pregnancy - No need to quit completely if they cut down . . . Was used to rationalize continued smoking. (U)		
Rationales discounting the impact of smoking during pregnancy – Denial. (U)		
Attitudes towards smoking during pregnancy - Of concern, 33% agreed that they may as well keep smoking themselves as they were exposed to so much smoke from others. (U)		
References to babies turning out ‘normal’ despite smoking during pregnancy were common. (U)		
Three women who didn’t want to be spoken to about cessation or smoking. . . . Stacey reported having a “primo” relationship with her midwife yet the topic of smoking was one that was never received well. (U)		Being unreceptive to anti-smoking messages
JC recalled one time her mother had been having ‘digs’ at her about smoking. (C)		

Cessation literature was also overlooked by some women (U)		
Leanne spoke of her different awareness of anti-smoking literature comparing her experiences in her two pregnancies (C)		
Having something else to do – Ten participants thought pregnant women would be helped to quit if they had something to occupy them. . . (U)	Having nothing to do	
Boredom . . . many women claiming there is nothing to do in their communities. Cigarettes often presented the only “break” women had in their day, and gave them something to do when they experienced boredom. (U)		
Health Provider Support – A few of the women were positive about midwives and cessation workers visiting women in their home . . . (U)	Prominently available and easily accessible health information, interventions, and programs for smoking cessation	<i>IV. Indigenous women who smoke during pregnancy need prominently available and easily accessible health information, interventions, and programs for smoking cessation; ongoing support to stay quit; and helpful and understanding health care providers.</i>
Health education resources – Four women said there needed to be more advertising “about the services for pregnant women”. (U)		
Health education resources - Six women said there needed to be more information on how to stop smoking. (U)		
When asked if the women knew where they could go for help or support to quit smoking, most of the women (n 1/4 12) stated that “they did not know of any existing programs or did not know where to go.” Five suggested going to the local nursing station to seek help. (C)		
Most women identified that their addiction to nicotine would pose a problem, but a “pill” or patch to help curb the cravings would help them quit smoking. (C)		
Nicotine replacement therapy - Fourteen women suggested nicotine substitutes or replacement. (C)		
One client had success in giving up using the microtabs given to her by the midwife after seeing the resource. She had seen and tried NRT in the past, but the midwife gave her samples including the inhaler and microtabs, which she had not used before. (U)		
Clients were very open to try the free samples on offer. All clients either went on to purchase their own or had doctors’ appointments booked to arrange NRT. (U)		
One client has made an appointment with her GP to arrange NRT to help her quit. This was her first time she had really been shown or talked to about NRT. (C)		
Clients reported that learning about the available NRT options motivated them to try it. (U)		
Educating workers in regards to NRT has been a very important step to encourage clients to use NRT when having a quit attempt. It was noted by one client that it was great to see what your options were because some Aboriginal people get embarrassed to ask. (U)		
Most women felt that if they wanted to quit smoking in their home community, they would be left on their own to do it, without any formal support. But as Genevieve noted, this would make it much harder. (U)		
Often when a smoker is faced with the choice of buying cigarettes or NRT they will choose the cigarettes. (U)		
The clients thought that all NRT products should be made cheaper or free and available on PBS and that while NRT is not on PBS it would be good to access starter kits of NRT so that they are free to try before they buy and see what will work best for them instead of going without their cigarettes to achieve this. (C)		
A recurring theme was that more support was needed for Aboriginal people who felt that once they quit there was no ongoing support to stay quit. Suggestions by one client to combat this were to have a support line, much like the Quitline, just for Aboriginal people (client did not explain why), motivational SMS texts that you could sign up for, and support groups for quitters similar to Alcoholics Anonymous, where you would have sponsors who you could ring when and if you were feeling particularly vulnerable. (C)	Ongoing support to stay quit	
A number of female participants gave up cold turkey when they fell pregnant and found themselves replacing smoking with “substitute eating” to		

compensate but without any cessation products or services to support them, they returned to smoking shortly after having baby or finishing breastfeeding. (C)		
Joshelina's experience taught her many lessons that might help other pregnant Native Americans. (C)		
Health Provider Support – Several women talked about the need for support people to be more understanding. (U)	Helpful and understanding health care providers	
Health Provider Support – Support people needed to be less judgemental . . . (C)		
Joshelina initially found support from her health care provider at the Ute Mountain Ute Tribal Health Clinic. The tobacco prevention specialist recognized her commitment to quitting the abuse of tobacco. While Joshelina was not sure about her ability to quit smoking cigarettes, the clinic staff . . . (C)		
Some women who continued to smoke also had positive experiences [with the information or support they received]. (U)		
All participants thought the Aunty giving support and the information that she gave was good and the way “she explained it” helped. (U)		
Eight women talked about how the advice [from their midwife], support or information had not matched their needs. Five women wanting advice were offered very little or nothing at all . . . Leanne, who described herself as not having any knowledge around the risks to the baby in her first pregnancy, reported that she was simply told “it’s not good for the baby” once or twice. (U)		
The Aunties were described as supportive, nice and non- judgmental which helped the participants to feel comfort- able. (U)		
Five women felt the information or support they received suited them. (U)		
Health Provider Support - The majority of women (82%) had been advised to stop smoking, most commonly by a midwife (63%). However, only 21% felt influenced by the advice. (C)		
Supportive programmes – Eight women thought that women needed to be motivated to quit ‘for yourself’ and supported with ‘encouragement’. (C)		
Two women were positive about phone services . . . (U)		Views on health messages and methods to facilitate smoking cessation
One woman, however, found Quitline “too impersonal” (U)		
Health education resources – A few women spoke of the warnings on cigarette packets. (U)		
Mass media support to quit - They wanted more advertisements that ‘deliver the facts’, ‘real stink ads . . . about the effects of smoking, ‘those disgusting ads’. (C)		
Mass media support to quit – Nine women said that ‘some people would do well with the ads on TV’ and there needed to be ‘more in the media,’ ‘more ads about the damage it does’. (U)		
Mass media support to quit – The Quitline ‘health effects’ advertisements were not seen to be effective. (U)		
Fourteen women (23%) thought motivation to quit would be helped by more and better provision of advice and information on the “effects and after effects” on the baby. (U)		
Health Provider Support – A few women thought it would be helpful to work with a . . . service grounded in a Maori world view and operated in accordance with Maori cultural protocols. (U)		
Three clients commented that they did not see the need for culturally appropriate tobacco resources. (C)		
Health education resources – Several women had suggestions for new resources or suggestions on how to improve the utilisation and delivery of existing resources. (C)	Suggestions for smoking cessation resources and programs	
Another suggestion was for a website that Aboriginal people could access without the stress of having to turn up somewhere, with the website you can		

log on any time it suits you. (U)		
Supportive Programmes – Eight women thought ‘there should be a group’. (U)		
Supportive Programmes - A couple of women thought they needed a ‘residential detox’ . . . (C)		
The same client also discussed the need for a holistic approach, that you need advice on healthy eating and physical activity whilst giving up. (C)		
Most wanted more programs like “moms and tots” or group activities to get them out of the house. There was a lot of emphasis on fresh air and outdoors (walking) to help them remain smoke free. (U)		

U, unequivocal; C, credible.

Discussion

The purpose of conducting this systematic review was to synthesize the best available evidence about the experience and cessation needs of Indigenous women who smoked during pregnancy. A search of the literature produced 13 studies that met the inclusion criteria. The studies involved Indigenous women from 4 countries, Canada, the United States, Australia, and New Zealand, and yielded qualitative descriptive data through various qualitative and mixed method designs. Despite variable methodological quality among the 13 studies, with 7 studies achieving scores of 50% or less and 6 studies achieving scores of 70% or more on the JBI criteria for critical appraisal, the decision was made to include all 13 studies in this review. That decision was based on several carefully deliberated considerations, especially that the studies had relevant findings, supported by participant voice, and together would provide increased understanding about this important public health concern of smoking during pregnancy among Indigenous women.

The 13 studies resulted in 116 unequivocal or credible research findings. The research findings were grouped into 19 categories, which were aggregated into 5 synthesized findings. Taken together the synthesized findings reveal that for some Indigenous women pregnancy was a motivator to quit, try to quit, or cut down on smoking and it was a motivator mainly because the women wanted to protect their children from the harmful effects of maternal smoking during pregnancy. It was a motivator also because of biological deterrents to smoking during pregnancy, such as morning sickness and altered taste and smell for cigarettes, and environmental deterrents to smoking during pregnancy, specifically perceived social pressure and environmental restriction on smoking. However, as indicated by continued smoking during pregnancy by some Indigenous women, such factors may not provide sufficient impetus for quitting. Indeed, Indigenous women continued to smoke during pregnancy despite knowing the health risks to the child and that one should not smoke during pregnancy; feeling emotionally troubled, including experiencing guilt and feeling judged, because of smoking while pregnant; or acknowledging that smoking is not a personally desirable behaviour because of negative attributes, such as an unappealing smell and adverse effects on their health.

For Indigenous women, quitting smoking during pregnancy and staying quit was impeded by such barriers as experiencing smoking dependency, being under stress, living in a smoking

environment, lacking social support for quitting, rejecting or not knowing the facts about smoking harms, being unreceptive to antismoking messages, and having nothing to do. The women's experiences with smoking during pregnancy indicated several needs: prominently available and easily accessible health information, interventions, and programs for smoking cessation; ongoing support to stay quit; and helpful and understanding health care providers. The women had varied preferences for smoking cessation initiatives. In particular, some women thought that facts about the health effects of smoking should be emphasized and others thought that such messaging is ineffective for smoking cessation. Similarly, there were differences of opinion as to whether smoking cessation support should be culturally specific. Suggestions offered for resources and programs to facilitate smoking cessation varied from individual-based (e.g., a website) to group-based (e.g., support group) to a comprehensive method (i.e., holistic approach).

These review findings are consistent with findings from qualitative research about smoking during pregnancy conducted on other women (i.e., White or combined ethnic samples). Women in those studies reported quitting, cutting down, or wanting to quit smoking during pregnancy because of the health risks to their unborn children,^{59,82,106-108} social pressure,^{81,108,109} or negative biologic effects of smoking during pregnancy (e.g., feeling sick from smoking).^{81,82,106,109} Conversely, women reported continuing to smoke during pregnancy despite knowing the health risks and feeling upset, especially guilty or shameful, because of the potential harm to their unborn children.^{58,59,81,106,110,111} There were several barriers to quitting for those women: being tobacco dependent;^{82,108,111} experiencing stress (e.g., relationship problems, financial or job insecurity, everyday worries, lack of social support) and using smoking as a coping mechanism;^{57,81,82,108,110-112} being exposed to prevalent smoking by others, especially partners, family members, and friends;^{81,82,108,109,111-113} not receiving supportive help and encouragement to quit from partners, family members, and friends;^{81,111,113} refuting or discounting the facts about smoking harms or rationalizing continued smoking on the basis of personal experience or hearsay that indicate lack of harmful effects in pregnancy;^{57-59,81,108,110-112} and feeling bored.^{108,112} Women also indicated being unaware of or lacking access to smoking cessation information, advice, or programs^{108,112,114} or having encountered unhelpful or insensitive health care providers.^{58,81,108,111} Health care providers have identified personal and organizational factors that might help explain such encounters. Mainly, health care providers indicated that they lacked sufficient knowledge and competence in smoking cessation interventions for pregnant women and lacked sufficient time and staffing resources for interventions.¹¹⁴⁻¹¹⁷ Thus, smoking cessation interventions were not given high priority among pregnant women's other needs.¹¹⁵ Women had preferences for smoking cessation measures and offered suggestions for what they thought would be helpful in supporting them to quit. Such suggestions included having health messages and graphic pictures with the hard facts about the harms to the baby, having a support person or health care provider for ongoing encouragement and assistance, being able to access pharmacological interventions (e.g., nicotine patch), and having activities to keep occupied and to keep one's mind off smoking.^{82,112,118} Of particular note is that preference for a cultural approach to smoking cessation initiatives has been noted by Indigenous peoples in other studies,¹¹⁹⁻¹²¹ although, the studies were not about pregnant women specifically.

Limitations of the review

The following limitations should be taken into account when considering the findings of this review:

1. It is not possible to determine the total number of participants of interest (Indigenous women who smoked during pregnancy) across the 13 studies; although, the number is at least 105.
2. The number of women represented in some of the findings from the studies is small and the number of findings in some categories is small; although, all categories have at least two findings as required by the JBI approach.
3. Great care was taken to include all studies with relevant findings and to extract all findings that had discernible voice for the participants of interest (i.e., Indigenous women who smoked during pregnancy), but because of mixed samples in some studies and consequent difficulty in distinguishing findings pertaining to the targeted participants, it is possible that findings were missed.
4. Only findings that were supported by participant voice were included in this review; hence, it is possible that there are other relevant, albeit unsupported, findings about the phenomena of interest.
5. The studies comprising the review are confined to 4 Western countries with select samples (e.g., a particular Indigenous people, such as the Inuit in Canada, or particular location or region within a country); thus, it cannot be assumed that the findings reflect the experiences of other Indigenous peoples.
6. The findings from the various studies are restricted in depth because of the qualitative descriptive nature of the research.
7. The studies in this review have variable methodological quality, with some studies appraised as being of low methodological quality.
8. The ConQual scores, which are derived from study methodological quality and credibility of the research findings, indicate that confidence is low to very low across the synthesized findings.

Conclusion

The research evidence concerning Indigenous women's experiences of smoking during pregnancy and their smoking cessation needs is limited by the relatively small number and narrow diversity of Indigenous peoples represented, weaknesses in study methods, the restricted quality of research findings (i.e. in terms of credibility, depth, number of women represented in specific findings, and few repetitions across studies for some research findings). Nonetheless, the research findings from among the 13 studies in this review were sufficient to form five synthesized findings, albeit confidence in the findings is low to very low.

Recommendations for practice

Although confidence in the synthesized findings from this review is constrained, there are a number of recommendations for health care provider practice and for health care and social policy that are inferred from the findings. The recommendations are consistent with expert opinion and recommendations about smoking cessation interventions for pregnant women^{73,79,122-124} and for Indigenous peoples,^{74,75} generally, as noted in the literature. Therefore, until more evidence is available to back recommendations that are specific for pregnant Indigenous women, the following recommendations may be implemented in the provision of smoking cessation interventions, support, and services for them. Each recommendation is assigned a grade in accordance with the JBI approach to grades of recommendation.¹²⁵ Given the limitations of the available evidence and low confidence scores for the synthesized findings, all recommendations are graded B, suggesting that they are to be accepted with discretion.

Recommendations for health care practice

1. It is recommended that health care providers take advantage of the “window of opportunity”,^{79(p.26)} whereby pregnancy might be a motivator to quit smoking for some women, and offer the best evidence-based smoking cessation interventions and support at every contact with pregnant Indigenous women. (Grade B)
2. It is recommended that health care providers have a complete understanding of the complexity of smoking during pregnancy, including its physiology, health outcomes for women and children, and women’s emotional responses and coping mechanisms, in order to provide informed and emotionally supportive smoking cessation interventions to pregnant Indigenous women, while at all times interacting in a respectful, nonjudgmental manner. (Grade B)
3. It is recommended that health care providers be aware of barriers to smoking cessation for pregnant Indigenous women and provide individualized interventions to mitigate barriers. This involves ensuring that women who are heavily dependent on tobacco receive optimal, evidence-based interventions and ongoing support; providing evidence-based health education to women about smoking and smoking cessation in pregnancy to dispel misunderstandings and misinformation; advocating on behalf of women for resources to address their socioeconomic stressors; providing health education to key members of women’s social networks about the importance of immediately eliminating exposure of pregnant women to members’ smoking and about helpful encouragement and support; and offering smoking cessation interventions to key members of women’s social networks who smoke and encouraging their participation. (Grade B)
4. It is recommended that health care providers inform pregnant Indigenous women who smoke of available health information resources, interventions and programs for smoking cessation, and encourage and assist them to access such help. (Grade B)
5. It is recommended that health care providers give ongoing support and encouragement, through regular follow-up, to pregnant Indigenous women who have quit smoking during their pregnancies in an effort to reduce the potential for their relapse. (Grade B)
6. It is recommended that health care providers take an individualized approach to

interventions for pregnant Indigenous women who smoke that suit women's personal preferences for smoking cessation resources, methods and programs. (Grade B)

7. It is recommended that health care providers use a holistic approach to smoking cessation interventions for pregnant Indigenous women that also address associated health needs, for example, the need for good nutrition, physical activity and social support. (Grade B)

Recommendations for policy

1. It is recommended that health care institutions ensure health care providers who work with pregnant Indigenous women who smoke are educationally prepared for competent practice in smoking cessation. (Grade B)
2. It is recommended that policy makers implement comprehensive well-resourced smoking cessation strategies for smoking in pregnancy among Indigenous women that address barriers to smoking cessation, varied needs in relation to smoking cessation, and varied preferences for smoking cessation initiatives. (Grade B)
3. It is recommended that policy makers promote the availability of smoking cessation resources and programs for pregnant Indigenous women by wide advertising through such means as public media and displays in community centres and health care settings. (Grade B)

Recommendations for research

The small body of research evidence concerning Indigenous women's experiences of smoking during pregnancy and their smoking cessation needs and deficiencies in the available studies and evidence give rise to a number of recommendations for future research:

1. It is recommended that in publications of qualitative research, authors provide full details about methods and methodology in accordance with the Consolidated Criteria for Reporting Qualitative Research (COREQ guidelines).¹²⁶
2. It is recommended that in studies of mixed samples, the sub-samples be fully described and distinguishing participant characteristics be assigned to participant quotations (e.g. pregnant or not pregnant, Indigenous or non-Indigenous) so that findings are discernible.
3. It is recommended that in future studies about smoking in pregnancy among Indigenous women, methodologies be employed to gather in-depth understanding to strengthen the evidence, for example, phenomenology to understand women's lived experience of smoking and quitting smoking during pregnancy, ethnography to understand the sociopolitical context of smoking and quitting smoking during pregnancy, and grounded theory to understand the process of quitting smoking during pregnancy and associated barriers and facilitators.
4. It is recommended that in addition to the Indigenous peoples represented in current research, future studies about smoking during pregnancy be carried out on other Indigenous peoples and in other countries.

5. It is recommended that research be carried out on key members of pregnant Indigenous women's social networks to learn about their understanding of smoking in pregnancy and their role in support.
6. It is recommended that research be carried out to further understand pregnant Indigenous women's needs in relation to smoking cessation and their preferences for smoking cessation initiatives, including the meaning of support and programs based in Indigenous culture and worldview.

Conflict of interest

The authors declare no conflicts of interest.

Acknowledgements

We would like to thank Dr. Christina Godfrey and the Queen's Collaboration for Health Care Quality: A JBI Centre of Excellence for providing ongoing consultation support and answering our many questions about the JBI systematic review process.

References

1. Joanna Briggs Institute. Summary of findings tables for Joanna Briggs Institute Systematic Reviews [Internet]. 2016 [cited 2017 Feb 13]. Available from: http://joannabriggs.org/assets/docs/sumari/Summary_of_Findings_Tables_for_Joanna_Briggs_Institute_Systematic_Reviews-V3.pdf
2. Ng M, Freeman MK, Fleming TD, Robinson M, Dwyer-Lindgren L, Thomson B, et al. Smoking prevalence and cigarette consumption in 187 countries, 1980-2012. *JAMA*. 2014;311(2):183- 92.
3. World Health Organization. WHO global report on trends in prevalence of tobacco smoking 2015 [Internet]. 2015 [cited 2017 Jan 8]. Available from: http://apps.who.int/iris/bitstream/10665/156262/1/9789241564922_eng.pdf?ua=1
4. World Health Organization. Tobacco fact sheet No 339 [Internet]. 2016 [cited 2017 Jan 8]. Available from: <http://www.who.int/mediacentre/factsheets/fs339/en/>
5. World Health Organization. WHO report on the global tobacco epidemic, 2015: raising taxes on tobacco [Internet]. 2015 [cited 2017 Jan 8]. Available from: http://apps.who.int/iris/bitstream/10665/178574/1/9789240694606_eng.pdf?ua=1&ua=1
6. Eriksen M, Mackay J, Schluger N, Gomeshtapeh FI, Drope J. The tobacco atlas [Internet]. 5th ed. Atlanta (GA): American Cancer Society; 2015 [cited 2017 Jan 8]. Available from: http://3pk43x313ggr4cy0lh3tctjh.wpengine.netdna-cdn.com/wp-content/uploads/2015/03/TA5_2015_WEB.pdf
7. World Health Organization. WHO framework convention on tobacco control [Internet]. 2003/2005 [cited 2017 Jan 8]. Available from: <http://apps.who.int/iris/bitstream/10665/42811/1/9241591013.pdf?ua=1>
8. New Zealand Ministry of Health. Annual update of key results 2015/16: New Zealand health survey [Internet]. Wellington, NZ: The Ministry; 2016 [cited 2017 Jan 6] Available from: <http://www.health.govt.nz/system/files/documents/publications/annual-update-key-results-2015-16-nzhs-dec16-v2.pdf>
9. van der Sterren A, Greenhalgh EM, Knoche D, Winstanley MH. Prevalence of tobacco use among Aboriginal and Torres Strait Islander people. In: Scollo MM and Winstanley MH, editors. Tobacco in Australia: facts and issues [Internet]. Melbourne: Cancer Council Victoria; 2016 [cited 2017 Jan 8]. Available from: <http://www.tobaccoinaustralia.org.au/chapter-8- apts/8-3-prevalence-of-tobacco-use-among-aboriginal-peo>

10. Health Canada. First Nations and Inuit component of the federal tobacco control strategy [Internet]. 2015 [cited 2017 Jan 8]. Available from:
<http://www.healthycanadians.gc.ca/publications/healthy-living-vie-saine/fni-tobacco-strat-2012-2017-pni-strat-tabagisme/alt/fni-tobacco-strat-2012-2017-pni-strat-tabagisme-eng.pdf>
11. Kelly-Scott K, Smith K. Aboriginal peoples: fact sheet for Canada [Internet]. Ottawa (ON): Statistics Canada; 2015 [cited 2017 Jan 10]. Available from:
<http://www.statcan.gc.ca/pub/89-656-x/89-656-x2015001-eng.pdf>
12. Jamal A, King BA, Neff LJ, Whitmill J, Babb SD, Graffunder CM. Current cigarette smoking among adults - United States, 2005-2015. *MMWR Morb Mortal Wkly Rep*. 2016;65(44):1205- 11.
13. Australian Bureau of Statistics. National Aboriginal and Torres Strait Islander survey 2014-15: health risk factors - smoking [Internet]. 2016 [cited 2017 Jan 8]. Available from:
<http://www.abs.gov.au/ausstats/abs@.nsf/Lookup/4714.0main+features122014-15>
14. Australian Bureau of Statistics. National health survey: first results, 2014-15: smoking [Internet]. 2016 [cited 2017 Jan 8]. Available from:
<http://www.abs.gov.au/ausstats/abs@.nsf/Lookup/by%20Subject/4364.0.55.001~2014-15~Main%20Features~Smoking~24>
15. World Health Organization. The top 10 causes of death: major causes of death [Internet]. 2017 [cited 2017 Jan 8]. Available from:
<http://www.who.int/mediacentre/factsheets/fs310/en/index2.html>
16. World Health Organization. Global status report on noncommunicable diseases 2014 [Internet]. 2014 [cited 2017 Jan 8]. Available from:
http://apps.who.int/iris/bitstream/10665/148114/1/9789241564854_eng.pdf
17. United States Department of Health and Human Services. The health consequences of smoking – 50 years of progress: a report of the Surgeon General [Internet]. Atlanta (GA): The Department; 2014 [cited 2017 Jan 9]. Available from:
<http://www.surgeongeneral.gov/library/reports/50-years-of-progress/full-report.pdf>
18. United States Department of Health and Human Services. The health consequences of smoking: a report of the Surgeon General [Internet]. Atlanta (GA): The Department; 2004 [cited 2017 Jan 9]. Available from:
http://www.cdc.gov/tobacco/data_statistics/sgr/2004/complete_report/index.htm
19. United States Department of Health and Human Services. How tobacco smoke causes disease: the biology and behavioral basis for smoking-attributable disease - a report of

the Surgeon General [Internet]. Atlanta (GA): The Department; 2010 [cited 2017 Jan 9]. Available from:

https://www.ncbi.nlm.nih.gov/books/NBK53017/pdf/Bookshelf_NBK53017.pdf

20. Liu Y, Rao K, Hu TW, Sun Q, Mao Z. Cigarette smoking and poverty in China. *Soc Sci Med*. 2006;63(11):2784-90.
21. John RM, Sung HY, Max WB, Ross H. Counting 15 million more poor in India, thanks to tobacco. *Tob Control*. 2011;20(5):349-52.
22. Pearce M. Smoking and social disadvantage – introduction. In: Scollo MM and Winstanley MH, editors. *Tobacco in Australia: facts and issues* [Internet]. Melbourne: Cancer Council Victoria; 2016 [cited 2017 Jan 13]. Available from: <http://www.tobaccoinaustralia.org.au/chapter-9- disadvantage/9-0-introduction>
23. American Cancer Society. *Tobacco: the true cost of smoking* [Internet]. 2015 [cited 2017 Jan 8]. Available from: <http://www.cancer.org/research/infographicgallery/tobacco-related- healthcare-costs>
24. Health and Social Care Information Centre. *Statistics on smoking: England, 2016* [Internet]. 2016 [cited 2016 Jan 12]. Available from: <http://content.digital.nhs.uk/catalogue/PUB20781/stat-smok-eng-2016-rep.pdf>
25. Syme C, Abrahamowicz M, Mahboubi A, Leonard GT, Perron M, Richer L, et al. Prenatal exposure to maternal cigarette smoking and accumulation of intra-abdominal fat during adolescence. *Obesity (Silver Spring)*. 2010;18(5):1021-5.
26. United States Department of Health and Human Services. *Preventing tobacco use among youth and young adults: a report of the Surgeon General* [Internet]. Atlanta (GA): The Department; 2012 [cited 2014 Sep 16]. Available from: <http://www.surgeongeneral.gov/library/reports/preventing-youth-tobacco-use/full-report.pdf>
27. Oken E, Levitan EB, Gillman MW. Maternal smoking during pregnancy and child overweight: systematic review and meta-analysis. *Int J Obes (Lond)*. 2008;32(2):201-10.
28. Ino T. Maternal smoking during pregnancy and offspring obesity: meta-analysis. *Pediatr Int*. 2010;52(1):94-9.
29. Behl M, Rao D, Aagaard K, Davidson TL, Levin ED, Slotkin TA, et al. Evaluation of the association between maternal smoking, childhood obesity, and metabolic disorders: a national toxicology program workshop review. *Environ Health Perspect*. 2013;121(2):170-80.

30. Timmermans SH, Mommers M, Gubbels JS, Kremers SP, Stafleu A, Stehouwer CD, et al. Maternal smoking during pregnancy and childhood overweight and fat distribution: the KOALA Birth Cohort Study. *Pediatr Obes.* 2014;9(1):e14-25.
31. Public Health Agency of Canada. Smoking cessation during pregnancy and relapse after childbirth in Canada [Internet]. Ottawa (ON): The Agency; 2016 [cited 2017 Jan 10]. Available from: <http://www.healthycanadians.gc.ca/publications/healthy-living-vie-saine/pregnancy-smoking-cessation-grossesse-renoncement-tabac/alt/pregnancy-smoking-cessation-grossesse-renoncement-tabac-eng.pdf>
32. Centers for Disease Control and Prevention. Tobacco use and pregnancy [Internet]. 2016 [cited 2017 Jan 10]. Available from: <https://www.cdc.gov/reproductivehealth/maternalinfanthealth/tobaccousepregnancy/>
33. Health and Social Care Information Centre. Infant feeding survey 2010 [Internet]. London (UK): The Centre; 2012 [cited 2017 Jan 10]. Available from: <http://content.digital.nhs.uk/catalogue/PUB08694/Infant-Feeding-Survey-2010-Consolidated-Report.pdf>
34. New Zealand Ministry of Health. Report on maternity 2014 [Internet]. Wellington (NZ): The Ministry; 2015 [cited 2017 Jan 10]. Available from: <http://www.health.govt.nz/system/files/documents/publications/report-on-maternity-2014-dec15.pdf>
35. Rockhill KM, Tong VT, Farr SL, Robbins CL, D'Angelo DV, England LJ. Postpartum smoking relapse After quitting during pregnancy: Pregnancy Risk Assessment Monitoring System, 2000- 2011. *J Womens Health (Larchmt).* 2016;25(5):480-8.
36. Einarson A, Riordan S. Smoking in pregnancy and lactation: a review of risks and cessation strategies. *Eur J Clin Pharmacol.* 2009;65(4):325-30.
37. Mennella JA, Yourshaw LM, Morgan LK. Breastfeeding and smoking: short-term effects on infant feeding and sleep. *Pediatrics.* 2007;120(3):497-502.
38. Centers for Disease Control and Prevention. Should mothers who smoke breastfeed? [Internet]. 2009 [cited 2017 Jan 10]. Available from: <https://www.cdc.gov/breastfeeding/disease/tobacco.htm>
39. Liu J, Rosenberg KD, Sandoval AP. Breastfeeding duration and perinatal cigarette smoking in a population-based cohort. *Am J Public Health.* 2006;96(2):309-14.
40. Horta BL, Kramer MS, Platt RW. Maternal smoking and the risk of early weaning: a

meta- analysis. Am J Public Health. 2001;91(2):304-7.

41. Weiser TM, Lin M, Garikapaty V, Feyerharm RW, Bensyl DM, Zhu BP. Association of maternal smoking status with breastfeeding practices: Missouri, 2005. *Pediatrics*. 2009;124(6):1603-10.
42. Vio F, Salazar G, Infante C. Smoking during pregnancy and lactation and its effects on breast- milk volume. *Am J Clin Nutr*. 1991;54(6):1011-6.
43. Goldade K, Nichter M, Nichter M, Adrian S, Tesler L, Muramoto M. Breastfeeding and smoking among low-income women: results of a longitudinal qualitative study. *Birth*. 2008;35(3):230-40.
44. Statistics Team. Statistics on women's smoking status at time of delivery: England, quarter 2, July 2016 to September 2016 [Internet]. Surrey (UK): National Health Service; 2016 [cited 2017 Jan 10]. Available from: <http://content.digital.nhs.uk/catalogue/PUB22615/stat-wome-smok- time-deli-eng-q2-16-17-rep.pdf>
45. Child Trends Databank. Mothers who smoke while pregnant: indicators on children and youth [Internet]. 2016 [cited 2017 Jan 10]. Available from: http://www.childtrends.org/wp-content/uploads/2015/03/11_Mothers_Who_Smoke_While_Pregnant.pdf
46. Centers for Disease Control and Prevention. Prevalence of selected maternal and child health indicators – United States, all sites, pregnancy risk assessment monitoring system (PRAMS), 2012 and 2013 [Internet]. 2016 [cited 2017 Jan 10]. Available from: https://www.cdc.gov/prams/pramstat/pdfs/home/prams-all-sites_508tag.pdf
47. Better Outcomes Registry & Network (BORN) Ontario. Born & growing annual report 2012- 2014: two years of progress [Internet]. 2015 [cited 2017 Jan 10]. Available from: <http://www.bornontario.ca/assets/documents/specialreports/121187%20Final%20Web%20-%20English.pdf>
48. Morton SMB, Atatoa Carr PE, Grant CC, Berry SD, Marks EJ, Chen XM-H, Lee AC. Growing up in New Zealand: a longitudinal study of New Zealand children and their families. Vulnerability Report 1: exploring the definition of vulnerability for children in their first 1000 days [Internet]. Auckland (NZ): Growing up in NZ; 2014 [cited 2017 Jan 10]. Available from: <https://cdn.auckland.ac.nz/assets/growingup/research-findings-impact/report04.pdf>
49. New South Wales Government. Health stats NSW: smoking in pregnancy, NSW 1996- 2015 [Internet]. Canberra (AU): NSW Government; 2016 [cited 2017 Jan 10]. Available from:

http://www.healthstats.nsw.gov.au/Indicator/mab_smo_cat/mab_smo_cat?&topic=Smoking &topic1=topic_smoking&code=smo

50. Australian Institute of Health and Welfare. Australia's mothers and babies 2014 – in brief: perinatal statistics series no. 32 [Internet]. Canberra (AU): The Institute; 2016 Cat. no. PER 87. [cited 2017 Jan 10]. Available from: <http://www.aihw.gov.au/WorkArea/DownloadAsset.aspx?id=60129557657>
51. First Nations Information Governance Centre. First Nations regional health survey (RHS): phase 2 (2008/10) national report on adults, youth and children living in First Nations communities [Internet]. Ottawa (ON): The Centre; 2012 [cited 2014 Sep 14]. Available from: http://www.fnigc.ca/sites/default/files/First_Nations_Regional_Health_Survey_2008-10_National_Report.pdf
52. First Nations and Inuit Health Branch, Health Canada. Daily smoking during pregnancy (DPRGSMK), Inuit women aged 15-44 who are currently pregnant, Statistics Canada 2012 Aboriginal Peoples Survey [Internet]. Email message to Sandra Small 2014 May 13 [cited 2017 Jan 6].
53. Shipton D, Tappin DM, Vadiveloo T, Crossley JA, Aitken DA, Chalmers J. Reliability of self reported smoking status by pregnant women for estimating smoking prevalence: a retrospective, cross sectional study. *BMJ*. 2009;339:b4347.
54. Dietz PM, Homa D, England LJ, Burley K, Tong VT, Dube SR, et al. Estimates of nondisclosure of cigarette smoking among pregnant and nonpregnant women of reproductive age in the United States. *Am J Epidemiol*. 2011;173(3):355-9.
55. Gilligan C, Sanson-Fisher R, Eades S, Wenitong M, Panaretto K, D'Este C. Assessing the accuracy of self-reported smoking status and impact of passive smoke exposure among pregnant Aboriginal and Torres Strait Islander women using cotinine biochemical validation. *Drug Alcohol Rev*. 2010;29(1):35-40.
56. Flemming K, Graham H, Heirs M, Fox D, Sowden A. Smoking in pregnancy: a systematic review of qualitative research of women who commence pregnancy as smokers. *J Adv Nurs*. 2013;69(5):1023-36.
57. Bull L, Burke R, Walsh S, Whitehead E. Social attitudes towards smoking in pregnancy in East Surrey: a qualitative study of smokers, former smokers and non-smokers. *J Neonatal Nurs Assoc*. 2007;13(3):100-6.
58. Wigginton B, Lee C. A story of stigma: Australian women's accounts of smoking during pregnancy. *Crit Public Health*. 2013;23(4):466-81.

59. Naughton F, Eborall H, Sutton S. Dissonance and disengagement in pregnant smokers: a qualitative study. *J Smok Cessat.* 2013;8(01):24-32.
60. Thrift AP, Nancarrow H, Bauman AE. Maternal smoking during pregnancy among Aboriginal women in New South Wales is linked to social gradient. *Aust N Z J Public Health.* 2011;35(4):337-42.
61. Cui Y, Shoostari S, Forget EL, Clara I, Cheung KF. Smoking during pregnancy: findings from the 2009-2010 Canadian Community Health Survey. *PLoS One.* 2014;9(1):e84640.
62. Tong VT, Dietz PM, Morrow B, D'Angelo DV, Farr SL, Rockhill KM, et al. Trends in smoking before, during, and after pregnancy--Pregnancy Risk Assessment Monitoring System, United States, 40 sites, 2000-2010. *MMWR Surveill Summ.* 2013;62(6):1-19.
63. Page RL, Padilla YC, Hamilton ER. Psychosocial factors associated with patterns of smoking surrounding pregnancy in fragile families. *Matern Child Health J.* 2012;16(1):249-57.
64. Gould GS, Munn J, Watters T, McEwen A, Clough AR. Knowledge and views about maternal tobacco smoking and barriers for cessation in Aboriginal and Torres Strait Islanders: A systematic review and meta-ethnography. *Nicotine Tob Res.* 2013;15(5):863-74.
65. van der Sterren A, Greenhalgh EM, Knoche D, Winstanley MH. Aboriginal people and Torres Strait Islanders: Social disadvantage, health and smoking – an overview. In: Scollo MM and Winstanley MH, editors. *Tobacco in Australia: facts and issues* [Internet]. Melbourne: Cancer Council Victoria; 2016 [cited 2017 Jan 13]. Available from: <http://www.tobaccoinaustralia.org.au/chapter-8-aptsi/8-1-overview>
66. World Health Organization. The health of Indigenous peoples: fact sheet No 326 [Internet]. 2007 [cited 2017 Jan 10]. Available from: <http://www.who.int/mediacentre/factsheets/fs326/en/>
67. Centre for Epidemiology and Evidence. The health of Aboriginal people of NSW: report of the chief health officer [Internet]. Sydney (AU): NSW Ministry of Health; 2012 [cited 2017 Jan 15]. Available from: <http://www.health.nsw.gov.au/epidemiology/Publications/aboriginal-health-CHO-report.pdf>
68. Briggs VL, Lindorff KJ, Ivers RG. Aboriginal and Torres Strait Islander Australians and tobacco. *Tob Control.* 2003;12 Suppl 2:ii5-8.
69. Passey ME, Gale JT, Sanson-Fisher RW. "It's almost expected": rural Australian Aboriginal women's reflections on smoking initiation and maintenance: a qualitative

study. BMC Womens Health. 2011;11:55.

70. Scollo MM, Winstanley MH. History of tobacco use among Aboriginal peoples and Torres Strait Islanders. In: Scollo MM and Winstanley MH, editors. Tobacco in Australia: facts and issues [Internet]. Melbourne: Cancer Council Victoria; 2016 [cited 2017 Jan 16] Available from: <http://www.tobaccoinaustralia.org.au/chapter-8-apsi/8-2-history-of-tobacco-use-among-aboriginal-people>
71. Johnston V, Thomas DP. Smoking behaviours in a remote Australian Indigenous community: the influence of family and other factors. Soc Sci Med. 2008;67(11):1708-16.
72. BlueEye L, Rohweder C, McDougall J. Native American action plan – addressing tobacco abuse among pregnant and postpartum women [Internet]. Chapel Hill (NC): National Partnership to Help Pregnant Smokers Quit; 2008 [cited 2015 Jan 8]. Available from: <http://www.tobacco-cessation.org/PDFs/NativeAmericanActionPlan.pdf>
73. Borland T, Babayan A, Irfan S, Schwartz R. Exploring the adequacy of smoking cessation support for pregnant and postpartum women. BMC Public Health. 2013;13:472.
74. DiGiacomo M, Davidson PM, Abbott PA, Davison J, Moore L, Thompson SC. Smoking cessation in indigenous populations of Australia, New Zealand, Canada, and the United States: elements of effective interventions. Int J Environ Res Public Health. 2011;8(2):388-410.
75. van der Sterren A, Greenhalgh EM, Knoche D, Winstanley, MH. Tobacco action initiatives targeting Aboriginal peoples and Torres Straits Islanders. In: Scollo MM and Winstanley MH, editors. Tobacco in Australia: facts and issues [Internet]. Melbourne: Cancer Council Victoria; 2016; [cited 2017 Jan 13]. Available from: <http://www.tobaccoinaustralia.org.au/chapter-8-apsi/8-10-interventions-targeting-aboriginal-peoples-an>
76. Arndt LM, Caskey M, Fossum J, Schmitt N, Davis AR, Smith SS, et al. Menominee perspectives on commercial and sacred tobacco use. Am Indian Alsk Native Ment Health Res. 2013;20(3):1- 22.
77. Dias-Dame JL, Cesar JA. Disparities in prevalence of smoking and smoking cessation during pregnancy: a population-based study. Biomed Res Int. 2015;2015:345430.
78. Australian Institute of Health and Welfare. Australia's mothers and babies 2014: antenatal period smoking [Internet]. Canberra (AU): Australian Institute of Health and Welfare; 2016 [cited 2017 Jan 16]. Available from: http://analytics.aihw.gov.au/Viewer/VisualAnalyticsViewer_guest.jsp?reportPath=%2FAIHW%2FReleasedPublic%2FPerinatal%2FReports%2FNOV2016&reportName=Antenat

al%20period&reportViewOnly=true&viewerMode=modern&commentsEnabled=false&propertiesEnabled=false&appSwitcherDisabled=true

79. World Health Organization. WHO recommendations for the prevention and management of tobacco use and second-hand smoke exposure in pregnancy [Internet]. Geneva: World Health Organization; 2013 [cited 2014 Sep 22]. Available from:
http://apps.who.int/iris/bitstream/10665/94555/1/9789241506076_eng.pdf?ua=1
80. Slade P, Laxton-Kane M, Spiby H. Smoking in pregnancy: the role of the transtheoretical model and the mother's attachment to the fetus. *Addict Behav.* 2006;31(5):743-57.
81. Nichter M, Nichter M, Muramoto M, Adrian S, Goldade K, Tesler L, et al. Smoking among low- income pregnant women: an ethnographic analysis. *Health Educ Behav.* 2007;34(5):748-64.
82. Hauck Y, Ronchi F, Lourey B, Lewis L. Challenges and enablers to smoking cessation for young pregnant Australian women: a qualitative study. *Birth.* 2013;40(3):202-8.
83. Passey ME, Bryant J, Hall AE, Sanson-Fisher RW. How will we close the gap in smoking rates for pregnant Indigenous women? *Med J Aust.* 2013;199(1):39-41.
84. Greenhalgh EM, van der Sterren A, Knoche D, Winstanley MH. Morbidity and mortality caused by smoking among Aboriginal peoples and Torres Strait Islanders. In: Scollo MM and Winstanley MH, editors. *Tobacco in Australia: facts and issues* [Internet]. Melbourne: Cancer Council Victoria; 2016 [cited 2017 Jan 15]. Available from:
<http://www.tobaccoinaustralia.org.au/chapter-8-apsi/8-7-morbidity-and-mortality-caused-by-smoking-amon>
85. Glover M, Kira A, Cowie N, Wong R, Stephen J, Marriner K. Health consequences of tobacco use for Maori--cessation essential for reducing inequalities in health. *N Z Med J.* 2013;126(1379):60-73.
86. Small S, Porr C, Swab M, Murray C. The experience and cessation needs of Indigenous women who smoke during pregnancy: a systematic review of qualitative evidence protocol. *JBI Database System Rev Implement Rep.* 2015;13(4):51-64.
87. Graham H, Flemming K, Fox D, Heirs M, Sowden A. Cutting down: insights from qualitative studies of smoking in pregnancy. *Health Soc Care Community.* 2014;22(3):259-67.
88. Ingall G, Cropley M. Exploring the barriers of quitting smoking during pregnancy: a systematic review of qualitative studies. *Women Birth.* 2010;23(2):45-52.

89. Baxter S, Everson-Hock E, Messina J, Guillaume L, Burrows J, Goyder E. Factors relating to the uptake of interventions for smoking cessation among pregnant women: a systematic review and qualitative synthesis. *Nicotine Tob Res.* 2010;12(7):685-94.
90. United Nations Permanent Forum on Indigenous Issues. Indigenous peoples, Indigenous voices factsheet: who are Indigenous peoples? [Internet]. 2006 [cited 2017 Feb 7]. Available from: www.un.org/esa/socdev/unpfii/documents/5session_factsheet1.pdf
91. Office of the United Nations High Commissioner for Human Rights. Indigenous peoples and the United Nations human rights system [Internet]. 2013 [cited 2017 Feb 7]. Available from: <http://www.ohchr.org/Documents/Publications/fs9Rev.2.pdf>
92. Moher D, Liberati A, Tetzlaff J, Altman DG, PRISMA Group. Preferred reporting items for systematic reviews and meta-analyses: the PRISMA statement. *PLoS Med.* 2009;6(7):e1000097.
93. Joanna Briggs Institute. Joanna Briggs Institute reviewers' manual 2014 edition [Internet]. Adelaide (AU): JBI; 2014 [cited 2017 Jan 13]. Available from: <http://joannabriggs.org/assets/docs/sumari/reviewersmanual-2014.pdf>
94. Hughes D. Give smokes the flick - a qualitative evaluation of two quit smoking resources for Aboriginal pregnant women [Internet]. New South Wales (AU): North Coast Health Promotion; 2009 [cited 2017 Feb 13]. Available from: http://www.heti.nsw.gov.au/Global/Rural/RRCBP/Pre%202012%20RRCBP%20Intake/denise_hughes_report.pdf
95. Drewer A. Where there's smoke there's fire? Women's experiences of smoking and cessation during pregnancy [master's thesis]. Hamilton (NZ): University of Waikato; 2014.
96. Glover M. (2000). The effectiveness of a Maori Noho Marae smoking cessation intervention: utilising a kaupapa Maori methodology [dissertation]. Auckland (NZ): University of Auckland; 2000.
97. Glover M, Kira A. Why Maori women continue to smoke while pregnant. *N Z Med J.* 2011;124(1339):22-31.
98. Glover M, Kira A. Pregnant Māori smokers' perception of cessation support and how it can be more helpful. *J Smok Cessat.* 2012;7(02):65-71.
99. Glover M, Kira A, Cornell T, Smith C. Could 'aunties' recruit pregnant Indigenous women who smoke into a trial and deliver a cessation intervention? a feasibility study. *Matern Child Health J.* 2016;20(6):1211-21.

100. Glover M, Nosa V, Watson D, Paynter J. WhyKwit: a qualitative study of what motivates Māori, Pacific Island and low socio-economic peoples in Aotearoa/New Zealand to stop smoking. Auckland (NZ): University of Auckland, School of Population Health, Centre for Tobacco Control Research; 2010 [cited 2017 Feb 13]. Available from: <https://www.fmhs.auckland.ac.nz/assets/fmhs/soph/sch/atc/docs/WhyKwit%20Report.pdf>
101. Nelson C. Smoking behaviours among pregnant women in the Baffin region of Nunavut [dissertation]. Ottawa (ON): University of Ottawa; 2012.
102. Pletsch PK, Kratz AT. Why do women stop smoking during pregnancy? Cigarettes taste and smell bad. *Health Care Women Int.* 2004;25(7):671-9.
103. Shepherd-Sinclair WK. Wāhine Māori nurses who smoke and their role in smoking cessation [master's thesis]. Auckland (NZ): Auckland University of Technology; 2014.
104. Wilson G. What do Aboriginal women think is good antenatal care? [Internet]. Darwin (AU): Cooperative Research Centre for Aboriginal Health; 2009 [cited 2017 Feb 13]. Available from: <https://www.lowitja.org.au/sites/default/files/docs/Antenatal-Care-Consultation-Report-Sept-2009.pdf>
105. Wood L, France K, Hunt K, Eades S, Slack-Smith L. Indigenous women and smoking during pregnancy: knowledge, cultural contexts and barriers to cessation. *Soc Sci Med.* 2008;66(11):2378-89.
106. Radley A, Ballard P, Eadie D, MacAskill S, Donnelly L, Tappin D. Give it up for baby: outcomes and factors influencing uptake of a pilot smoking cessation incentive scheme for pregnant women. *BMC Public Health.* 2013;13:343.
107. Constantine NA, Slater JK, Carroll JA, Antin TM. Smoking cessation, maintenance, and relapse experiences among pregnant and postpartum adolescents: a qualitative analysis. *J Adolesc Health.* 2014;55(2):216-21.
108. Mantzari E, Vogt F, Marteau TM. The effectiveness of financial incentives for smoking cessation during pregnancy: is it from being paid or from the extra aid? *BMC Pregnancy Childbirth.* 2012;12:24.
109. Robinson J, Kirkcaldy AJ. 'Imagine all that smoke in their lungs': parents' perceptions of young children's tolerance of tobacco smoke. *Health Educ Res.* 2009;24(1):11-21.
110. Abrahamsson A, Springett J, Karlsson L, Ottosson T. Making sense of the challenge of smoking cessation during pregnancy: a phenomenographic approach. *Health Educ Res.* 2005;20(3):367- 78.

111. Tod AM. Barriers to smoking cessation in pregnancy: a qualitative study. *Br J Community Nurs.* 2003;8(2):56-64.
112. Haslam C, Draper ES. A qualitative study of smoking during pregnancy. *Psychol Health Med.* 2001;6(1):95-9.
113. Koshy P, Mackenzie M, Tappin D, Bauld L. Smoking cessation during pregnancy: the influence of partners, family and friends on quitters and non-quitters. *Health Soc Care Community.* 2010;18(5):500-10.
114. Herberts C, Sykes C. Midwives' perceptions of providing stop-smoking advice and pregnant smokers' perceptions of stop-smoking services within the same deprived area of London. *J Midwifery Womens Health.* 2012;57(1):67-73.
115. Randall S. Midwives' attitudes to smoking and smoking cessation in pregnancy. *Br J Midwifery.* 2009;17:642-6.
116. Bull L. Smoking cessation intervention with pregnant women and new parents (part 2): A focus group study of health visitors and midwives working in the UK. *J Neonatal Nurs.* 2007;13(5):179-85.
117. Zeev YB, Bonevski B, Twyman L, Watt K, Atkins L, Palazzi K, et al. Opportunities missed: crossed sectional survey of the provision of smoking cessation care to pregnant women by Australian general practitioners and obstetricians. *Nicotine Tob Res.* 2017;19(5):636-41.
118. Haslam C, Draper ES, Goyder E. The pregnant smoker: a preliminary investigation of the social and psychological influences. *J Public Health Med.* 1997;19(2):187-92.
119. Fernandez C, Wilson D. Maori women's views on smoking cessation initiatives. *Nurs Prax N Z.* 2008;24(2):27-40.
120. Johnston V, Thomas DP. What works in Indigenous tobacco control? The perceptions of remote Indigenous community members and health staff. *Health Promot J Austr.* 2010;21(1):45-50.
121. Choi WS, Daley CM, James A, Thomas J, Schupbach R, Segraves M, et al. Beliefs and attitudes regarding smoking cessation among American Indians: a pilot study. *Ethn Dis.* 2006;16(1):35-40.
122. Taylor P, Pyatt J, editors. *Smoking cessation during pregnancy: guidelines for intervention.* Olympia (WA): Washington State Department of Health; 2016.

123. Pregnets. Smoking cessation for pregnant and postpartum women: a toolkit for health care providers [Internet]. 2012 [cited 2017 Jul 4]. Available from: <http://www.pregnets.org/dl/Toolkit.pdf>
124. Chamberlain C, O'Mara-Eves A, Porter J, Coleman T, Perlen SM, Thomas J, McKenzie JE. Psychosocial interventions for supporting women to stop smoking in pregnancy. Cochrane Database Syst Rev [Internet]. 2013 [cited 2017 Jul 4]. Available from: <http://onlinelibrary.wiley.com/doi/10.1002/14651858.CD001055.pub4/epdf>
125. Tong A, Sainsbury P, Craig J. Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups. *Int J Qual Health Care*. 2007;19(6):349-57.

Appendix I: Derivation of ConQual scores for synthesized findings

<p>Synthesized finding 1</p> <p>Being pregnant is a motivator for Indigenous women to quit, try to quit, or cut down on smoking, mainly because they want to protect their children from the harmful effects of maternal smoking during pregnancy but also because of biological and environmental deterrents to smoking during pregnancy.</p>		
<p>Dependability</p> <p>Studies represented in the finding:</p> <ol style="list-style-type: none"> 1. Glover et al. (2010) (H) 2. Shepherd-Sinclair (2014) (H) 3. Drewer (2014) (M) 4. Pletsch & Kratz (2004) (M) 5. Wilson (2009) (M) 6. Wood et al. (2008) (M) 7. BlueEye et al. (2008) (L) 8. Glover & Kira (2012) (L) <p>Dependability is moderate: downgraded 1 level due to a mixture of dependability among the findings (5 high, 6 moderate, 2 low).</p>	<p>Credibility</p> <p>13 findings, 4 categories: 10 unequivocal, 3 credible</p> <p>Credibility of the findings is moderate: downgraded 1 level due to a mixture of unequivocal and credible findings.</p>	<p>ConQual score</p> <p>Confidence in the finding is low: downgraded 2 levels due to moderate dependability and moderate credibility.</p>
<p>Synthesized finding 2</p> <p>Knowing the health risks to the child and that one should not smoke during pregnancy, feeling emotionally troubled about one's smoking while pregnant, or acknowledging that smoking is not a personally desirable behavior may not be sufficient impetus for pregnant Indigenous women to quit smoking.</p>		
<p>Dependability</p> <p>Studies represented in the finding:</p> <ol style="list-style-type: none"> 1. Glover et al. (2010) (H) 2. Nelson (2012) (H) 3. Drewer (2014) (M) 4. Wood et al. (2008) (M) 5. Glover & Kira (2011) (L) 	<p>Credibility</p> <p>14 findings, 3 categories: 11 unequivocal, 3 credible</p> <p>Credibility of the findings is moderate: downgraded 1 level due to a mixture of unequivocal and credible findings.</p>	<p>ConQual score</p> <p>Confidence in the finding is low: downgraded 2 levels due to moderate dependability and moderate credibility.</p>

<p>Dependability is moderate: downgraded 1 level due to a mixture of dependability among the findings (5 high, 8 moderate, 1 low).</p>		
<p>Synthesized finding 3</p> <p>For Indigenous women, quitting smoking during pregnancy and staying quit may be impeded by such barriers as experiencing smoking dependency, being under stress, living in a smoking environment, lacking social support for quitting, rejecting or not knowing the facts about smoking harms, being unreceptive to antismoking messages, and having nothing to do.</p>		
<p>Dependability</p> <p>Studies represented in the finding:</p> <ol style="list-style-type: none"> 1. Glover (2000) (H) 2. Glover et al. (2010) (H) 3. Nelson (2012) (H) 4. Shepherd-Sinclair (2014) (H) 5. Drewer (2014) (M) 6. Wilson (2009) (M) 7. Wood et al. (2008) (M) 8. BlueEye et al. (2008) (L) 9. Glover & Kira (2011) (L) 10. Glover & Kira (2012) (L) <p>Dependability is moderate: downgraded 1 level due to a mixture of dependability among the findings (15 high, 16 moderate, 16 low).</p>	<p>Credibility</p> <p>47 findings, 7 categories: 33 unequivocal, 14 credible</p> <p>Credibility of the findings is moderate: downgraded 1 level due to a mixture of unequivocal and credible findings</p>	<p>ConQual score</p> <p>Confidence in the finding is low: downgraded 2 levels due to moderate dependability and moderate credibility.</p>
<p>Synthesized finding 4</p> <p>Indigenous women who smoke during pregnancy need prominently available and easily accessible health information, interventions, and programs for smoking cessation; ongoing support to stay quit; and helpful and understanding health care providers.</p>		
<p>Dependability</p> <p>Studies represented in the finding:</p> <ol style="list-style-type: none"> 1. Glover et al. (2010) (H) 2. Nelson (2012) (H) 3. Drewer (2012) (M) 	<p>Credibility</p> <p>27 findings, 3 categories: 15 unequivocal, 12 credible</p> <p>Credibility of the findings</p>	<p>ConQual score</p> <p>Confidence in the finding is very low: downgraded 3 levels due to low dependability and moderate credibility.</p>

<p>4. BlueEye et al. (2008) (L) 5. Glover & Kira (2012) (L) 6. Glover et al. (2016) (L) 7. Hughes (2011) (L)</p> <p>Dependability is low: downgraded 2 levels due to a mixture of dependability among the findings, with most findings from low dependability studies (4 high, 3 moderate, 20 low).</p>	<p>is moderate: downgraded 1 level due to a mixture of unequivocal and credible findings.</p>	
<p>Synthesized finding 5</p> <p>Indigenous women who smoke during pregnancy have varied preferences for smoking cessation initiatives.</p>		
<p>Dependability</p> <p>Studies represented in the finding: 1. Nelson (2012) (H) 2. Glover & Kira (2012) (L) 3. Hughes (2011) (L)</p> <p>Dependability is low: downgraded 2 levels due to largely low dependability among the findings (1 high, 14 low).</p>	<p>Credibility</p> <p>15 findings, 2 categories: 10 unequivocal, 5 credible Credibility of the findings is moderate: downgraded 1 level due to a mixture of unequivocal and credible findings.</p>	<p>ConQual score</p> <p>Confidence in the finding is very low: downgraded 3 levels due to low dependability and moderate credibility.</p>

Derivation of scores based on the JBI ConQual approach.¹
H = high, M = moderate, L = low.

Appendix II: Search strategies

Search for published studies in academic databases

The search for published studies was conducted on October 31, 2016 and included the following academic databases:

CINAHL

- S1 (MH "Health Services, Indigenous") OR (MH "Indigenous Peoples+") OR (MH "Indigenous Health") OR TI indigen* OR AB indigen* OR TI aborigin* OR AB aborigin* OR TI maori OR AB maori OR TI "native american" OR AB "native american" OR TI "native americans" OR AB "native americans" OR TI "first nations" OR AB "first nations" OR TI inuit* OR AB inuit* OR TI eskimo* OR AB eskimo* OR TI metis OR AB metis OR TI tribe OR AB tribe OR TI tribal OR AB tribal OR TI indian* OR AB indian*
- S2 (MH "Smoking") OR (MH "Smoking Cessation") OR (MH "Smoking Cessation Programs") OR (MH "Tobacco") OR TI smok* OR AB smok* OR TI tobacco OR AB tobacco OR TI cigarette* OR AB cigarette*
- S3 (MH "Pregnancy") OR (MH "Attitude to Pregnancy") OR (MH "Pregnancy in Adolescence") OR (MH "Prenatal Care") OR (MH "Expectant Mothers") OR (MH "Adolescent Mothers") OR (MW "in pregnancy") OR TI pregnan* OR AB pregnan* OR TI prenatal OR AB prenatal OR TI antenatal OR AB antenatal OR TI maternal OR AB maternal OR TI maternity OR AB maternity
- S4 (MH "Qualitative Studies+") OR (MH "Phenomenology") OR (MH "Feminism+") OR (MH "Audiorecording") OR (MH "Focus Groups") OR (MH "Interviews+") OR (MH "Narratives") OR (MH "Observational Methods+") OR (MH "Life Experiences") OR (MH "Thematic Analysis") OR (MH "Maternal Attitudes") OR (MH "Attitude to Health") OR (MH "Health Beliefs") OR (MH "Attitude to Pregnancy") OR TI qualitative OR AB qualitative OR TI interview* OR AB interview*
- S5 S1 AND S2 AND S3 AND S4

PubMed

- #1 ("Pregnant Women"[Mesh] OR "Pregnancy"[Mesh:NoExp] OR "Pregnancy in Adolescence"[Mesh] OR "Prenatal Care"[Mesh] OR pregnan*[tw] OR prenatal[tw] OR antenatal[tw] OR maternal[tw] OR maternity[tw])
- #2 ("American Native Continental Ancestry Group"[Mesh] OR "Oceanic Ancestry Group"[Mesh] OR "Health Services, Indigenous"[Mesh] OR aborigin*[tw] OR indigen*[tw] OR "native american"[tw] OR "native americans"[tw] OR "first

- nations"[tw] OR inuit[tw] OR eskimo[tw] OR metis[tw] OR tribe[tw] OR tribal[tw] OR indian[tw])
- #3 ("Tobacco Use"[Mesh] OR "Tobacco Use Cessation"[Mesh] OR smok*[tw] OR tobacco[tw] OR cigarette*[tw])
- #4 ("Qualitative Research"[Mesh] OR qualitative[tw] OR "Focus Groups"[Mesh] OR "Interviews as Topic"[Mesh] OR interview*[tw] OR "Narration"[Mesh] OR "Attitude to Health"[Mesh:NoExp] OR "mixed method"[tw] OR "mixed methods"[tw])
- #5 #1 AND #2 AND #3 AND #4

Embase

- #1 'indigenous people'/exp OR 'oceanic ancestry group'/exp OR 'indigenous health care'/exp OR aborigin*:ab,ti OR indigen*:ab,ti OR maori:ab,ti OR 'native american':ab,ti OR 'native americans':ab,ti OR 'first nations':ab,ti OR inuit*:ab,ti OR eskimo*:ab,ti OR metis:ab,ti OR tribe:ab,ti OR tribal:ab,ti OR indian*:ab,ti
- #2 'pregnancy'/de OR 'adolescent pregnancy'/de OR 'pregnant woman'/de OR 'prenatal care'/de OR pregnan*:ab,ti OR prenatal:ab,ti OR antenatal:ab,ti OR maternal:ab,ti OR maternity:ab,ti
- #3 'smoking'/de OR 'adolescent smoking'/de OR 'smoking cessation'/de OR smoking:ab,ti OR tobacco:ab,ti OR cigarette:ab,ti
- #4 #2 AND #3
- #5 'parental smoking'/de OR 'maternal smoking'/de
- #6 #4 OR #5
- #7 #1 AND #6
- #8 'qualitative research'/exp OR qualitative:ab,ti OR 'interview'/exp OR interview :ab,ti OR 'grounded theory'/de OR 'attitude to health'/de OR 'focus group':ab,ti OR 'focus groups':ab,ti OR 'mixed method':ab,ti OR 'mixed methods':ab,ti OR themes:ab,ti OR thematic:ab,ti OR phenomenol*:ab,ti OR narrative*:ab,ti OR 'grounded theory':ab,ti OR ethnograph*:ab,ti
- #9 #7 AND #8

PsycINFO

- S1 DE "Indigenous Populations" OR DE "Alaska Natives" OR DE "American Indians" OR DE "Inuit" OR DE "Pacific Islanders" OR TI indigen* OR AB indigen* OR TI aborigin* OR AB aborigin* OR TI maori OR AB maori OR TI "native american" OR AB "native american" OR TI "native americans" OR AB "native americans" OR TI "first nations" OR AB "first nations" OR TI inuit* OR AB inuit* OR TI eskimo* OR AB eskimo* OR TI metis OR AB metis OR TI tribe OR AB tribe OR TI tribal OR AB tribal OR TI indian* OR AB indian*
- S2 DE "Tobacco Smoking" OR DE "Smoking Cessation" OR TI smok* OR AB smok* OR TI tobacco OR AB tobacco OR TI cigarette* OR AB cigarette*
- S3 DE "Expectant Parents" OR DE "Expectant Mothers" OR DE "Prenatal Care" OR DE "Pregnancy" OR DE "Adolescent Pregnancy" OR TI pregnan* OR AB pregnan* OR TI prenatal OR AB prenatal OR TI antenatal OR AB antenatal OR TI maternal OR AB maternal OR TI maternity OR AB maternity
- S4 S1ANDS2ANDS3
- S5 (ZC "qualitative study") OR (ZC "focus group") OR (ZC "interview") OR TI qualitative OR AB qualitative OR TI interview* OR AB interview* OR TI "mixed method" OR AB "mixed method" OR TI "mixed methods" OR AB "mixed methods"

S6 S4 AND S5

SocINDEX

- S1 DE "INDIGENOUS peoples" OR DE "INDIGENOUS children" OR DE "INDIGENOUS youth" OR DE "NATIVE Americans" OR DE "INDIGENOUS peoples of the Americas" OR DE "ARCTIC peoples" OR DE "ABORIGINAL Australians" OR DE "TORRES Strait Islanders" OR DE "ESKIMOS" OR DE "METIS" OR TI indigen* OR AB indigen* OR TI aborigin* OR AB aborigin* OR TI maori OR AB maori OR TI "native american" OR AB "native american" OR TI "native americans" OR AB "native americans" OR TI "first nations" OR AB "first nations" OR TI inuit* OR AB inuit* OR TI eskimo* OR AB eskimo* OR TI metis OR AB metis OR TI tribe OR AB tribe OR TI tribal OR AB tribal OR TI indian* OR AB indian*
- S2 DE "TOBACCO" OR DE "TOBACCO use" OR DE "SMOKING" OR DE "CIGARETTE smokers" OR DE "CIGARETTES" OR DE "SMOKING cessation programs" OR TI smok* OR AB smok* OR TI tobacco OR AB tobacco OR TI cigarette* OR AB cigarette*
- S3 DE "PREGNANCY" OR DE "PREGNANT women" OR DE "TEENAGE pregnancy" OR DE "PRENATAL care" OR TI pregnan* OR AB pregnan* OR TI prenatal OR AB prenatal OR TI antenatal OR AB antenatal OR TI maternal OR AB maternal OR TI maternity OR AB maternity

S4 S1 AND S2 AND S3

S5 (DE "QUALITATIVE research" OR DE "INTERVIEWING" OR (DE "FOCUS groups") OR TI qualitative OR AB qualitative OR TI interview* OR AB interview*

S6 S4 AND S5

Sociological Abstracts

(SU.EXACT("Smoking") OR AB,TI(smok* OR tobacco OR cigarette*))

AND

(SU.EXACT("Eskimos") OR SU.EXACT("Indigenous Populations") OR SU.EXACT("Aboriginal Austral-ians") OR SU.EXACT("American Indians") OR AB,TI(indigen* OR aborigin* OR maori OR "native american" OR "native americans" OR "first nations" OR inuit* OR eskimo* OR metis OR tribe OR tribal OR indian*))

AND

(SU.EXACT("Pregnancy") OR SU.EXACT("Adolescent Pregnancy") OR AB,TI(pregnan OR prenatal OR antenatal OR maternal OR maternity))

AND

(AB,TI(qualitative OR interview* OR "focus group" OR "focus groups" OR "mixed methods" OR themes OR thematic OR phenomenol* OR narrative* OR "grounded theory" OR ethnograph*))

Web of Science

TOPIC: ((indigen* OR aborigin* OR maori OR "native american" OR "native americans" OR "first nations" OR inuit* OR eskimo* OR metis OR tribe OR tribal OR indian*))

AND

(smok* OR tobacco OR cigarette*)

AND

(pregnan* OR prenatal OR antenatal OR maternal OR maternity)

AND

(qualitative OR interview* OR "focus group" OR "focus groups" OR "mixed methods" OR themes OR thematic OR phenomenol* OR narrative* OR "grounded theory" OR ethnograph*))

Search for unpublished studies

The search for unpublished studies was conducted on October 31, 2016 and included the following databases, search engines, and websites:

Proquest Dissertations and Theses Database

all(aborigin OR indigenous OR "native american" OR "native americans" OR "first nations" OR tribe OR tribal OR indian* OR inuit* OR eskimo* OR innu* OR metis OR maori OR navaho OR "torres strait islander" OR "torres strait islanders")

AND

all(smoking OR smoker* OR tobacco OR cigarette*)

AND

all(pregnan* OR prenatal OR mother* OR antenatal OR maternal OR maternity)

Other databases, search engines, and websites

Various keywords and combinations of keywords as appropriate were used to find unpublished studies through other databases, search engines, and websites. The keywords were tobacco, smoking, smokers, cigarettes, Aboriginal, Indigenous, Native, First Nations, Inuit, Metis, addictions, maternal, maternal child health, maternal health and addiction, qualitative, and qualitative research. The sources were as follows:

OAlster

LILACS

MedNar

Google

Google Scholar

OpenGrey

Specific government, research institutes, and non-government organizational websites:

- Aboriginal Affairs and Northern Development Canada Catalogue (<http://virtua.aadnc-aandc.gc.ca/>)
- Australian Indigenous HealthInfoNet Bibliography (<http://www.healthinfonet.ecu.edu.au/key-resources/bibliography>)
- Canadian Health Research Collections (http://www.canadianelectroniclibrary.ca/Cdn_health_research_collection.html)
- Circumpolar Health Bibliographic Database (<http://www.aina.ucalgary.ca/chbd/>)
- Custom Google Search, Canadian Government Documents (<http://www.google.com/cse/home?cx=007843865286850066037:3ajwn2jlweq>)
- Indigenous Studies Portal (<http://iportal.usask.ca>)
- Lowitja Institute (<http://www.lowitja.org.au/>)
- Metis Health Research Database (<http://www.metiscentrersearch.ca/>)
- MURA - Australian Institute of Aboriginal and Torres Strait Islander Studies Catalogue (<http://aiatsis.gov.au/collections/using-collection/search-collection>)
- National Aboriginal Health Organization (<http://www.naho.ca/publications/>)
- Native Health Database (<https://hscssl.unm.edu/nhd/>)
- Network Environments for Aboriginal Research BC e-Library (<http://cahr.uvic.ca/nearbc/elibrary/aboriginal-health-abstract-database/>)
- NZResearch.org (<http://nzresearch.org.nz>)

Appendix III: Included studies

The following studies were retained after full-text examination for inclusion criteria.

1. BlueEye L, Rohweder C, McDougall J. Native American action plan – addressing tobacco abuse among pregnant and postpartum women [Internet]. Chapel Hill (NC): National Partnership to Help Pregnant Smokers Quit; 2008 [cited 2015 Jan 8]. Available from: <http://www.tobacco-cessation.org/PDFs/NativeAmericanActionPlan.pdf>⁷²
2. Drewer A. Where there's smoke there's fire? Women's experiences of smoking and cessation during pregnancy [master's thesis]. Hamilton (NZ): University of Waikato; 2014.⁹⁵
3. Glover M. (2000). The effectiveness of a Maori Noho Marae smoking cessation intervention: utilising a kaupapa Maori methodology [dissertation]. Auckland (NZ): University of Auckland; 2000.⁹⁶
4. Glover M, Kira A. Why Maori women continue to smoke while pregnant. *N Z Med J*. 2011;124(1339):22–31.⁹⁷
5. Glover M, Kira A. Pregnant Maori smokers' perception of cessation support and how it can be more helpful. *J Smok Cessat*. 2012;7(02):65–71.⁹⁸
6. Glover M, Kira A, Cornell T, Smith C. Could 'aunties' recruit pregnant Indigenous women who smoke into a trial and deliver a cessation intervention? a feasibility study. *Matern Child Health J*. 2016;20(6):1211–21.⁹⁹
7. Glover M, Nosa V, Watson D, Paynter J. WhyKwit: a qualitative study of what motivates Maori, Pacific Island and low socio-economic peoples in Aotearoa/New Zealand to stop smoking. Auckland (NZ): University of Auckland, School of Population Health, Centre for Tobacco Control Research; 2010 [cited 2017 Feb 13]. Available from: <https://www.fmhs.auckland.ac.nz/assets/fmhs/soph/sch/atc/docs/WhyKwit%20Report.pdf>¹⁰⁰
8. Hughes D. Give smokes the flick - a qualitative evaluation of two quit smoking resources for Aboriginal pregnant women [Internet]. New South Wales (AU): North Coast Health Promotion; 2009 [cited 2017 Feb 13]. Available from: http://www.heti.nsw.gov.au/Global/Rural/RRCBP/Pre%202012%20-RRCBP%20Intake/denise_hughes_report.pdf⁹⁴
9. Nelson C. Smoking behaviours among pregnant women in the Baffin region of Nunavut [dissertation]. Ottawa (ON): University of Ottawa; 2012.¹⁰¹
10. Pletsch PK, Kratz AT. Why do women stop smoking during pregnancy? Cigarettes taste and smell bad. *Health Care Women Int*. 2004;25(7):671–9.¹⁰²
11. Shepherd-Sinclair WK. Wahine Maori nurses who smoke and their role in smoking cessation [master's thesis]. Auckland (NZ): Auckland University of Technology; 2014.¹⁰³
12. Wilson G. What do Aboriginal women think is good antenatal care? [Internet]. Darwin (AU): Cooperative Research Centre for Aboriginal Health; 2009 [cited 2017 Feb 13]. Available from: <https://www.lowitja.org.au/sites/default/files/docs/Antenatal-Care-Consultation-Report-Sept-2009.pdf>¹⁰⁴
13. Wood L, France K, Hunt K, Eades S, Slack-Smith L. Indigenous women and smoking during pregnancy: knowledge, cultural contexts and barriers to cessation. *Soc Sci Med*. 2008;66(11):2378–89.¹⁰⁵

Appendix IV: Excluded studies

Methodological quality

No studies were excluded based on methodological quality.

Inclusion criteria

The following studies were excluded after full-text examination due to not meeting inclusion criteria (i.e. not phenomena or participants of interest, not qualitative methodology, mixed sample and unable to distinguish findings for participants of interest). Specific reasons for exclusion of each study are as follows:

1. Abrahamsson A, Springett J, Karlsson L, Ottosson T. Making sense of the challenge of smoking cessation during pregnancy: a phenomenographic approach. *Health Educ Res.* 2005;20(3):367–78. **Reason for exclusion:** Detail about participant ethnicity not provided. No evidence of Indigenous participants.
2. Arndt LM, Caskey M, Fossum J, Schmitt N, Davis AR, Smith SS, et al. Menominee perspectives on commercial and sacred tobacco use. *Am Indian Alsk Native Ment Health Res.* 2013;20(3):1–22. **Reason for exclusion:** Not about the phenomena of interest.
3. Borland T, Babayan A, Irfan S, Schwartz R. Exploring the adequacy of smoking cessation support for pregnant and postpartum women. *BMC Public Health.* 2013;13:472. **Reason for exclusion:** Mixed sample. No findings distinguishable for Indigenous participants.
4. Bottorff JL, Carey J, Mowatt R, Varcoe C, Johnson JL, Hutchinson P, et al. Bingo halls and smoking: perspectives of First Nations women. *Health Place.* 2009;15(4):1014–21. **Reason for exclusion:** Not about the phenomena of interest.
5. Bottorff JL, Johnson JL, Carey J, Hutchinson P, Sullivan D, Mowatt R, et al. A family affair: Aboriginal women’s efforts to limit second-hand smoke exposure at home. *Can J Public Health.* 2010;101(1):32–5. **Reason for exclusion:** Not about the phenomena of interest.
6. Chapple K, Kowanko I, Harvey P, Chong A, Battersby M. ‘Imagine if I gave up smoking ...’: a qualitative exploration of Aboriginal participants’ perspectives of a self-management pilot training intervention. *Aust J Prim Health.* 2016;22(2):147–52. **Reason for exclusion:** Not about the phenomena of interest.
7. Cosh S, Hawkins K, Skaczkowski G, Copley D, Bowden J. Tobacco use among urban Aboriginal Australian young people: a qualitative study of reasons for smoking, barriers to cessation and motivators for smoking cessation. *Aust J Prim Health.* 2015;21(3):334–41. **Reason for exclusion:** Not about the phenomena of interest.
8. Docherty SL, Lowry C, Miles MS. Poverty as context for the parenting experience of low-income Lumbee Indian mothers with a medically fragile infant. *Neonatal Netw.*

- 2007;26(6):361–9. **Reason for exclusion:** Not about the phenomena of interest.
9. Douglas TA, Buettner PG, Whitehall J. Maternal awareness of sudden infant death syndrome in North Queensland, Australia: an analysis of infant care practices. *J Paediatr Child Health*. 2001;37(5):441–5. **Reason for exclusion:** Not about the phenomena of interest.
 10. Dunn CL, Pirie PL, Lando HA. Attitudes and perceptions related to smoking among pregnant and postpartum women in a low-income, multiethnic setting. *Am J Health Promot*. 1998;12(4):267–74. **Reason for exclusion:** Mixed sample. No findings distinguishable for Indigenous participants.
 11. Edwards N, Sims-Jones N. Smoking and smoking relapse during pregnancy and postpartum: results of a qualitative study. *Birth*. 1998;25(2):94–100. **Reason for exclusion:** Detail about participant ethnicity not provided. No evidence of Indigenous participants.
 12. Fernandez, C., & Wilson, D. (2008). Maori women’s views on smoking cessation initiatives. *Nursing Praxis in New Zealand*, 24(2), 27–40. **Reason for exclusion:** Not about the phenomena of interest; one relevant finding but unsupported.
 13. Gilligan C, Sanson-Fisher RW, D’Este C, Eades S, Wenitong M. Knowledge and attitudes regarding smoking during pregnancy among Aboriginal and Torres Strait Islander women. *Med J Aust*. 2009;190(10):557 – 61. **Reason for exclusion:** Quantitative methodology. No qualitative data.
 14. Gilligan C. Aboriginal and Torres Strait Islander women: an examination of smoking during pregnancy [dissertation]. Newcastle (AU): University of Newcastle; 2008. **Reason for exclusion:** Quantitative methodology. No qualitative data.
 15. Glover M. Analysing smoking using Te Whare Tapa Wha. *NZ J Psychol*. 2005;34(1):13–9. **Reason for exclusion:** Not about the phenomena of interest.
 16. Glover M, Kira A, Johnston V, Walker N, Brown N, Thomas D. Australian and New Zealand Indigenous mothers’ report respect for smoking bans in homes. *Women Birth*. 2015;28(1):1–7. Reason for exclusion: Not about the phenomena of interest.
 17. Glover M, Kira A, Smith C. Enlisting “aunties” to support Indigenous pregnant women to stop smoking: Feasibility study results. *Nicotine Tob Res*. 2016;18(5):1110–5. **Reason for exclusion:** Mixed sample. No findings distinguishable for Indigenous participants.
 18. Gould GS, Munn J, Avuri S, Hoff S, Cadet-James Y, McEwen A, et al. “Nobody smokes in the house if there’s a new baby in it’’: Aboriginal perspectives on tobacco smoking in pregnancy and in the household in regional NSW Australia. *Women Birth*. 2013;26(4):246–53. [Authors contacted for clarity about the sample and participant voices.] **Reason for exclusion:** Mixed

sample. No findings distinguishable for Indigenous participants.

19. Haslam C, Draper ES. A qualitative study of smoking during pregnancy. *Psychol Health Med*. 2001;6(1):95 – 9. **Reason for exclusion:** Detail about participant ethnicity not provided. No evidence of Indigenous participants.
20. Haslam C, Draper ES, Goyder E. The pregnant smoker: a preliminary investigation of the social and psychological influences. *J Public Health (Oxf)*. 1997;19(2):187–92. **Reason for exclusion:** Detail about participant ethnicity not provided. No evidence of Indigenous participants.
21. Hauck, Y., Ronchi, F., Lourey, B., & Lewis, L. (2013). Challenges and enablers to smoking cessation for young pregnant Australian women: A qualitative study. *Birth*, 40(3), 202–208. **Reason for exclusion:** Mixed sample. No findings distinguishable for Indigenous participants.
22. Heath DL, Panaretto K, Manassis V, Larkins S, Malouf P, Reilly E, et al. Factors to consider in smoking interventions for Indigenous women. *Aust J Prim Health*. 2006;12(2):131–6. **Reason for exclusion:** Quantitative methodology. No qualitative data.
23. Homer CS, Foureur MJ, Allende T, Pekin F, Caplice S, Catling-Paull C. 'It's more than just having a baby' women's experiences of a maternity service for Australian Aboriginal and Torres Strait Islander families. *Midwifery*. 2012;28(4):E449–55. **Reason for exclusion:** Not about the phenomena of interest.
24. Jensen AB, Hounsgaard L. "I only smoke when I have nothing to do": a qualitative study on how smoking is part of everyday life in a Greenlandic village. *Int J Circumpolar Health*. 2013;72. **Reason for exclusion:** Not about the phenomena of interest.
25. Johnston V, Thomas DP. Smoking behaviours in a remote Australian Indigenous community: the influence of family and other factors. *Soc Sci Med*. 2008;67(11):1708–16. **Reason for exclusion:** Not about the phenomena of interest.
26. Klemp P, Robertson MC, Stansfield S, Klemp JA, Harding E. Factors associated with smoking and the reasons for stopping in Maori and Europeans: a comparative study. *N Z Med J*. 1998;111(1064): 148 – 501. **Reason for exclusion:** Quantitative methodology. No qualitative data.
27. Lendahls L, Ohman L, Liljestrang J, Hakansson A. Women's experiences of smoking during and after pregnancy as ascertained two to three years after birth. *Midwifery*. 2002;18(3):214–22. **Reason for exclusion:** Detail about participant ethnicity not provided. No evidence of Indigenous participants.
28. Maubach N, Hoek JA, Edwards R, Gifford H, Erick S, Newcombe R. 'The times are changing':

- New Zealand smokers' perceptions of the tobacco endgame. *Tob Control*. 2013;22(6):395–400. **Reason for exclusion:** Not about the phenomena of interest.
29. Mutch BL. Bringing it back: the meaning of tobacco to Manitoba's Metis peoples [master's thesis]. Winnipeg (MB): University of Manitoba; 2011. **Reason for exclusion:** Not about the phenomena of interest.
30. Nichter M, Nichter M, Muramoto M, Adrian S, Goldade K, Tesler L, et al. Smoking among low- income pregnant women: an ethnographic analysis. *Health Educ Behav*. 2007;34(5):748–64. **Reason for exclusion:** Mixed ethnicity. No evidence of Indigenous participants.
31. Orbell CR. Young Maori women and smoking: knowledge, attitudes, initiation and maintenance [master's thesis]. Palmerston North (NZ): Massey University; 1995. **Reason for exclusion:** Not about the phenomena of interest.
32. Passey M. Understanding smoking by pregnant Aboriginal women [dissertation]. Newcastle (AU): University of Newcastle; 2013. No voice for participants of interest. **Reason for exclusion:** Not about the phenomena of interest.
33. Passey ME, D'Este CA, Stirling JM, Sanson-Fisher RW. Factors associated with antenatal smoking among Aboriginal and Torres Strait Islander women in two jurisdictions. *Drug Alcohol Rev*. 2012;31(5):608 – 16. **Reason for exclusion:** Quantitative methodology. No qualitative data.
34. Passey M, Gale J, Holt B, Leatherday C, Roberts C, Kay D, Rogers L, Paden V. Stop smoking in its tracks: understanding smoking by rural Aboriginal women. In: Proceedings of the 10th National Rural Health Conference; 2009 May 17–20; Canberra, Australia. p. 17–20. **Reason for exclusion:** Not about the phenomena of interest.
35. Passey ME, Gale JT, Sanson-Fisher RW. "It's almost expected": rural Australian Aboriginal women's reflections on smoking initiation and maintenance: a qualitative study. *BMC Womens Health*. 2011;11:55. **Reason for exclusion:** Not about the phenomena of interest.
36. Passey ME, Sanson-Fisher RW. Provision of antenatal smoking cessation support: a survey with pregnant Aboriginal and Torres Strait Islander women. *Nicotine Tob Res*. 2015;17(6):746–9. **Reason for exclusion:** Quantitative methodology. No qualitative data.
37. Passey ME, Sanson-Fisher RW, D'Este CA, Stirling JM. Tobacco, alcohol and cannabis use during pregnancy: clustering of risks. *Drug Alcohol Depend*. 2014;134:44–50. **Reason for exclusion:** Quantitative methodology. No qualitative data.
38. Passey ME, Sanson-Fisher RW, Stirling JM. Supporting pregnant Aboriginal and Torres Strait Islander women to quit smoking: views of antenatal care providers and pregnant indigenous

women. *Matern Child Health J.* 2014;18(10):2293–9. **Reason for exclusion:** Quantitative methodology. No qualitative data.

39. Pletsch PK, Morgan S, Pieper AF. Context and beliefs about smoking and smoking cessation. *MCN Am J Matern Child Nurs.* 2003;28(5):320–5. **Reason for exclusion:** No indigenous participants.
40. Pullon S, Mcleod D, Benn C, Viccars A, White S, Cookson T, et al. Smoking cessation in New Zealand: education and resources for use by midwives for women who smoke during pregnancy. *Health Promot Int.* 2003;18(4):315–25. **Reason for exclusion:** Mixed sample. No findings distinguishable for Indigenous participants.
41. Stewart M, Kushner KE, Makwarimba E, Spitzer D, Letourneau N, Greaves L, Boscoe M, Daum C. There’s a way out for me: Insights from support intervention for low-income women who smoke. *Womens Health Urban Life.* 2010;9(2):42–62. **Reason for exclusion:** Mixed sample. No findings distinguishable for Indigenous participants.
42. Tane MP. A community controlled smoking cessation programme for Maori: ABC for Maori communities [master’s thesis]. Auckland (NZ): Auckland University of Technology; 2011. **Reason for exclusion:** Not about the phenomena of interest.
43. Tod AM. Barriers to smoking cessation in pregnancy: a qualitative study. *Br J Community Nurs.* 2003;8(2):56 – 64. **Reason for exclusion:** Detail about participant ethnicity not provided. No evidence of Indigenous participants.
44. van Esdonk T, Glover M, Kira A, Wagemakers A. Reducing smoking in pregnancy among Maori women: “aunties” perceptions and willingness to help. *Matern Child Health J.* 2014;18(10):2316–22. **Reason for exclusion:** Not about the phenomena of interest.
45. Varcoe C, Bottorff JL, Carey J, Sullivan D, Williams W. Wisdom and influence of elders: possibilities for health promotion and decreasing tobacco exposure in First Nations communities. *Can J Public Health.* 2010;101(2):154–8. **Reason for exclusion:** Not about the phenomena of interest.
46. Wigginton B, Lee C. A story of stigma: Australian women’s accounts of smoking during pregnancy. *Crit Public Health.* 2013;23(4):466–81. **Reason for exclusion:** Mixed sample. No findings distinguishable for the one Indigenous participant.

Duplicate publication

The following two records appear to be duplicates of included studies:

47. Glover M. Smoking during pregnancy among Maori women - investigating the attitudes of Maori pregnant women towards smoking. 2004. Funded by the Health Research Council of New Zealand. **Reason for exclusion:** Report not found but cited in other studies and seems

to be the same study as published by Glover and Kira (2011) and Glover & Kira (2012); both of which were included in this review.

48. Glover M, Nosa V, Gentles D, Watson D, Paynter J. Do New Zealand Mā ori and Pacific 'walk the talk' when it comes to stopping smoking? A qualitative study of motivation to quit. *J Smok Cessat.* 2014;9(02):68 – 75. **Reason for exclusion:** Appears to be from Glover, Nosa, Watson, Paynter (2010). The WhyKwit study, which was included in this review. There were no new relevant data in Glover et al. (2014).

Appendix V: Characteristics of included studies

Study	Methodology	Methods	Phenomenon of Interest	Participants/location	Reviewer's notes
BlueEye L, Rohweder C, McDougall J, 2008 ⁷²	Methodology and research questions not specified, but qualitative data collected to learn about cultural needs of pregnant Native American and Alaska Native women, their families, and health care providers for an action plan against tobacco abuse among pregnant and postpartum women.	Focus groups and case studies (pregnant women). Detail not provided for data analysis.	Tobacco abuse among pregnant and postpartum women	Multiple different samples including pregnant Native American women in US states. Two focus groups of pregnant women but number of pregnant women and demographics not specified.	Not clear as to whether all the pregnant women smoked during pregnancy; not clear as to whether Alaskan Natives were included. Difficult to discern pregnant women's experiences/ voices among other samples. Report included for a few quotations that are clearly from pregnant women who smoked during pregnancy. Abstract from a conference presentation is published but report not published. Some additional information received from direct contact with report author.
Drewer A, 2014 ⁹⁵	Methodology not specified but the study aim is delineated and a qualitative approach was used.	Face-to-face semi-structured interviews. Thematic analysis.	Factors that influence smoking and quitting during pregnancy	15 women who had quit, tried to quit, or continued smoking during pregnancy. Mixed sample including European, Maori/European, Maori, Samoan/European; ages 20–41 years; 9 postpartum and 6 pregnant. Other demographic data not provided. Location within NZ not specified.	Unpublished master's thesis. Report included for the findings specific to the 5 Maori and Maori/European women; 3 pregnant and 2 postpartum.

Glover M, 2000 ⁹⁶	Longitudinal quasi-experimental design; qualitative and quantitative data; investigated effectiveness of a Noho Marae smoking cessation program.	In-person interviews with questionnaires (open- and close-ended questions). Content analysis for qualitative data.	Smoking cessation	Experimental group of 26 and control group of 104 Maori; all were smokers intending to quit. 78% women and 22% men; average age 35.5 years; 57% had a Community Services Card, indicating low SES. The greater Auckland region, NZ; metropolitan and rural.	Doctoral dissertation; data collected 1997–98. Not specific to smoking in pregnancy but 14 participants were pregnant or planning to be pregnant. Difficult to discern experience of smoking during pregnancy. Included for one discernible relevant finding and quotation.
Glover M, Kira A, 2011 ⁹⁷	Exploratory qualitative	In-person, semi-structured interviews with questionnaires (open- and close-ended questions). Analysed for categories using an Indigenous theoretical framework. Responses also quantified.	Smoking during pregnancy, attitudes toward smoking during pregnancy, factors influencing continued smoking, and family support to quit.	60 pregnant Maori women; ages 17–43 years. Not clear if all were current smokers. 23% had no educational qualifications; 38% had some employment. Auckland, Wellington, Hamilton, Kawakawa, and around the Hokianga, NZ.	Data collected 2002–2003. Minimal participant voice, limited to short quotations. Appears to be the same study as the report, <i>Smoking during pregnancy among Maori women - investigating the attitudes of Maori pregnant women towards smoking</i> (# 15 excluded study) funded by the Health Research Council of New Zealand, 2004. Report referenced in the literature but not found.
Glover M, Kira A, 2012 ⁹⁸	Exploratory qualitative	In-person, semi-structured interviews (open- and close-ended questions). Content categorized inductively. Responses also quantified.	Smoking during pregnancy, perception of cessation services and products.	60 pregnant Maori women; all current smokers except one who recently stopped smoking on becoming pregnant. 80% were eligible for Community Services Card. South Hokianga, Whangarei, the greater Auckland	Appears to be the same study as Glover and Kira 2011 (although there are some differences in what is reported) and both seem to be from <i>Smoking during pregnancy among Maori women - investigating the</i>

				region, Ngaruawahia, Bay of Plenty area, Wellington region, NZ.	<i>attitudes of Maori pregnant women towards smoking</i> as noted above. The findings in the two publications are different, however.
Glover M, Kira A, Cornell T, Smith C, 2016 ⁹⁹	Exploratory participatory action; feasibility study to determine whether community health workers (aunties) could recruit pregnant women and deliver a smoking cessation intervention.	In-person, semi-structured interviews (open and close-ended questions). Analysis reported as deductive for qualitative data.	Smoking cessation during pregnancy	Subsample of 14 women who had undergone a smoking cessation intervention (from 67 recruited for the intervention); ages > 16 years. Of the overall sample, 84% were eligible for a Community Services Card and 73% had up to high school education. Northern region of NZ.	Mixed sample of Maori, Pacific, and NZ Europeanj/Pakeha peoples. Study included for the two findings specific to Maori women.
Glover M, Nosa V, Watson D, Paynter J, 2010 ¹⁰⁰	Exploratory qualitative	Focus groups with guided exercises to facilitate discussion. Analysis involved an inductive approach for themes and categories using a Maori framework.	Smoking cessation, motivation to quit, and cessation support needs.	A number of different ethnic groups in the larger sample of 211 participants; 90 Maori. Wide age range for Maori- 16 to > 61 years; 58% eligible for a Community Services Card. Male and female smokers and recent quitters. Auckland, Canterbury, Hawkes Bay, Tokoroa, Waiarapa, NZ.	About smoking in Maori and Pacific Islands peoples. Not about smoking in pregnancy, specifically; although there is some data relevant to the experience of smoking during pregnancy. The report includes data from the WhyKwit and Kwit-Needs studies. Only findings relevant to Māori people were extracted. Findings in the report are also published in Glover, Nosa, Gentles, Watson, & Paynter (2014) (#19 excluded study).
Hughes D, 2011 ⁹⁴	Stated as a phenomenology design but about	Semi-structured interviews (one-to-one or in small	Smoking cessation during pregnancy	15 smoking cessation workers and 10 clients (9	The methods of the study are inconsistent with

	<p>evaluation of a quit resource for pregnant Aboriginal women (Give Smokes the Flick); to determine smoking cessation workers' and women's opinions on the resource and its impact on smoking and on families.</p>	<p>groups). Thematic analysis using constant comparison method.</p>		<p>who were pregnant at the time of use of the resource and 1 man). The women were Aboriginal (7) or non- Aboriginal (2) but living with Aboriginal partners. Not clear whether Aboriginal included Torres Strait Islanders. Little detail about sample characteristics - 50% of clients were under 25 years of age. New South Wales, AU.</p>	<p>the stated phenomenological design. Little detail and some discrepancy regarding sample characteristics. Because of the mixed sample, it was not possible to discern in the report the experience of smoking during pregnancy for Aboriginal women, specifically. The author was contacted for clarity. Henceforth, findings relevant to Aboriginal women were extracted.</p>
<p>Nelson C, 2012¹⁰¹</p>	<p>Not specified, except mixed methods; qualitative and quantitative data.</p>	<p>Semi-structured interviews for relevant qualitative data. Analysis was guided by Spradley's suggestions for ethno- graphic interviews.</p>	<p>Smoking cessation during pregnancy</p>	<p>17 pregnant Inuit women; all were current smokers or had smoked at least one cigarette since knowing about being pregnant. Ages 20 to 37 years. 10 had not completed high school. All had been pregnant previously. Variation in income and employment status. Baffin region of Nunavut, CA.</p>	<p>Unpublished doctoral dissertation, consisting of three manuscripts: interviewer-administered survey to pregnant women about factors associated with smoking cessation; semi-structured qualitative interviews with pregnant women about factors influencing smoking and barriers and facilitators to smoking cessation; and structured inter- views with health care providers about the influence of the health care system on smoking behaviour. Well done study. Qualitative</p>

					findings from the pregnant women extracted.
Pletsch P, Kratz AT, 2015 ¹⁰²	Longitudinal qualitative descriptive approach	Three semi-structured interviews: early in pregnancy, 36 weeks of pregnancy, three months postpartum. Thematic content analysis.	Smoking behaviors during pregnancy and the postpartum period	15 pregnant women (8 African American, 4 Non-Hispanic White, 2 Hispanic, 1 Native American) who had stopped smoking with- out intervention by their first prenatal health appointment. Average age, years of education, and household income are 24, 12, and approximately \$20,000 respectively. Midwestern region, US.	Only one topic reported in the findings (i.e., aversive taste and smell of smoking during pregnancy) and minimal participant voice. Study included for the one quotation from the Native American.
Shepherd-Sinclair WK, 2014 ¹⁰³	Kaupapa Maori qualitative research methodology	Semi-structured interviews; paired and single. Thematic analysis.	Smoking experiences in Maori nurses and how it impacts providing smoking cessation advice to others	6 wahine Maori nurses and 1 Maori nursing student, who were current smokers; ages 24– 45 years. Northland and Auckland regions, NZ.	Unpublished master's thesis. Part of a larger study conducted by Whakauae Research, Taupua Waiora Centre for Maori Research and the New Zealand Nurses Organisation. Not about smoking in pregnancy, specifically, but study included for a couple findings relevant to the women's smoking during pregnancy. Well done study.
Wilson G, 2009 ¹⁰⁴	Action research approach and consultations with Aboriginal women; qualitative and quantitative data	Individual discussions and group meetings. Inductive analysis for themes.	Antenatal care for Aboriginal women	136 young and older Aboriginal women; ages 16 to > 60 years. All except 1 of the young women had recently given birth. Diverse Aboriginal languages represented.	About antenatal care, not smoking in pregnancy, specifically, but report included for a couple relevant findings about smoking in pregnancy.

				Other demographic data not provided. Not clear whether Aboriginal included Torres Strait Islanders. Alice Springs and 8 remote communities, central region, AU.	
Wood L, France K, Hunt K, Eades S, Slack-Smith L, 2008 ¹⁰⁵	Not specified, except qualitative, informed by Indigenous research literature.	Focus groups and individual interviews. Thematic analysis.	Smoking during pregnancy; experiences of smoking; perceptions, attitudes, and knowledge regarding smoking during pregnancy.	40 Indigenous women of childbearing age and 10 Aboriginal Health Workers. Not clear whether Aboriginal included Torres Strait Islanders. Most of the women were mothers; 7 identified themselves as pregnant; 30 were current smokers and 7 were ex-smokers, leaving 3 of the women as not having smoked. Other demographic data not provided. Perth, western AU.	This study is not exclusively about the experience of smoking during pregnancy, but also involves views of women from the community and of Aboriginal Health Workers. The women were not asked directly about pregnancy. However, some of the findings from the women are relevant to the experience of smoking during pregnancy.

Appendix VI: Findings of included studies

1. BlueEye L, Rohweder C, McDougall J, 2008. Native American action plan: Addressing tobacco abuse among pregnant & postpartum women⁷²

Findings	Illustrations (page)
1. She was able to quit when she became pregnant, but only until after her daughter was born. By the time she was 19, Joshelina was smoking 3– 4 packs of cigarettes a day when she became pregnant with her second child. (C)	“When I found out I was pregnant again, the knowledge of health issues and the problems that it can cause for the baby, I think that really helped me make the decision to quit smoking and stay quit,” (5)
2. Joshelina initially found support from her health care provider at the Ute Mountain Ute Tribal Health Clinic. The tobacco prevention specialist recognized her commitment to quitting the abuse of tobacco. While Joshelina was not sure about her ability to quit smoking cigarettes, the clinic staff . . . (C)	“had confidence in me,” (5)
3. Joshelina’s experience taught her many lessons that might help other pregnant Native Americans. (C)	“Find a buddy to support your decision to remain smoke-free, and have someone to call, especially a former-smoker who might understand.” (5)
4. Joshelina encourages others to have faith in their decision; (C)	“if you want to quit smoking, believe in yourself, keep at it and don’t give up.” (5)

2. Drewer A, 2014. Where there’s smoke there’s fire? Women’s experiences of smoking and cessation during pregnancy⁹⁵

Findings	Illustrations (page)
1. Described how much they hated or disliked smoking; in particular they mentioned the smell, and that it was a disgusting habit. Stacey, who hadn’t thought about stopping, admitted that . . . (C)	“A smoke doesn’t even taste that great, it’s just the feeling I get when, when I actually inhale a smoke”. (49)
2. Seven women spoke of the addictive qualities of smoking. . . . It was also Stacey who described the only way she would be able to quit ... (C)	“I really, really want to get sick to the point I can’t handle a smoke just like my mum did. Like I reckon if I was to get really really crook and I couldn’t handle the smoke, I reckon that’d make me quit”. (50)
3. JC recalled one time her mother had been having ‘digs’ at her about smoking. (C)	“It got me angry. I was like, it’s my body, I should be able to”. (51)

<p>4. Reducing the amount that was smoked was triggered by two main factors. Morning sickness was mentioned by five women. (U)</p>	<p>“I think it [morning sickness] had a lot to do with that, every time I went to have a smoke, it was like err, gross”. (52)</p>
<p>5. Four women who were admitted to hospital for pregnancy complications or to be induced remembered how they had been unable to smoke at all, or had smoked less. Reasons included being physically unable to get to the smoking area, not wanting to smoke in such a public place and feeling too ill. (U)</p>	<p>“I cut down a lot when I was in hospital, and I was in hospital for 6 weeks, plus you’d need to go downstairs and outside, out on the road to smoke there anyhow, so can you really be bothered. And then I think cos of all the health officials, you know, and again, that, the whole smoking thing, that was me being self-conscious I guess and I don’t know, I just didn’t want to be looked down on you know, quietly I just wanted to be my own private person and not really let on you know. So it was easier for me to go hours without a cigarette in hospital, and I think too that bleeding, I started feeling really guilty, but obviously not guilty enough to make me stop.” (52)</p>
<p>6. Women focused on information that reinforced their decision [to not smoke]. For example, losing her first baby was a constant reminder for Leanne of what can happen and that was her one reason to not restart. (U)</p>	<p>“I do want a healthy baby this time, not a dead baby” (53) “I’ll be half way through the smoke and I’ll just think about it [her baby who was stillborn] and put it out” (53)</p>
<p>7. When talking about smoking during pregnancy, 14 of the 15 women reported guilt or other negative emotional responses. (U)</p>	<p>“selfish” (54) “It’s in the back of my mind, worry is still there” (54) “I did feel bad” (54) “I always have concerns about when I’m pregnant, I always have concerns”. (54)</p>
<p>8. Women also spoke of past pregnancies and their older children who had experienced health complications that the women had connected to smoking. (U)</p>	<p>“I know that I can have low birth weight children, children with asthma which I, actually my oldest daughter’s got asthma and I have. My youngest daughter, she’s been you know, she was quite small um, I wouldn’t say she was premature, but she was quite small.” (55)</p>

<p>9. Leanne and JC had both lost babies prior to birth and had to give birth naturally to them. Neither had been given a medical reason for their baby's death, but both attributed smoking as a causal factor. (U)</p>	<p>"Has to be something to do with smoking, I mean, your blood just doesn't thin out for no reason, you know, it normally takes something like smoking for something like that to happen" (55) "cos they couldn't find a reason why the baby died. Smoking is the only thing that happened during the pregnancy" (55)</p>
<p>10. Despite women talking about negative impacts on health, they were uncertain of the specific risks (C)</p>	<p>"I don't think smoking has any defects on their learning or on their brain or anything like that, what damage we don't know, I mean, what can it do to a baby really?" (56)</p>
<p>11. Previous experiences of their own or another's pregnancy were used to illustrate that smoking perhaps wasn't as concerning as it is purported to be. (U)</p>	<p>"I've had friends who have completely stopped smoking and they've had a stillbirth". (56)</p>
<p>12. Stacey talked about how she was not too concerned about her baby being born with breathing difficulties. (U)</p>	<p>"Well my other babies haven't got it [breathing problems] you know, this baby'll be fine". (56)</p>
<p>13. Three women spoke about how their partners would tell them they should stop smoking for the health of the baby. (U)</p>	<p>"he'd [her baby's dad] be like stop smoking man, how many smokes have you had today? blah blah blah" (59) "like even my partner, he's like, we should quit babe, it's not good for our babies and rahdy rah, and it's still not enough to make me quit". (59)</p>
<p>14. None of these women's partners or flatmates made attempts to quit and only some made small alterations to their smoking such as smoking away from them. (U)</p>	<p>"He's actually a big part of why I still smoke and I'm not going to blame him, but he does, he thinks he smokes less than me, but he actually smokes a lot more than me. And when we have, or when I've tried to cut down it's been really hard because you see him go out for a cigarette. I would try to do it together and um he thinks it's a game who's going to crack first. So it usually doesn't last very long, and I find that even when we trying to give up um, he will um like he'll cut down but he'll go behind my back and have a sneaky</p>

	cigarette.” (60)
15. Eight women talked about how the advice [from their midwife], support or information had not matched their needs. Five women wanting advice were offered very little or nothing at all . . . Leanne, who described herself as not having any knowledge around the risks to the baby in her first pregnancy, reported that she was simply told “it’s not good for the baby” once or twice. (U)	“every midwife should encourage women who are pregnant that the effects of what, what it might do to the baby, and every time they see them they should perhaps encourage them a bit”. (63)
16. Three women who didn’t want to be spoken to about cessation or smoking. . . . Stacey reported having a “primo” relationship with her midwife yet the topic of smoking was one that was never received well. (U)	“it’s like oh God shut up, we were just talking about this last week” (63)
17. Five women felt the information or support they received suited them. (U)	“my doctor told me if you feel like smoking again come and see me and I’ll give you some lozenges and patches but I didn’t know that they did that kind of stuff before”. (63)
18. Some women who continued to smoke also had positive experiences (with the information or support they received): (U)	“we did talk about it, she did give me a pamphlet but she just sort of took it on that you know what to do, you know what it does to you, it’s up to you”. (63)
19. Cessation literature was also overlooked by some women (U)	“when they first come out I didn’t like them, especially the baby one, but now I don’t really, I just don’t notice the pictures anymore”. (63–64)
20. Leanne spoke of her different awareness of anti-smoking literature comparing her experiences in her two pregnancies. (C)	“I’m aware now, [of anti-smoking in pregnancy literature] there’s even ones [posters] that say that it can cause stillbirths. But I never took that in, I used to think that wouldn’t ever happen to me”. (64)
21. Six women who smoked at some point in their pregnancy could remember when they had felt judged or negatively assessed by people in public, friends or family. (U)	“I do remember actually when I went up and they were going to induce me before I took that induce pill at the hospital, I was just in a nightie and you know, my stomach just sort of showed out a little bit, a bump. And I remember I was just outside the hospital, you weren’t really allowed to smoke out there where the delivery

	<p>suite is, but a little bit over, there's some stairs as soon as you come out the main door there's some stairs right across. Um I was just in there having a cigarette and I remember a nurse walking in and she saw me and I saw her look down at my stomach, and she gave me a dirty as look like um, but it didn't really do anything to me, I just thought in my head "bitch", like you know, that's what I thought. But that actually really got to me after, afterwards, like after the still birth was all over and that, that look of that nurse, um, it didn't get to me till later on, that why she looked at me like that. And I think now, now I understand why she looked at me like that now. And she wasn't a bitch really, she wasn't". (66–67)</p>
<p>22. To avoid being judged or responded to critically, women hid their smoking or carefully chose who they would talk to about it. (U)</p>	<p>"A lot of people would look down on mums smoking. So I think for me, I think it was more, a self-image, a self-image or something. I didn't want to be that pregnant woman, in public, smoking where people can clearly see I'm hapu [pregnant]". (67)</p>
<p>23. Women who continued to smoke were generally reluctant to pass any kind of judgement on another woman's behaviour whilst pregnant. (U)</p>	<p>"If that's what she wants to do, then that's up to her, I know how hard it is to give up smoking, I wouldn't judge her or anything like that. The hardest thing I think for myself is getting people, when you're pregnant and you smoke, is to getting people to understand what you are going through and it's not always simple cos everyone is different and everyone has a different opinion on smoking when pregnant, and um, people are exposed to different situations that can stress them out, and so everybody's different." (68)</p>

3. Glover M, 2000. The effectiveness of a Maori Noho Marae smoking cessation intervention:

Utilising a kaupapa Maori methodology.⁹⁶

Findings	Illustration (page)
1. Problems with partners and ex-partners . . . were cited as reasons for relapse. One participant had multiple problems: She felt alone with no adult company, having moved away from her hometown and whanau. She was pregnant and her partner was unemployed so they had limited money, which he was spending going out drinking and smoking. They began arguing . . . (U)	[smoking] “was the only thing there for me at the time. . . In the end I just didn’t care about anything - hurt myself - I felt alone. . . the only way to get around the smell of my partner kissing me, it was disgusting - if I smelt too, it didn’t effect me so much. . . stressful and depressing.” (256)

4. Glover M, Kira A, 2011. Why Maori women continue to smoke while pregnant.⁹⁷

Findings	Illustration (page)
1. Of the reasons given for smoking 50% of participants said they smoked because of habit. (U)	“Just got to have something in my hands. It’s not that I like it.” (25)
2. The second most common reason for smoking was due to stress. (U)	“Stress and my partner and arguing and stress and my mother and stress.” (25) “Stops me from stressing out.” (25) “Stops me from worrying about things.” (25)
3. Participants cited multiple reasons motivating them to quit smoking. . . . Reasons for contemplating quitting were for . . . own health. Several previous quit attempts had been “for my health.” (U)	“If I could give it up, it would do me world of good.” (25) “I got sick.” (25) “smoker’s cough and the effects.” (25) “I had the flu actually. I just couldn’t smoke.” (25)
4. Attitudes towards smoking during pregnancy - No need to quit completely if they cut down Was used to rationalize continued smoking. (U)	“cos [because] they said even cutting down would be beneficial. Quitting would be better but cutting down better – every hour or two you don’t smoke baby is getting more oxygen— that is why I cut out last one at night and first two in morning so baby has more time smokefree.” (26)
5. Attitudes towards smoking during pregnancy - Of concern, 33% agreed that they may as well keep smoking themselves as they were exposed to so much smoke from others. (U)	“they say nowadays secondhand smoke worse than first hand.” (26)
6. Smoking at work was easy (U)	“just go out whenever want to” (27) “there’s a designated smoking area outside” (27) “majority of staff

	smoke" (27)
7. Even participants who worked or were students at schools, an environment designated smokefree under legislation, still smoked while there. (U)	"practically everyone" smoked (27) "allowed to during breaks" (27) "designated [smoking] area out the back" such as "a smoking shed." (27)
8. 19 women (32%) said their partner wanted them to stop smoking. (U)	"keeps telling me: think of the baby" (27) "the father tells me to give up." (27) "partner asked me to give up but he reckons I'm pretty good now 'cos I'm slowing down." (27)
9. The women's mothers were the next main group to advise cutting down or stopping smoking (22%). (C)	". . . even though she smokes she doesn't like me smoking." (27)
10. Partners were the most frequently named support person. Some women's partners . . . (U)	"concerned for baby's health" (27) got "pamphlets about secondhand smoke" (27) "tried to give up" themselves" (27) "a chain smoker—very hard to offer support. He goes outside to try not to trigger me off." (27)
11. Support to quit - About six participants had a friend or friends who would support them. (U)	"good friend" because "she was a smoker and she gave up" (28)
12. In contrast, about eight women didn't think they had anyone in their whanau or social circle who could support them to quit, . . . (U)	"they're all smokers." (28)

5. Glover M, Kira A, 2012. Pregnant Maori smokers' perception of cessation support and how it can be more helpful.⁹⁸

Findings	Illustration (page)
1. Health Provider Support - The majority of women (82%) had been advised to stop smoking, most commonly by a midwife (63%). However, only 21% felt influenced by the advice. (C)	"you're given the stuff and you've got to do it on your own" (66)
2. Health Provider Support – Several women talked about the need for support people to be more understanding. (U)	"they've got to understand where the smoker's coming from". (67)
3. Health Provider Support – Support people needed to be less judgemental. . . (C)	"not be too harsh on you" (67)
4. Health Provider Support – A few of the women were positive about midwives and cessation workers visiting women in their home. . . (U)	"more readily available services for Maori women and easily accessible – ring and they come around and see

	<p>me, especially if they are a Maori person". (67)</p> <p>"some people don't have a phone and the fact that the service came to my home at a time convenient to me is a huge bonus". (67)</p> <p>"said she would ring [the cessation service] for me [which] made it easier for me not to avoid". (67)</p>
5. Two women were positive about phone services ... (U)	<p>"someone to ring". (67)</p> <p>"Quit advisor ringing up, that's what was inspirational". (67)</p>
6. One woman, however, found Quitline "too impersonal". (U)	<p>". . . I felt too disconnected from my support and they didn't ring as promised'. (67)</p>
7. Health Provider Support – A few women thought it would be helpful to work with a . . . service grounded in a Maori world view and operated in accordance with Maori cultural protocols. (U)	<p>"midwife of the same culture" (67)</p> <p>"kaupapa Maori" (67)</p> <p>"I'm trying to find a Maori midwife, but it's hopeless". (67)</p>
8. Health education resources – Four women said there needed to be more advertising "about the services for pregnant women". (U)	<p>"Find out what the options are and allow her easy access to those options at no cost". (67)</p> <p>"Because I wouldn't have known about them if not set up at the clinic I go to because they weren't there with other children. It should be offered to every pregnant woman – that there are services available. Make it more aware that there are services out there, more than Quitline. One on one meetings in person and maybe – I didn't know there are subsidised patches and gum". (67)</p>
9. Health education resources – Several women had suggestions for new resources or suggestions on how to improve the utilisation and delivery of existing resources. (C)	<p>"a video on damage of smoking would help". (67)</p> <p>"plays, shows, as in someone doing acts about smoking during pregnancy". (67)</p> <p>"music, listening to lyrics to do with stopping smoking" (67)</p>
10. Health education resources – A few women spoke of the warnings on cigarette packets. (U)	<p>"more advertising on the cigarette pack itself for pregnant women - have a graphic picture" (67)</p>

	<p>“don’t just have a warning notice on packets. It doesn’t work”. (67)</p>
<p>11. Health education resources - Six women said there needed to be more information on how to stop smoking (U)</p>	<p>“hand us a quit pack”. (67)</p> <p>“Something else that would be useful, would be knowing what happens when you do stop smoking, how your body changes.” (67)</p> <p>“more information about NRT [nicotine replacement therapy] and the effect on baby”. (67)</p>
<p>12. Knowing that baby was at risk – Fourteen women (23%) thought motivation to quit would be helped by more and better provision of advice and information on the “effects and after effects”. (U)</p>	<p>“realism could shock” (68)</p> <p>“Especially . . . the Doctor should be giving advice. He should know about the research and they should know the right information.” (68)</p> <p>“the more that we know, the more knowledge we have and we can share it with other people”. (68)</p>
<p>13. Mass media support to quit - Nine women said that ‘some people would do well with the ads on TV’ and there needed to be ‘more in the media,’ ‘more ads about the damage it does’. (U)</p>	<p>“they don’t really have much advertising about stopping smoking. They have a lot of alcohol ones, not enough smoking ones.” (68)</p> <p>“you see them for a while and then you don’t see them for ages”. (68)</p> <p>“the alcohol ads’ . . . ‘gross but effective”. (68)</p> <p>“A good example are the alcohol ads, runs mate off the road, leads to death.” (68)</p>
<p>14. Mass media support to quit – They wanted more advertisements that ‘deliver the facts’, ‘real stink ads . . . about the effects of smoking, ‘those disgusting ads’. (C)</p>	<p>“maybe infomercials on effects” (68)</p>
<p>15. Mass media support to quit – The Quitline ‘health effects’ advertisements were not seen to be effective. (U)</p>	<p>“the ad smoke going through the tube is not enough to put me off”. (68)</p> <p>‘just make us want to smoke’ (68)</p> <p>“I don’t even take any notice of their stupid ads.” (68)</p>
<p>16. Supportive programmes – Eight women thought that women needed to be motivated to quit ‘for yourself’ and supported with ‘encourage- ment’. (C)</p>	<p>“support, praise, awhi [support] women who don’t smoke” (68)</p>
<p>17. Supportive Programmes – Eight women thought ‘there should be a group’. (U)</p>	<p>“support group” (68)</p> <p>“classes” (68)</p>

	<p>“with other pregnant women who smoke” (68)</p> <p>“quit smoking course” (68)</p> <p>“the sort of thing where you get a lot of support and help from other people” (68)</p> <p>“. . . get shown video - real graphic ones” (68) “tai chi, some kind of relaxation if you got other children, got stress” (68)</p> <p>“a real life shock factor story – where parents can come in and talk to pregnant mums . . . that may help . . . where perhaps they’ve lost children for example to SIDS, miscarriage, as a main or direct result of drinking or smoking” (68)</p>
18. Supportive Programmes - A couple women thought they needed a “residential detox”. . . (C)	“go away for a couple weeks with people around you who don’t smoke” (68)
19. Having something else to do – Ten participants thought pregnant women would be helped to quit if they had something to occupy them. . . (U)	<p>“hobby, fitness . . . interest” (68)</p> <p>“maybe a support group” (68)</p> <p>“Sitting at home being pregnant it’s really yuk. It’s really stink. There’s nothing else to do and they can’t go out because they’re big and fat. I spoke to a lot of other friends: can’t go and look for work because they’re pregnant. Can’t go out ’cos feel fat and ugly. If I kept myself occupied I wouldn’t smoke so much.” (68)</p>
20. Two women thought that social pressure would help motivate pregnant women to give up. (U)	“put off smoking in public because of people pressure”. (68)
21. Having smokefree whanau – Twelve women thought pregnant women would be helped to change their smoking if their partner, family or friends didn’t smoke. (U)	<p>“Living with no smokers” (68)</p> <p>“that people around you don’t smoke around you. It’s pretty hard when other people are smoking around you.” (68)</p>
22. Having smokefree whanau – Six women said it helps to have smokefree environments. (U)	“smokefree work environment” (68) “I smoke more while at work than at home.” (68)
23. Nicotine replacement therapy - Fourteen women suggested nicotine substitutes or replace-	“something to make them feel good . . . beside food” (68)

ment (C)	<p>“help those ones willing to quit with resources” (68)</p> <p>“free of charge” (68)</p> <p>“Doctors should prescribe things. I was quite shocked especially for a Doctor to not.” (68)</p>
24. Change government policy – Several women suggested a ‘prohibition against tobacco’. (U)	<p>“stop making them” (68) “stop selling cigarettes” (68) “make them disappear from everywhere else” (68)</p> <p>“target the supplier” (68) “give up the companies” (68)</p> <p>“the price so people can’t afford to smoke” (68 – 69)</p>

6. Glover M, Kira A, Cornell T, Smith C, 2016. Could ‘aunties’ recruit pregnant Indigenous women who smoke into a trial and deliver a cessation intervention? A feasibility study.⁹⁹

Findings	Illustration (page)
1. All participants thought the Aunty giving support and the information that she gave was good and the way “she explained it” helped. (U)	<p>“The way she put it across was really kind and thoughtful, not judgmental . . . and some of the things she said made me think a lot about smoking and drinking.” (1215)</p>
2. The Aunties were described as supportive, nice and non-judgmental which helped the participants to feel comfortable. (U)	<p>“It made me feel like there are people out there who care for the mums. I felt her warmth and her aroha [love] towards me being pregnant” (1215)</p>

7. Glover M, Nosa V, Watson D, Paynter J, 2010. WhyKwit: A qualitative study of what motivates Maori, Pacific Island and low socio-economic peoples in Aotearoa/New Zealand to stop smoking.¹⁰⁰

Findings	Illustration (page)
1. For some women, stopping smoking when pregnant was easy. (U)	<p>“As soon as I found out I was pregnant I gave up just like that.” (12)</p> <p>“Yep. I can give up just like that, and no crave.” (12)</p>
2. One of the reasons it was so easy for some women to quit when pregnant was that they felt sick and couldn’t smoke due to morning sickness. (C)	<p>“I couldn’t stand the smell of cigarettes. I could smell cigarette butts from a fucking mile away, yeah. I just couldn’t stand it, so I just went cold turkey.” (12)</p>
3. Not being able to stop smoking when pregnant	<p>“Everyone knows you don’t smoke</p>

created cognitive dissonance that some participants coped with by becoming quite dismissive of this as a reason. For example, one woman said despite knowing she should stop for pregnancy, she didn't. (C)	when you're pregnant . . . a reason for stopping, but I didn't actually do it." (12)
4. Quitting for pregnancy was also seen as a temporary quit, like a reluctant unintended and therefore not real quit attempt, because women just return to smoking as soon after having baby as they can. (C)	". . . went back after the kids were born." (13)
5. Reasons for quitting - Another group noted that pregnancy came up for women more. (C)	"Oh, then that pregnancy one comes in." (20)
6. But, another young woman, speaking from experience, said despite saying she would stop smoking for pregnancy, she did not. (C)	"I said that but it didn't happen - twice." (30)
7. Quitting to have a healthy pregnancy or to protect the unborn child from risks to health was rejected by some participants who did not believe smoking caused harm, either because that had been their experience or they had poor health literacy and didn't know. (C)	"I smoked through all my pregnancies." (31) "Yeah, you can smoke and still have a healthy pregnancy, I think . . . Yeah, cos if you can't give it up you get stressed out." (31) "Pregnant - down the bottom . . . Everyone I know that's pregnant still smokes . . . I'm pregnant and I still smoke." (31)
8. Pregnancy was cited as a quit method because of the frequency with which it had caused women to stop smoking. (U)	". . . because I wanted to give up. Because you know everyone knows you don't smoke when you're pregnant." (66)
9. A number of female participants gave up cold turkey when they fell pregnant and found themselves replacing smoking with "substitute eating" to compensate but without any cessation products or services to support them, they returned to smoking shortly after having baby or finishing breastfeeding. (C)	"The drinking just stopped like that. That was easy. But smoking was still really hard . . . how did you get through that? I don't know . . . I eat . . . It's just swapping one addiction for another isn't it? You just ate. I don't know. It wasn't hard though ... As soon as I found out I was hapu I just stopped. Drinking and smoking. That was the end of it. And then, I was all good right up until I finished breastfeeding." (66)
10. General stress was cited, as was stressful life events, like having a baby. (U)	"I actually had two cigarettes when I was in labour with my first. Because I

	was six months pregnant, when I gave birth to my oldest. So I was freaking out. Because I knew that the baby wasn't ready. And I didn't smoke during that pregnancy. So when I had my first contraction and started bleeding, that was me. I was just smoking right outside the ambulance waiting for the paramedics to get the stretcher ready." (71)
11. Many women who stopped smoking unintentionally because of morning sickness in pregnancy or intentionally for pregnancy, started again as soon after they'd had the child, or stopped breastfeeding. (U)	"Went back after the kids were born. (72) "Once I had them, well, 'where's the cigarettes?' " (72) "After I had the child, as soon as, I had two things in my hand. One was a coffee and one was a cigarette." (72) "I breastfed for a while so I didn't smoke while I was breastfeeding but as soon as they came off ..." (72)
12. One woman, got a craving 2 weeks before birth and started then. (U)	"A couple of weeks before I had my daughter. Oh, I feel like a cigarette . . . For some unknown reason I started smoking again." (72)

8. Hughes D, 2011. The rural capacity building program 2009 final report for research project: Give smokes the flick - A qualitative evaluation of two quit smoking resources for Aboriginal pregnant women.⁹⁴

Findings	Illustration (page)
1. One client has made an appointment with her GP to arrange NRT to help her quit. This was her first time she had really been shown or talked to about NRT (C)	"No that's why I wanted to try ... I've got a doctor's appointment this Wednesday . . . so I'm going to talk to him about it and I'm going to go from there because I really want to try and you know do something" (12)
2. Three clients commented that they did not see the need for culturally appropriate tobacco resources. (C)	"White or black sort of thing it doesn't matter, smoking don't discriminate who it kills and all that. Everyone can benefit." (12)
3. A recurring theme was that more support was needed for Aboriginal people who felt that once they quit there was no ongoing support to stay	"A lot of people are on the internet now, like I don't go anywhere unless I have to . . . maybe internet even SMS .

<p>quit. Suggestions by one client to combat this were to have a support line, much like the Quitline, just for Aboriginal people (client did not explain why), motivational SMS texts that you could sign up for, and support groups for quitters similar to Alcoholics Anonymous, where you would have sponsors who you could ring when and if you were feeling particularly vulnerable. (C)</p>	<p>.. they can sign up for free SMS . . . if there was something like that with. . . motivational little quotes . . . Maybe a little reward you know like ... AA you get a 30 day tick, something like that . . . I don't know maybe even groups . . . for smokers, like you know they have alcoholics anonymous. Say like 'oh I feel like having a smoke, you know do you want to come over and we'll go for a walk' . . . my father was actually ... did do a course last year ... he passed away a couple of weeks ago but . . . he wanted to give up smoking, that's what he was working towards so I think there needs to be more . . . support groups for people who are thinking about giving up smoking and who have given up smoking . . ." (16)</p>
<p>4. The same client also discussed the need for a holistic approach, that you need advice on healthy eating and physical activity whilst giving up. (C)</p>	<p>"... also the hard thing with giving up smoking is eating ... I've always been a big girl ... I'm an emotional eater so if I was to give up smoking I would just be eating twice as much as I do now ..." (16)</p>
<p>5. Another suggestion was for a website that Aboriginal people could access without the stress of having to turn up somewhere, with the website you can log on any time it suits you. (U)</p>	<p>"I think a website is a great idea all different links to everything . . . you know when you do a course and you feel obligated to go? . . . could it be something where you're not obligated, you can just show up if you feel like it . . . obligation that's stressful see, obligation or responsibility, that's what turns people to smoking (laughter)." (16)</p>
<p>6. One client had success in giving up using the microtabs given to her by the midwife after seeing the resource. She had seen and tried NRT in the past, but the midwife gave her samples including the inhaler and microtabs, which she had not used before. (U)</p>	<p>"At first I was sort of, was a bit urkk with it ... They're quite a strong taste. . . I thought well . . . I'm getting them for nothing, quit whinging and just you know and then after probably about . . . by the second sheet . . . because she give me a pack of 100. I was fine with them . . . I've tried the um, nicobates . . . I find that</p>

	<p>because they've got that um mint flavour . . . they tend to become quite addictive. Whereas the nicorelle ones, the little microtabs because they've got that little bit of bitter taste you tend not to want to shove one in your mouth as often. Yeah and I found them really good." (18)</p>
<p>7. Clients were very open to try the free samples on offer. All clients either went on to purchase their own or had doctors' appointments booked to arrange NRT. (U)</p>	<p>"Yeah [worker named] shown us all those ones ... it's the first time I'd ever seen them ... I found them very interesting that made me want to try them . . . when [worker named] showed us in the course I thought 'oh I'd like to try you know some of that stuff she showed about you know' Yeah that was very helpful . . . I'd like to try the pipe one you know . . . that seems like a good one to start off with and see how I go." (18)</p>
<p>8. Clients reported that learning about the available NRT options motivated them to try it. (U)</p>	<p>"It's the first time I'd ever seen them . . . I found them very interesting that made me want to try them do you know what I mean?. . .when [worker named] showed us in the course I thought 'oh I'd like to try' ... some of that stuff she showed ... I was pretty happy with that . . . when I seen all the stuff that can help you ... it gave me a bit of a oomph to try you know what I mean" (18)</p>
<p>9. Educating workers in regards to NRT has been a very important step to encourage clients to use NRT when having a quit attempt. It was noted by one client that it was great to see what your options were because some Aboriginal people get embarrassed to ask. (U)</p>	<p>"I'd seen 'em on the ad on the TV but that's all and when [worker named] showed me that was the first time I'd ever sort of seen them, it's good to know your options . . . And being Aboriginal, some Aboriginals would get embarrassed so they're not going ask about things yeah." (19)</p>
<p>10. Often when a smoker is faced with the choice of buying cigarettes or NRT they will choose the cigarettes. (U)</p>	<p>". . . like the mindset of a smoker is you know, if I'm going to spend \$10 on that when I can buy a packet of smokes I'll buy a packet of smokes. You know</p>

	<p>what I mean? ... if you can sort of get a couple of free samples, I think it sort of helps you on your way . . . I can't understand why they don't have that, them on . . . the free list like they do the patches because I think a lot more people would</p> <p>. . . but I really think the government should put them on ... the prescription list as well ... a bit of variety because some people just don't like patches and . . . you know they're all a quit smoking aid . . . so I can't understand why they've got one lot but not the other you know, they have different types of antibiotics for you know different people so I mean smoking is the same." (19)</p>
<p>11. The clients thought that all NRT products should be made cheaper or free and available on PBS and that while NRT is not on PBS it would be good to access starter kits of NRT so that they are free to try before they buy and see what will work best for them instead of going without their cigarettes to achieve this. (C)</p>	<p>"There's people that want to give up and they have to, they will have to pay for it before and that's what stopped them." (19)</p>

9. Nelson C, 2012. Smoking behaviours among pregnant women in the Baffin region of Nunavut.¹⁰¹

Findings	Illustration (page)
<p>1. Most women identified that they understood there were health risks to their fetuses. All were aware that the baby is "smoking" every time they do, but this was not sufficient motivation for them to quit. (U)</p>	<p>"I know it's hurting the baby but maybe due to my addiction, I'm not quitting." (115)</p>
<p>2. For those who have had previous pregnancies, when asked about their previous smoking behaviours, all of them stated they smoked with their previous pregnancies. Seven women stated that their other children had respiratory illnesses. (U)</p>	<p>"Um, well like all my boys, I have smoked throughout the whole time. They usually have colds, runny nose, earaches and stuff like that." (115)</p>
<p>3. Stress and addiction to nicotine were the most commonly reported reasons why smoking</p>	<p>"No, with my other two I, I smoked less, like even before I found out I was</p>

<p>continued during pregnancy. (C)</p>	<p>pregnant with them, I wasn't smoking as much but then all the, all the stress at home and all the acting up got me smoking more and more every day." (116)</p>
<p>4. Some of the women expressed feelings of guilt as they felt they could not stop smoking due to their self-reported addiction to nicotine. (U)</p>	<p>"Even though I know it's hurting my baby and I don't like that part, but I think I'm just so addicted to it that its not making me want to quit as much . . . I feel sorry for the baby inside me because the baby can't go nowhere." (116)</p>
<p>5. All women reported stress as the main reason for their continued smoking throughout their pregnancy. . . three women described stressful life circumstances impeding their ability to quit smoking including financial situations, housing instability, troubled partner relationships and single parenthood. (U)</p>	<p>"Well being a single parent and taking care of all three boys, um, I don't like to make excuses though but, ah, sometimes it's just really hard to try and balance, um, to be a mother and, ah, a person . . . you know, I don't know what else, just ah, the father and I have some real issues to deal with." (117)</p> <p>"Sometimes I start realizing that when I'm in the stressful situation, I'm smoking more often . . . like trying to buy the Pampers for the babies, it's so expensive at home and the formula, the, the youngest little boy that I have but my mom adopted, I end up buying him formula when they can't." (117)</p> <p>". . . it's mostly stress at home too 'cause we're having problems with housing. We can't get our own place and like peoples being, a lot of people have been applying for houses and some of them up, have been trying for so many years and every family has different situations and that's not how the housing, ah, association is looking at it . . . like anyways just so stressed, stressed out about not having our own space and our own place, like our own rules right so I think it's more stress . . . ah, there's 5 of us, two bedrooms and another one coming, one on the way."</p>

	(117–118)
6. All the women identified that smoking was used as a coping mechanism as it helped them temporarily relieve their anxiety. When asked if they could see themselves doing something else to help alleviate their stress, the mere thought of not smoking was enough to provoke an anxious response. Increased marijuana use was often cited as an alternative to reduced tobacco use to help control their anxiety. (C)	“... like I usually go for a smoke every half hour and hour but and I also those green stuff... yeah that (marijuana) helps me stop smoke, less too.” (118)
7. Boredom... many women claiming there is nothing to do in their communities. Cigarettes often presented the only “break” women had in their day, and gave them something to do when they experienced boredom. (U)	“There is nothing to do in my home town.” (118) “Like get bored, when I get bored, I get smoke.” (118)
8. The social aspect of smoking was the most prominent overarching theme as a barrier to smoking cessation. Most women have smoking partners, friends or family members of which they are exposed to everyday. (U)	“I think it would be harder to quit because I got a lot of friends who smoke cigarettes and my parent smoke cigarettes and my boyfriend and my brother.” (119)
9. Many women identified that it would be difficult to resist smoking if they saw their friends or family go out for a cigarette, and most would be surrounded by others smoking on a daily basis. (U)	“I find it difficult to quit and everybody else that I’m usually around smoke too, so seeing them puff on a cigarette makes me want to puff on a cigarette.” (119)
10. All women... who were not originally from Iqaluit and staying at the boarding home stated that they increased cigarette smoking since arriving in Iqaluit to await the delivery of their babies, some as much as 2–3 times their regular daily cigarette consumption. Reasons for this increase in cigarette consumption at the boarding home included partner instability/troubled relationships and the stress of leaving their children behind in their communities as the women are typically sent to Iqaluit alone to give birth, and usually cannot bring their children with them. (C)	“... when I was back home, I normally was smoking six sticks a day but then when I came here (Iqaluit), [I am now smoking] half a pack a day.” (120) “... but lately I’ve, I smoke a lot since I got here (Iqaluit), just thinking about my girls back home.” (121)
11. Seeing other women smoking often increased their desire to smoke. (U)	“(Being at the boarding home) make me want to smoke more. Um, like when they said I’m going for a smoke, I feel like I want to smoke too and yeah”. (121)
12. When asked if the women knew where they	“[I’d go to the] health centre, but I

could go for help or support to quit smoking, most of the women (n 1/4 12) stated that “they did not know of any existing programs or did not know where to go.” Five suggested going to the local nursing station to seek help. (C)	don’t think its really much help” (122)
13. Most women felt that if they wanted to quit smoking in their home community, they would be left on their own to do it, without any formal support. But as Genevieve noted, this would make it much harder. (U)	“Yes it does (make it harder to quit at home) ah ‘cause you, you would have to try and quit by yourself without anybody helping you.” (121)
14. Most women identified that their addiction to nicotine would pose a problem, but a “pill” or patch to help curb the cravings would help them quit smoking. (C)	“I would need nicotine patch or nicotine gum . . . that’s the most important thing I would need.” (123)
15. Most wanted more programs like “moms and tots” or group activities to get them out of the house. There was a lot of emphasis on fresh air and outdoors (walking) to help them remain smoke free. (U)	“There should be more and more Butt Out for pregnant women.” (124) “Um, there should be something else like go out somewhere and have something to do . . . sewing, maybe moms and tots. Something like that.” (124)

10. Pletsch P, Kratz, T, 2004. Why do women stop smoking during pregnancy? Cigarettes taste and smell bad.¹⁰²

Findings	Illustration (page)
1. Changes in taste and smell of primary and second-hand smoke shortly after they became pregnant. Women described their experiences of losing their taste for cigarettes, with most making a direct attribution of the taste and smell changes to being pregnant. (U)	“Your body’s really sensitive to smell and taste. You notice the chemicals in cigarettes more. I could taste more than mint. I could taste tar. It tasted like somebody took bug spray and sprayed it in your mouth.” (675)

11. Shepherd-Sinclair WK, 2014. Wahine Maori nurses who smoke and their role in smoking cessation.¹⁰³

Findings	Illustration (page)
1. Coping with study and trying to quit, as want to be seen to be doing the right thing, presented its own set of challenges. (U)	“Just the studies, being pregnant. Being pregnant while studying and then trying to give up smoking and then you’ve got the stress on top of all that. That was the hardest for me.” (52)

<p>2. Cold turkey was the method of choice for some as their baby's health became more important than smoking. (U)</p>	<p>"Well I went cold turkey, the health of my baby is more important than a cigarette a day. So it was not easy at first, but I just put it to myself, like my son, my baby is more important. So two weeks later I did not want one. I was Ok, did not feel like a cigarette. There was no cravings, no nothing." (52)</p>
--	---

12. Wilson G, 2009. What do Aboriginal women think is good antenatal care.¹⁰⁴

Findings	Illustration (page)
<p>1. Most of these young women seemed to be aware of the negative effects of smoking during pregnancy and said that before they were pregnant they smoked cigarettes but once they discovered they were pregnant they stopped smoking, tried to stop or reduced the number of cigarettes they smoked. (U)</p>	<p>"I think I only drank once . . . yeah, but that was it, yeah, no more, never got drunk or anything cos just knew that the intake of, I just remembered those pictures of the woman smoking or the woman drinking and then they showed the baby inside the tummy and they've got a cigarette or they've got a can, those posters always came to mind." (32) "So I smoked through my pregnancy. But, I really, really cut down because I started getting sick if I had more than three a day, so it was good. (32)</p>
<p>2. All who commented on this indicated that it was extremely difficult to stop smoking entirely and that they struggled to reduce the number of cigarettes they smoked in a day. (U)</p>	<p>"I smoke cigarettes, and as much as [friends and clinic staff] tried to persuade me to quit, I wasn't having none of it." (32) "When I was pregnant I probably smoked two cigarettes a day, because if I didn't have a cigarette I was really stressed." (32) "I smoked cigarettes [even family said] 'stop smoking'. . .I used to have to hide from my pop to have a smoke. [I tried to give up] by trying to cut down, smoke less, tried to give up altogether [but it] didn't work." (32)</p>

13. Wood L, France K, Hunt K, Eades S, Slack-Smith L, 2008. Indigenous women and smoking during pregnancy: Knowledge, cultural contexts and barriers to cessation.¹⁰⁵

Findings	Illustration (page)
1. Several mothers made the decision to quit cold turkey because they were pregnant, indicating that the decision was made for the health of their baby. (U)	“Once I knew I was going to keep the baby that was it, I just quit smoking and quit drinking. Because of all the health information that I’d learnt over the years about the way that alcohol and smoking can affect your unborn baby. And I was really concerned.” (2382)
2. Some of the women felt pregnancy made them smoke even more because it increased boredom or stress. (C)	“I can’t give up that easy I’ve tried, but it’s just too hard. Just like being pregnant and always like you know you’ve got other problems and dealing with the other kids and stuff like that.” (2382)
3. References to babies turning out ‘normal’ despite smoking during pregnancy were common. (U)	“They (the health professionals) just said that you know it makes baby small and that, but my babies were healthy you know, nothing was wrong with them.” (2382–2383)
4. Awareness of the risks related to smoking during pregnancy - Prematurity was mentioned less frequently than low birthweight as attributed to smoking. (U)	“I can go in early and have prem babies through all the smoking that I do. My babies are always too small; they are never the weight, the proper weight.” (2383)
5. Awareness of the risks related to smoking during pregnancy - Asthma and breathing related problems in children were other effects of smoking during pregnancy most frequently mentioned. In several cases, mothers attributed their child’s asthma directly to their own smoking during pregnancy. (U)	“My daughter, oldest girl, she’s 12 and I smoked through her pregnancy and she’s got chronic asthma now, and when she was born they had to put her onto that oxygen box to help her breath, so it is serious. I should say for me a pregnant smoker, recommend that women shouldn’t smoke, while they are pregnant. Because I know now what my daughter went through, but I can’t help it (smoking) at the moment because I’m home- less.” (p.2383)
6. Rationales discounting the impact of smoking during pregnancy - Denial (U)	“. . . my babies were healthy you know, nothing was wrong with them.

	Only thing that was wrong with him (refers to the baby in her lap), but it wasn't caused through smoking, inflamed kidney, but that's not through smoking." (2383)
7. Many of the others who had continued to smoke during pregnancy mentioned how hard they would find it to quit. (C)	"You get a lot of pregnant women that quit, you know when they find out that they're pregnant, they'll just go cold turkey and quit. I don't know how they could cope." (2383–2384)

Where there is more than one quotation for finding, the highest level of credibility among them is assigned to the finding. C, credible; U, unequivocal.