

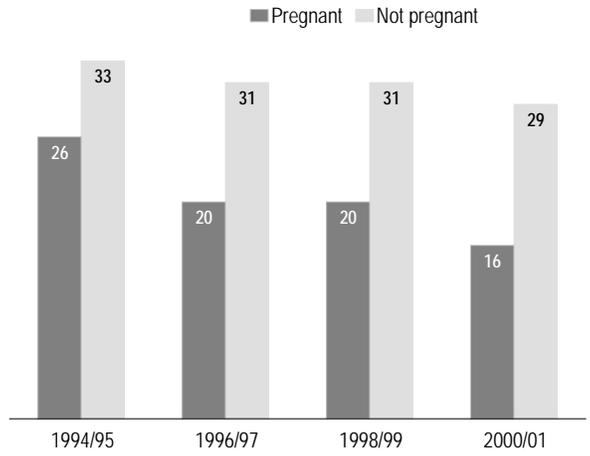
PREGNANCY AND SMOKING

Wayne J. Millar and Gerry Hill

In the second half of the 1990s, the overall smoking rate among women aged 15 to 49 dipped only slightly from 33% in 1994/95 to 29% in 2000/01. At the same time, the proportion of women who reported that they had smoked when they were pregnant dropped sharply, from 26% to 16%. This striking decline among pregnant women may reflect greater awareness of the adverse effects of smoking during pregnancy.^{1,2} However, levels of exposure to tobacco smoke are determined not only by personal smoking, but also by exposure to other smokers.

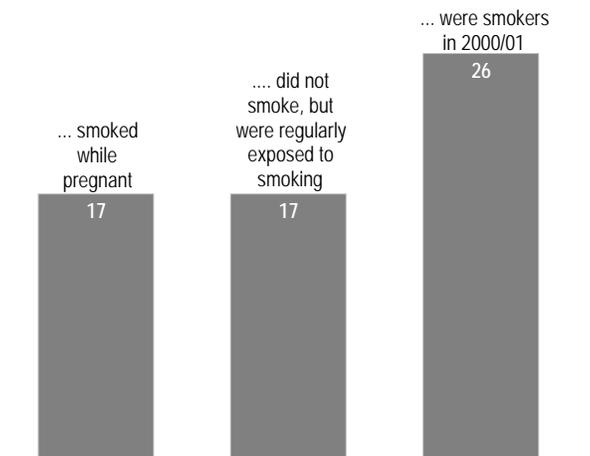
According to the 2000/01 Canadian Community Health Survey, an estimated 1.5 million women aged 15 to 54 had given birth in the previous five years. Seventeen percent of these women had smoked while they were pregnant. As well, 17% of those who did not smoke during their pregnancy had regularly been exposed to smoking at that time or soon after. In 2000/01, about a quarter (26%) of the women who had had a

Percentage of women aged 15 to 49 who smoke, 1994/95 to 2000/01



Data sources: 1994/95, 1996/97 and 1998/99 National Population Health Survey; 2000/01 Canadian Community Health Survey

Percentage of women aged 15 to 54 who had a baby in previous five years and who...



Data source: 2000/01 Canadian Community Health Survey

baby in the previous five years reported that they were smokers themselves.

Young, low income

The women most likely to smoke and to be exposed to smoking were younger than 25. A third of them had smoked while they were pregnant, and 36% who did not smoke themselves had been exposed to smoking. As well, in 2000/01, 49% of these young women reported that they were smokers. The comparable percentages were much lower among mothers aged 30 or older: 13% had smoked while they were pregnant, and 13% of those who had not smoked had been exposed to smoking. The proportion who reported that they were smokers in 2000/01 was 21%.

Socio-economic status

Smoking and exposure to smoking during and after pregnancy were more common among unmarried than married women. Socio-economic status also made a difference. Regardless of the measure—smoking while pregnant, regular exposure

to smoking, or current smoking—rates were about three times higher for women in the lowest income households than for those in the highest. Similarly, rates of smoking and exposure to smoking were highest among women who had not graduated from high school and lowest among those who were college/university graduates.

Provincial rates

The likelihood that women would smoke during and after pregnancy varied by province. Rates of smoking during pregnancy were significantly above the national level in Newfoundland, Prince Edward Island, New Brunswick, Québec and Saskatchewan. In 2000/01, significantly high proportions of women in Newfoundland, Prince Edward Island and Saskatchewan were smokers. In Ontario and British Columbia, rates of smoking during and after pregnancy were significantly low. As well, when they were pregnant, a significantly low proportion of women in British Columbia had regularly been exposed to smoking

Canadian, immigrant mothers

The difference between the smoking behaviour of immigrant and Canadian-born mothers was striking. Just 2% of immigrant women had smoked while they were pregnant, and 8% of those who had not smoked reported having been exposed to smoke;

Smoking exposure of women aged 15 to 54 who had a baby in previous five years

	Smoked while pregnant %	Did not smoke, but regularly exposed to smoking %	Smoker in 2000/01 %
Total	17	17	26
Age group			
Younger than 25	33*	36*	49*
25-29	19*	19	29
30-34	13*	15	21*
35+	14*	11*	21*
Marital status			
Married	14*	15*	22*
Unmarried	34*	30*	52*
Province			
Newfoundland and Labrador	26*	15	38*
Prince Edward Island	28*	17	36*
Nova Scotia	17	18	26
New Brunswick	23*	22	31
Québec	21*	19	29
Ontario	14*	16	24*
Manitoba	21	26	32
Saskatchewan	28*	22	38*
Alberta	19	19	27
British Columbia	14*	8*	23*
Household income			
Low	30*	32*	43*
Lower-middle	21*	20	29*
Upper-middle	16*	13*	25
High	8*	11*	15*
Missing	13*	22	24
Education			
Less than high school graduation	38*	34*	48*
High school graduation	22*	21*	33*
Some postsecondary	22*	27*	37*
College/University graduation	10*	11*	17*
Missing	F	F	F
Immigrant status			
Immigrant	2*	8*	8*
Non-immigrant	22*	18*	32*
Missing	F	F	F

Data source: 2000/01 Canadian Community Health Survey

Note: Because of rounding, detail may not add to totals.

* Significantly different from estimate for total ($p < 0.05$)

F Coefficient of variation greater than 33.3%

in 2000/01, 8% of these women were smokers. Rates were much higher among non-immigrant women: 22% had smoked while pregnant, 17% who did not smoke had been exposed to smoking, and 32% were smokers in 2000/01.

Starting/Resuming

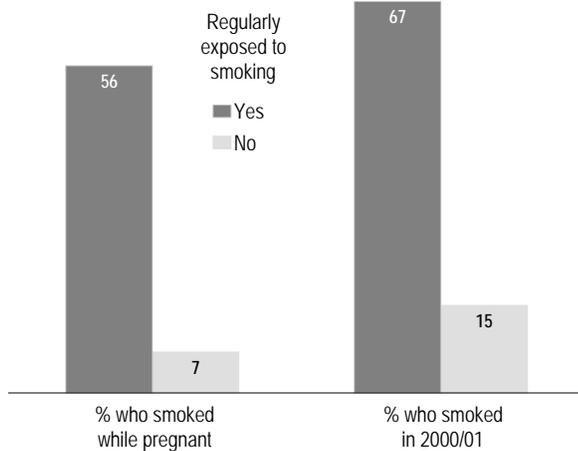
Among all groups of mothers, the percentage who reported smoking was higher after they had a baby than during pregnancy. For example, even among the women with the lowest smoking rates—older, married, well-educated, higher income—the proportion who smoked after the birth of their baby was higher than the proportion who smoked while they were pregnant. They may have made a conscious decision not to smoke during pregnancy because of potential adverse effects on the fetus. The higher prevalence of smoking after pregnancy suggests that women may be less knowledgeable about the risks of smoking to the health of young children.³⁻¹⁰

Influence of others?

The likelihood that a woman would smoke during and after pregnancy was associated with regular exposure to others' smoking. More than half (56%)

of women who had regularly been exposed to smoking also smoked when they were pregnant. This compared with 7% among women who did not report such exposure. As well, in 2000/01, of the women who had given birth in the previous five years, 67% who had regularly been exposed to smoking were themselves smokers, compared with 15% who had not been exposed to smoking.

Smoking behaviour of women aged 15 to 54 who had a baby in previous five years



Data source: 2000/01 Canadian Community Health Survey

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The Questions

Smoking status was determined by asking respondents if they smoked cigarettes daily, occasionally, or not at all. For this article, those who smoked cigarettes daily or occasionally were defined as "current smokers."

In the Canadian Community Health Survey, *exposure to smoking during and after pregnancy* was determined with the following questions:

- Did anyone regularly smoke in your presence during or after the pregnancy (about six months after)?
- Did you smoke during your last pregnancy?

In the National Population Health Survey, women aged 15 to 49 were asked if they were pregnant. Those who stated that they were pregnant and were currently smoking were defined as having smoked during pregnancy.

Data sources

Smoking and exposure to tobacco smoke at home during pregnancy and current smoking among women aged 15 to 54 who had given birth in the previous five years were estimated with data from the first cycle of Statistics Canada's **Canadian Community Health Survey (CCHS)**, conducted from September 2000 through October 2001.¹¹ The CCHS covers the population aged 12 or older who were living in private households at the time. It does not include residents of Indian reserves, Canadian Forces bases, or some remote areas. The overall response rate for cycle 1 was 85%; the total sample size was 131,535. This article is based on information about 7,614 women aged 15 to 54 who had had a baby in the previous five years, representing a population of 1.5 million.

Supplemental information is from the 1994/95, 1996/97 and 1998/99 **National Population Health Survey**.

All differences were tested to ensure statistical significance; that is, that they did not occur simply by chance. To account for survey design effects, standard errors and coefficients of variation were estimated using the bootstrap technique. A significance level of $p < 0.05$ was applied in all cases.¹²⁻¹⁴

Estimates of smoking during pregnancy may be low. The data refer to the woman's last pregnancy, which could have been as many as five years earlier. Some women may have had difficulty recalling their smoking behaviour, or may have been reluctant to admit having smoked while pregnant. The apparent decline in smoking among pregnant women since 1994/95 may also signal growing reluctance to admit to smoking during pregnancy rather than a true change in behaviour.

Responses to questions about smoking status in 2000/01 are not strictly comparable. Women who had given birth just before the interview would have had less time to resume or begin smoking than those whose child had been born several years earlier.

No information was collected about the type or number of cigarettes smoked or the number of other household members who smoked, which could affect levels of exposure. Nor is information available about the point at which women resumed or began smoking after giving birth. As well, the question about regular exposure to others' smoking refers to during or six months after the pregnancy. Therefore, it is possible that exposure did not occur while the woman was pregnant.

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