

Survey of population coverage in cervical cancer screening in the Oxford region

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SUMMARY. A postal survey of a random sample of 3307 women aged 18–64 years living in the Oxford region (the Oxford healthy life survey) revealed age and social class differences in the proportion of women reporting an up-to-date cervical smear test. Although 86% of women in the 25–34 years age group reported a test in the previous five years, the proportion dropped to 53% among the 55–64 year olds. Women in social classes 4 and 5 were significantly less likely to report a recent smear test ($P < 0.01$) than women in higher social classes. An audit of the general practice notes of 176 of the respondents suggested that these self-reported results are likely to be reasonably accurate.

A reduction in the number of deaths from cervical cancer will largely depend on the efforts of primary health care teams to screen women who are at relatively high risk of developing the disease, namely older women and those of lower social class.

Introduction

CERVICAL cancer screening programmes have been in existence in the UK for over 20 years and yet there is still no routine means of determining the proportion of the female population that has been screened.¹ Despite the fact that approximately 40 million smears have been performed during this period, the screening programmes appear to have been inefficient, having had only a small effect on the rates of death from cervical cancer.² The crux of the problem is the inadequate coverage of the high-risk population. Younger women have responded well to opportunistic screening, receiving regular smears from general practitioners and family planning or postnatal clinics, but the unsystematic programme has failed to reach many older women, despite the financial inducements for general practitioners to screen women aged over 35 years.

However, two recent developments make the outlook brighter. The first is that general practitioners are beginning to develop systematic screening programmes and there is growing interest in audit and performance review in primary care.³ The increasing use of age–sex registers, based on manual card indexes or computers, has made routine cervical screening in individual practices a feasible proposition⁴ and audits have demonstrated that high levels of coverage can be achieved.⁵

The second development is the 1985 directive from the Department of Health and Social Security⁶ instructing all health authorities to introduce computerized call and recall systems. In line with the recommendations of the Imperial Cancer Relief Fund Coordinating Committee on Cervical Screening,⁷ the DHSS is now asking district health authorities to provide funds

to allow family practitioner committees to develop cervical cytology systems based on the module developed by the Exeter Family Practitioner Services computer unit. All health authorities are now required to have a computerized system up and running by March 1988, although there is some doubt whether this will be achieved in all areas. Eventually this system will provide a means of monitoring the proportion of the population that has been screened and it will be possible to identify those women who have not responded to an invitation to attend for a smear test. However, the implementation of a successful call and recall system and the incorporation of historical records is a complex technical task,⁸ and it will be some time before each family practitioner committee has a computerized laboratory-linked system able to provide accurate records of the screening status of all women in a district. In the meantime there is a strong case for assessing the extent of coverage of screening in order to identify gaps and target action.

The healthy life survey, recently conducted in the Oxford region,⁹ collected information from a random sample of the population to assist with the planning and evaluation of the Oxford Regional Health Authority's health promotion programme. This paper presents the data on cervical screening obtained in this survey and describes an associated validation study designed to assess the reliability of this method of data collection.

Method

Main study

Extensive pilot studies of the questionnaire used in the healthy life survey were carried out before the questionnaire was mailed in 1985–86 to a stratified random sample of 4057 women aged 18–64 years living in five of the eight district health authorities in the Oxford region. Two sets of reminders were sent to non-respondents. In four of the districts general practice age–sex registers were used to obtain the random sample of patients and the questionnaire was sent with a covering letter signed by the patients' general practitioner. In the fifth district the patients' names were selected from the computerized family practitioner committee register and the accompanying letter came from a community physician in the district health authority. Respondents were asked to state whether they had had a cervical smear test within the past five years, more than five years ago, or never.

Validation study

In order to validate the responses to the questions on cervical screening the general practice notes of all the women selected from one practice known to keep efficient records were audited one year after the main study. The notes of those women who had had hysterectomies or who were under 20 years of age were excluded from the audit. The auditor (A.B.) had no prior knowledge of the questionnaire responses of individual patients in the practice. Once the audit was complete each record was checked against the information provided in the questionnaire to check how many times the questionnaire response and the notes concurred on whether or not the respondent had had a smear within the five years prior to the main study. The notes of the non-responders in this practice were also audited to assess the extent to which non-response might have biased the results.

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Results

Main study

Following the initial mailing and two reminders 3414 women responded to the questionnaire (response rate 84%). A total of 107 respondents were excluded because they were outside the eligible age range or failed to give their age, leaving 3307 women whose responses were analysed. The sample was reasonably representative of the social class distribution of the five districts as measured in the 1981 census.

All but 51 of the women answered the question on cervical screening status. Of these 3256 women, 72% said that they had had a smear test within the last five years, 13% said their last smear test was more than five years ago, 14% said they had never had a smear test and 1% answered 'don't know'.

As can be seen from Table 1, the proportion of women reporting a smear test within the last five years varied with age and social class. The proportion of women reporting a recent smear test reached 86% in the 25–34 years age group, but dropped to 53% among the 55–64 year olds. Women in the Registrar General's social classes 4 and 5 were the least likely to report a recent smear test and this social class trend was statistically significant ($\chi^2 = 35.5$, 1 df, $P < 0.01$).

The proportion of women reporting an up-to-date smear test in the district where the sample was selected from the family practitioner committee register was 73% which was not significantly different from the overall rate.

Validation study

The main study included a total of 250 women from the practice where the notes were audited. Of the questionnaires sent to these women 19 were returned by the post office marked 'gone away' and were therefore excluded from the validation study. Completed questionnaires were received from 212 of the 231 women, a response rate from this practice of 92%. One of the women who returned a completed questionnaire was excluded because she was outside the eligible age range.

By the time the validation study was conducted, one year after the initial mailing of the questionnaires, 16 respondents had either left the practice or their notes could not be traced, leaving 195 women for whom it was possible to make a comparison between questionnaire response and practice record. Eight women who had had hysterectomies and 11 women aged under 20 years were excluded, leaving a total of 176 women.

According to the notes of these 176 women, 151 (86%) had had a smear test within the previous five years. For 165 of the 176 women the evidence from the questionnaire matched that from the notes, an agreement rate of 94%. In the 11 cases where there was a discrepancy, four of the respondents said that they had an up-to-date smear result, but no smear result was recorded on the notes of three of them and the other had a smear test result recorded over five years ago. Six of the women said they had not had a smear test within the past five years whereas according to their notes they had, and one woman who did not know whether she had had a smear test had no record of one in her notes. These 11 women were evenly spread across the age range, five being aged 35 years or over and six under 35 years.

Of the 19 non-respondents in this practice sample five appeared to have left the practice and may not have received the questionnaire. The remaining 14 were concentrated in the oldest age group — nine were aged 50 years or over, three were in the age group 30–49 years and only two were under 30 years of age. According to the practice notes all but three of these women had had a smear test within the last five years. These three patients were all aged over 60 years and there was no record in their notes of their having had a smear test at any time.

Discussion

The method adopted here to validate self-reported cervical cytology histories is not without its drawbacks. A practice which had good records had to be selected for the exercise to be meaningful, but presumably because it is a well-organized practice it has an above-average screening rate. There were, therefore, fewer unscreened women in the validation sample than in the main study, and in that sense the practice was unrepresentative. Notwithstanding this the results demonstrate that a postal survey is a reasonably accurate means of assessing the population covered by cervical screening.

In the 6% of cases where there was a discrepancy between a woman's self-report and her notes there was a nearly equal proportion of over- and under-reporting suggesting that there is no systematic bias when this method is used as a monitoring tool. The questionnaire achieved a satisfactory response rate and there was no evidence that non-response biased the results.

The results of the main study appear to be valid and are therefore disturbing. They show that those women known to be most at risk of developing cervical cancer, that is, women over the age of 35 years and in particular those in lower social groups,¹⁰ were the least likely to have received a smear test in the five years prior to the survey.

Unfortunately the healthy life survey did not ask for hysterectomy status. It is likely that up to 20% of the women aged over 40 years will have had a hysterectomy,¹¹ thus decreasing the numbers at risk in the older age groups. However, this does not account for all of the shortfall in up-to-date smear tests and it appears that at least a third of those women most at risk had not been regularly screened.

Since most of the sample practices had age–sex registers and were therefore more likely to be operating cervical screening programmes than those without registers, these results may present a more favourable picture than an alternative method of sampling would have shown.¹² However, the rate of up-to-date smear tests in the district where sampling was from the family practitioner committee register was not significantly different from the overall rate.

Item-of-service payments were introduced in 1967 to encourage general practitioners to screen women over 35 years of age at five-yearly intervals. The findings reported here demonstrate that these inducements have failed to achieve their desired aim. So what has gone wrong? There are two possible explanations for the failure to screen older women: either practices have been unable or unwilling to devote the time and effort required to organize systematic call and recall programmes, or the ad-

Table 1. Percentage of women reporting that they had had a cervical smear test within the previous five years by age group and social class, with total number in group in parentheses.

Social class	18–24 years	25–34 years	35–44 years	45–54 years	55–64 years	All ages
1 and 2	70 (89)	90 (215)	90 (242)	74 (222)	60 (168)	79 (936)
3	67 (278)	86 (309)	83 (303)	78 (258)	54 (255)	74 (1403)
4 and 5	60 (111)	79 (98)	78 (105)	62 (107)	44 (110)	64 (531)
Unclassified	57 (84)	84 (63)	65 (63)	64 (70)	49 (106)	62 (386)
Total	64 (562)	86 (685)	83 (713)	73 (657)	53 (639)	72 (3256)

ministrative systems have been established but have failed to attract older women, particularly those in working class groups.

There is now evidence that organized screening programmes can achieve reductions in mortality from cervical cancer,¹³ so general practitioners should be convinced of the clinical need for such programmes. When the family practitioner committee-based computerized call and recall systems are fully operational some of the administrative burden will be removed from practices, but if levels of coverage are to be improved there will be a continuing need for primary care teams to make strenuous efforts to encourage older women to come forward for screening. Reports from practices which have achieved high levels of coverage⁵ are proof that it is possible to persuade older women of all social classes to be screened. It seems most unlikely that large numbers of women will refuse the offer of a cervical smear test when the need for the procedure is carefully explained and when it is offered at a time and place convenient to them, particularly if there is the option of having it performed by a female doctor or nurse. Studies have shown that 90% of all patients in the 35–64 years age group attend their doctor's surgery at least once in a five year period,¹⁴ so there is plenty of scope for personal follow-up of women who fail to respond to written invitations. Unless these efforts to screen older women are more successful than they have been hitherto, the death toll from cervical cancer will remain higher than it should be.

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