A global perspective on smoking during pregnancy

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Smoking during pregnancy is associated with pregnancy complications, such as pre-eclampsia, placenta praevia, and placental abruption, and with poor fetal outcomes such as low birthweight, premature birth, stillbirth, sudden infant death syndrome, and high overall perinatal mortality.[1,2] Yet comprehensive population data on the prevalence of smoking during pregnancy at the country, regional, or global level are limited. The Global Tobacco Surveillance System[3] provides data on the prevalence of tobacco use by adults and young people but does not include data on pregnant women.

In *The Lancet Global Health*, Shannon Lange and colleagues[4] report the results of a systematic review and meta-analysis of the scientific literature from the past 30 years to estimate the prevalence of smoking during pregnancy by country, WHO region, and globally. Where possible, country-specific reports were combined to provide precise estimates of prevalence. For countries with little or no data, multilevel modelling was used to predict prevalence. The global prevalence of smoking during pregnancy was estimated to be 1·7% (95% CI 0·0–4·5), with wide variations between countries and regions. The prevalence was highest in the European Region and in the Region of the Americas. Smoking during pregnancy was a highly prevalent behaviour worldwide, and the investigators call for increased efforts to prevent and stop smoking during pregnancy.

Lange and colleagues made an extensive effort to review the relevant scientific literature. They included predictions of global and regional estimates of the frequency and quantity of cigarette use and projected future prevalence trends. Although their estimates provide a much-needed statement about smoking during pregnancy worldwide, there is also a need for caution when interpreting their estimates. Only 43 countries had two or more prevalence reports, and estimates were projected for the remaining 131 countries. Another limitation was the exclusion of smokeless tobacco use. Concern is growing over the frequent use of smokeless tobacco by women, particularly in Asia and Africa,[5] and over its use during pregnancy[6] given its potential to cause poor birth outcomes.[7] Despite these limitations, the data offer a useful basis to advocate for policies that address smoking in pregnancy and for future studies to gather nationally representative data in countries where prevalence is unknown.

The prevalence data are consistent with a recent analysis based on Demographic and Health Survey data from 54 countries,[6] in which the global pooled estimate of tobacco smoking prevalence during pregnancy was 1·3% (95% CI 0·9–1·8). However, although this analysis included a higher number of reporting countries than in the study by Lange and colleagues, it was restricted to low-income and middle-income countries. Nevertheless, the two datasets point to an important asymmetry between low-income and middle-income countries and high-income countries. Although the prevalence of smoking during pregnancy is lower in Africa and Asia than in Europe and the Americas, the proportional ratio of women who smoke during pregnancy and women who smoke in general was relatively higher in Africa and Asia. This could indicate that fewer women quit smoking when becoming pregnant in African and Asia than in Europe and the Americas, suggesting a general lack of awareness of tobacco-related harms during pregnancy and the reluctance of health-care staff in antenatal clinics to ask about tobacco use and advise on smoking cessation.

In recent years, the tobacco industry has been targeting young women through marketing campaigns, particularly in many low-income and middle-income countries. In some countries, smoking has become more common in young girls.[8] Effective media campaigns, including the use of social media, are needed to counter this trend and raise awareness in young women about the harms of tobacco use during pregnancy. Antenatal services also need to be primed to enquire about tobacco use status and advise on quitting, using a non-judgmental approach. Opt-out cessation services or routine use of carbon monoxide monitors to assess smoking status could increase the uptake of smoking cessation interventions and encourage more pregnant women to quit smoking. The clinical effectiveness, cost-effectiveness, feasibility, and acceptability of these approaches need further investigation.[9,10] Additionally, a substantial number of pregnant women are exposed to second-hand smoke, especially in countries with high smoking prevalence and poorly established smoke-free norms.[11] Efforts to reduce tobacco use during pregnancy should also address this exposure to second-hand smoke. The prevalence

of smokeless tobacco use during pregnancy should be explored in future studies. There is a need for surveillance systems that capture tobacco use during pregnancy. National surveys of pregnant women and routine data collected within maternal and child health services should include a minimal set of tobacco use questions to provide regular and accurate data on tobacco use.

In conclusion, Lange and colleagues make an important contribution to the scientific literature and a strong case for action to address smoking during pregnancy. However, there are still glaring gaps in research, policy, and practice on tobacco use and exposure surveillance. Effective ways of identifying smokers, increasing uptake of smoking cessation interventions, and improving quit rates in pregnant women who smoke are urgently needed.

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