Smoking in pregnant Indigenous women and smoking cessation interventions: A literature review

Dr Precious Lusumbami1, Dr Kym Rae2, Dr Jenny May2
1 Obstetrics Department, Tamworth Rural Referral Hospital, Hunter New England Health.
2 University Department of Rural Health Northern NSW, Faculty of Health, University of Newcastle.

Background

Smoking in pregnancy has been associated with low birth weight, preterm delivery and sudden infant death (SIDS) [1, 2]. The long term consequences of smoking in pregnancy include childhood asthma[3], ear infections[4], and behavioural problems[5, 6]. A number of studies have shown persistently higher rates of smoking among pregnant Indigenous compared to non-Indigenous women in Australia [1, 7, 8].

Aim

This literature review was designed to determine prevalence of smoking in pregnant Indigenous women in other Western countries, the factors associated with smoking in these communities, any smoking cessation interventions and their applicability to pregnant Indigenous Australian woman.

Method

Published and grey literature in English in the last 25 years (1984 to current) was reviewed using the following keywords in combination or as single words: Indigenous, Aboriginal, Maori, Inuit, American Indian, pregnant, smoking, tobacco, cessation, nicotine replacement.

Results

81 articles, 11 websites from Australia, New Zealand, Canada and United States of America were reviewed.

Smoking prevalence in Pregnancy (%)[7,8-11]

<table>
<thead>
<tr>
<th>Country</th>
<th>Indigenous</th>
<th>Non-Indigenous</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>14.5%</td>
<td>3.9%</td>
</tr>
<tr>
<td>NZ</td>
<td>15%</td>
<td>4%</td>
</tr>
<tr>
<td>USA</td>
<td>12.5%</td>
<td>9%</td>
</tr>
<tr>
<td>Canada</td>
<td>15%</td>
<td>5.5%</td>
</tr>
</tbody>
</table>

As this figure illustrates, Indigenous Australian women have 3 times the rate of smoking in pregnancy as non-Indigenous women. In Canada Indigenous women have more than twice the rates of smoking of non-Indigenous Canadian women and in New Zealand 40-80% Maori women smoke in pregnancy compared to 22% of non-Maori women. In the United States American Indians have the highest rate of smoking compared to the White, Latino and African-American women[9].

Factors associated with smoking among Indigenous women

Factors associated with smoking in Indigenous women include lower levels of education, unmarried status[9, 10] increasing parity and having a smoking partner or living with a smoker [11]. In addition, Australian women also have higher the further the residential distance is from urban areas, the higher the prevalence of smoking in pregnancy among Indigenous women[7]. This may suggest less access to healthcare with remote habitation.

Smoking cessation interventions

A review of the literature on smoking cessation interventions in Indigenous Australians by Ivers [12] revealed the lack of research in this area, with none on the pregnant Indigenous women. Although smoking prevalence is disproportionately higher among Indigenous women, one study in Australia and another in New Zealand found low levels of nicotine addiction among these women[13, 14]. This may help explain the limited success of nicotine replacement shown by one small study in the Northern Territory [15]. Smoking in the Indigenous community is used as a way of forging relationships and social interaction [16]. Intervention strategies need to take into consideration.

The lack of knowledge of the harmful effects of smoking in pregnancy was demonstrated by Wood et al in Australian Indigenous women[8]. This was also shown in Maori women[11].

Mainstream interventions have focused on the identification of smokers at the first antenatal visit, brief counselling and provision of self help materials. This is done through the 5As algorithm-Assess, Advise, Assist and Arrange follow up [17].

While smoking in pregnancy may be more of an individual choice in mainstream society, the community plays a larger role within Indigenous societies. The applicability and effectiveness of the individualised approach needs further evaluation in Indigenous women. Moreover, smoking cessation is not regarded as a priority compared to other issues such as poor housing, drugs, alcohol, domestic violence[8, 16].

In the United States, Haviland et al described a national media campaign to raise awareness of the harmful effects of smoking in pregnancy involving television advertisements, toll free quit lines and education materials in the form of booklets, video and the internet[18]. 79% of the calls occurred during the television adverts, showing that this was reaching the targeted audience. This strategy can be employed (and subsequently evaluated) for the Australian Indigenous women especially now that there is an Indigenous television channel.

One study to evaluate community designed smoking cessation interventions in the Northern Territory Indigenous communities did not show a decrease in tobacco consumption[19]. This study did not specifically target pregnant women and these conclusions cannot therefore be generalised to this subgroup.

A recent Cochrane review states a 50-70% smoking cessation rate with nicotine replacement therapy in the non pregnant population[20]. Although Nicotine replacement is not licensed for use in pregnancy due to lack of safety evidence, there is a general consensus that it can be used for smoking cessation in pregnancy[21]. Research is needed to evaluate the effectiveness of this intervention in Indigenous women.

Conclusion

Indigenous women in the Western world have consistently higher rates of smoking in pregnancy compared to their non-Indigenous counterparts. By understanding the reasons why these women smoke, more appropriate cessation interventions can be implemented and evaluated.

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