

## Has Canadian Contraceptive Use Really Declined?

The recent article by Kelly Martin and Zheng Wu [Contraceptive use in Canada: 1984–1995, 2000, 32(2): 65–73] stresses that contraceptive use in Canada underwent a steep decline in that 11-year period. In fact, protection by contraception and sterilization was stable, at a high level. The reported decline exists only when noncontraceptive sterilizations are eliminated in both 1984 and 1995. Since these were more numerous in 1995, there is an apparent decline; when they are restored, the decline disappears. In both years, 40% of all women were protected against pregnancy by sterilization (either of the woman or her male partner).

Contraceptive prevalence is generally considered to include sterilizations performed for whatever motivation, although it is useful to tabulate separately those done to avoid pregnancy from those done for medical reasons. However, the separation is not so clean, since sometimes the motivation is mixed, and sterilization for medical reasons serves both purposes. Without having had such a sterilization, many women would have been using some contraceptive method (including contraceptive sterilization).

Table 3 [p. 68] shows a decline in contraceptive use among married women, but when sterilizations for medical reasons are restored the decline disappears. Both a recent United Nations report<sup>1</sup> and Canadian tabulations<sup>2</sup> provide figures that include sterilization for medical reasons; these show levels of sterilization use of 43.5% in 1984 and 46.0% in 1995 among women in union (both partners), and total contraceptive prevalence of 73.1% and 75.2% in the two years.

Much of the article is thoughtful and useful, but inclusion of all sterilizations would have changed the distributions in Tables 3 and 4 for all use and for the method mix of use by detailed subgroups, and would have modified a good deal of the discus-

sion. It would also have altered the claim that Canada has one of the lowest rates of contraceptive use in the developed world.

There remains a puzzle regarding the ratio between tubal sterilizations and sterilizations for medical reasons in 1984 and 1995. They totaled nearly the same in the two years—31.1% of all women in 1984 and 29.8% of all women in 1995. However, in 1984, the ratio between them was 3.44, while in 1995 it was 1.38. A change of this magnitude is improbable, and it suggests that the questionnaire wording or coding may have been modified between the two years, besides whatever real changes occurred in surgical practice. This ambiguity lends force to the need to encompass all sterilizations in the analysis.

The article shows only a small decline in use of reversible methods (from 35.6% to 32.1%) among all women, which is surprising. Marriage behavior changed substantially in this 11-year period: Canada experienced a sharp, steady rise in the mean age at first marriage and a fall in the rate of first marriages at ages 15–24, implying some decline in cohabitation. That probably produced a real decline in contraceptive use among young single women, which would be more evident in statistics for them than for all women.

In any case, the article describes a decline that is easily misunderstood. By the usual measures, protection against pregnancy in Canada has remained steady, at one of the highest levels in the world.

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2. Norris D, Statistics Canada, personal communication, Feb. 12, 1998.

### *The authors reply:*

In contending that our research findings indicating a decline in contraceptive use are improbable and misleading, John Ross raises three questions: He suggests that individuals sterilized for medical reasons should not have been excluded from among contraceptive users, and that including them would raise contraceptive use; he questions the probability that tubal ligation has decreased to the point where the ratio to sterilizations for medical reasons has narrowed; and he suggests that the slight decline in reversible methods is unlikely, given changes in marriage patterns seen in Canada in the past decade.

We excluded sterilizations for medical reasons primarily because we wanted to present findings comparable to those from the first Canadian national fertility studies (by T.R. Balakrishnan and colleagues),<sup>1</sup> as well as to those of subsequent research in Canada (by researchers with Statistics Canada)<sup>2</sup> and in other developed countries.<sup>3</sup>

We used the same classifications for contraceptive status that were used by Balakrishnan and coauthors in their work with the 1984 Canadian Fertility Survey (CFS) data. They categorized women who reported having had a hysterectomy following a tubal ligation as tubal ligation, and considered them contraceptive users; those who had only a hysterectomy (or some other medical procedure) were classified as medically sterilized contraceptive nonusers.

While the 1995 General Social Survey (GSS) did not use the same wording as the 1984 CFS, we attempted to follow the classification scheme used in the CFS as closely as possible. In the GSS sample, respondents who reported that they had had the operation for contraceptive reasons were classified as having had a tubal ligation. Those who reported that the operation was for medical reasons were so classified, and

were not regarded as contraceptive users. Finally, those who reported having the operation for both reasons were classified as having had a tubal ligation, and were therefore classified as contraceptive users.

A similar classificatory approach was utilized in the two recent Statistics Canada reports using the 1995 GSS data. In one, men and women who were married or in a common-law union were combined into one couple sample, and individuals who had not been sterilized voluntarily were excluded as contraceptive users.<sup>4</sup> When the married and cohabiting sample for the 1995 GSS was compared to married women only from the 1984 CFS, the findings indicated a decline in tubal ligation from 42% in 1984 to only 30% in 1995, with a corresponding increase in vasectomy from 18% to 26%.

In the second report, these same categorizations of the 1995 GSS data were used in a study of overall contraceptive use.<sup>5</sup> Married and cohabiting men and women were combined into one couple sample, and sterilizations for medical reasons were again excluded. While this report cautions against potential problems because of wording differences between the two surveys, the findings indicate a similar increase in the proportion of respondents not using any method of contraception, from 25% in 1984 to 31% in 1995. (Again, the 1984 CFS sample included married women only.)

Another Canadian study that excluded sterilizations for medical reasons reported a steady decline in tubal ligation over the years 1993, 1995 and 1998.<sup>6</sup> Using a sample of women aged 15–44 of all marital statuses, the researchers found that tubal ligation declined from 16% in 1993 to 12% in 1995 and to only 10% in 1998. In contrast, vasectomies remained steady at 14% during the 1990s.

Ross claims that including sterilizations for medical reasons as contraceptive sterilizations would yield a total contraceptive prevalence of 73.1% for 1984 and 75.2% for 1995. This assertion is incorrect: While the proportion of contraceptive users among married women in 1984 was indeed 73.1% (as reported in the 1996 UN report cited by Ross), this figure came from the original Canadian study that did *not* include sterilizations for medical reasons as contraceptive use.<sup>7</sup> The corresponding figure for married women aged 18–49 practicing contraception in 1995 (also excluding sterilization for medical purposes) would then be 66.6%. Ross is correct, however, in stating that there is little difference in contraceptive use if ster-

ilizations for medical reasons are considered contraceptive for both years: Prevalence rates would then be 81.9% in 1984 and 81.6% in 1995.

When we examine women of all marital statuses, including sterilizations for medical reasons as a contraceptive measure would produce an overall prevalence rate of 75.5% in 1984 and 72.5% in 1995—only a slight decline. Nevertheless, Table 1 of our article shows that there still is an increase in the proportion not using any method, from 20.8% to 25.1% [p. 66]. Moreover, while the proportion of women reporting not using any method was higher in 1995 in every age-group, Table 2 shows that this disparity was largest among women older than 35 [p. 67].

Has contraceptive use declined in Canada? It depends on how one defines contraceptive use. Ross considers contraception to include sterilizations for medical reasons. We do not, and we are not alone. Besides the Canadian studies we have mentioned, a recent U.S. study reported contraceptive use levels among women of all marital statuses to have been 56% in 1982, 60% in 1988 and 64% in 1995.<sup>8</sup> These figures did not include medically sterilized women as contraceptive users, and were also reported in the 1996 UN report for 1982 and 1988.<sup>9</sup> Our corresponding figures of 69% in 1984 and 60% in 1995 clearly illustrate a decline in the voluntary use of contraceptives in Canada.

Ross's second concern is that the narrowing of the ratio between tubal ligation and sterilizations for medical reasons (from 3.44 in 1984 to 1.38 in 1995) seems unlikely, and that perhaps there is a discrepancy in the wording of the two surveys or in coding methods. We agree that the differences in the wording of the two surveys warrant caution in the interpretation of these findings, and we stressed this point in our paper, as did the authors of the other Canadian studies. However, the difference in the ratios may also be due to a number of factors, such as the age distributions of the samples and the education levels of women in the two time periods.

The increase in the proportion of women who reported having been sterilized for medical reasons in 1995 could be attributed to the higher proportion of women older than 35 in the 1995 GSS sample. In the 1984 sample, 39% of all women were aged 35–49, while the corresponding proportion in 1995 was 48%. The higher proportion in the 1995 sample no doubt reflects changes in Canada's age structure as the majority of baby boomers advance through middle age. Women older than

35 are more likely to have been sterilized for medical reasons; if younger women are becoming less inclined to choose tubal ligation in the 1990s, it is not surprising that the ratio has narrowed.

The decrease in the proportion of women opting for voluntary sterilization in the 1990s may also be due to women's increased levels of education during the past decade. Education is negatively related to the choice of tubal ligation<sup>10</sup> and is positively related to men's choice of vasectomy.<sup>11</sup> In the 1984 sample, only 36% of women had some postsecondary education, while in 1995, 62% of women had more than a high school education. The reduction in tubal ligation may result from women's increased education in the 1990s, which would also contribute to the narrowed ratio.

Finally, Ross suggests that a decline in the overall use of reversible contraception is a result of the decline in the proportion of the population that is cohabiting. Actually, the cohabiting population has not declined much in Canada: The decline in marriage has been compensated for, to a large degree, by the increase in nonmarital cohabitation. In other words, over the last two decades, the overall union rate has not declined much.<sup>12</sup>

We believe that including sterilization for medical reasons as a contraceptive method, and therefore considering it a voluntary behavioral choice, would have left our findings incomparable to similar studies of contraceptive use, both in Canada and in other developed countries. All research must take into account methodological issues; in our case, this included definitions of contraceptive measures, as well as social factors such as marriage behavior and population aging. Along these lines, we believe there is a need for standardization: Bringing these data issues forward may affect the future design of Canadian fertility surveys, and may ultimately produce more standardized classifications of contraceptive use. To truly judge population changes, we need to be able to replicate and compare research across studies. It is our hope that our study did both.

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## Understanding Pregnancy Intentions: A Problem In Evidence Everywhere

We read with interest a recent article by James Trussell and colleagues on contraceptive failures and unintended pregnancies [Are all contraceptive failures unintended pregnancies? evidence from the 1995 National Survey of Family Growth, 1999, 31(5):246–247 & 260] and the accompanying commentaries [31(5):248–253]. In Britain, too, we are grappling with the methodological challenges involved in measuring pregnancy intentions.

Earlier measures of pregnancy intentions developed by a number of researchers<sup>1</sup> tapped intentions, contraceptive use, reactions to pregnancy and plans for the timing of pregnancy. As was the case in the United States, these were included in large surveys aimed at assessing fertility, family formation and contraceptive use, and the questions were asked initially of married, and later of single, women, and usually about live births.

Inconsistency has also characterized most British attempts at measuring this concept. In one survey, of the 29% of women who reported having used a method of birth control around the time of conception, nearly a third were pleased to find themselves pregnant.<sup>2</sup> And in 1976, 61% of mothers reported intending to get pregnant and being pleased to be pregnant and just 14% reported using birth control and being sorry the pregnancy happened, yet

one in four reported reactions that were inconsistent with their actions.<sup>3</sup>

Since the earliest measures were developed, the situation has become more rather than less complex. At the time the questions were developed, sexual activity and birth more commonly occurred within marriage. The expectation that unplanned, unintended and unwanted births would decrease as women were provided with the tools with which to plan their pregnancy was reasonable. Only with current knowledge can we see that intentions, planning and decision-making around pregnancy (and hence measurement of pregnancy status) is likely to be more complicated—a situation surmised with some prescience more than a decade ago.<sup>4</sup>

Contraception is free to all through the National Health Service in Britain, regardless of age or socioeconomic status. Universal access to reliable contraception may have increased expectations of control over pregnancy for some. At the same time, however, contraceptive nonuse remains a feature of British sexual life for some women and couples.<sup>5</sup> Also, with a growing proportion of single, sexually active young women, more rather than less ambivalence is likely to surround attitudes toward pregnancy. The need for measures that tap affective states is now greater.

Since 1998, we have been carrying out research with the aim of producing a measure that is valid, reliable and acceptable in the context of demographic trends and social mores. In-depth interviews have been carried out with pregnant women, probing the circumstances of their pregnancies. From these data, we aim to develop a theoretical model of pregnancy status that will inform the construction of a quantitative measure, which we will then pilot-test and evaluate psychometrically. In collaboration with the Office for National Statistics, we hope to produce population estimates of unintended pregnancy in population subgroups and assess how the measure can be used in routine National Health Service statistics. In the meantime, we watch with interest progress toward improving the measurement of the concept of intention.

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