

Can health education increase uptake of cervical smear testing among Asian women?

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Abstract

Objectives—To determine the effects of three different methods of providing health education on the uptake of cervical smear testing among Asian women, and to evaluate the acceptability of different health education materials.

Design—Prospective cohort study over one year of effects of written materials by post, personal visit to give written materials, and personal visit to show a video on the uptake of smear testing. Techniques included a personally administered questionnaire.

Setting—Leicester, a city with a large Asian population.

Subjects—737 randomly selected Asian women aged 18 to 52 who were not recorded on the central cytology laboratory's computer as ever having had a cervical smear test. 159 declined to participate or were not contactable.

Interventions—Women were randomised into four groups: visited and shown a video (263), visited and shown a leaflet and fact sheet (219), posted a leaflet and fact sheet (131), not contacted at all (124).

Main outcome measure—Cervical smear test recorded on computer within four months after intervention.

Results—57 (37%, 26% of group) of the women visited and given leaflets and 80 (47%, 30% of group) shown the video attended for cervical smears. Only six (5%) of those who were not contacted and 14 (11%) of those sent leaflets had a smear test during the study.

Conclusion—Health education interventions increased the uptake of cervical cytology among Asian women in Leicester who had never been tested. Personal visits were most effective irrespective of the health education materials used, but there was some evidence that home viewed videos may be particularly effective in one of the most hard to reach groups: Urdu speaking, Pakistani Moslems. Written translated materials sent by post were ineffective.

Introduction

Cervical cancer is potentially one of the most preventable cancers. Unlike the case in many other cancers there is an easily detectable and normally prolonged premalignant phase.¹ International studies have shown that mortality from cervical cancer has fallen significantly in countries with well organised screening programmes, such as the United States,² Sweden,³ Italy,⁴ Iceland,⁵ and Canada.⁶ Strategies for reducing mortality from cervical cancer should include assessments of at least four main factors: the relevance of successes and failures elsewhere in the world, the rigidity of social barriers to the best performance, the potential for creative opportunities to reach the under-screened, and the commitment of policy makers to control cancer.⁷

There are several reasons why women developing invasive cervical cancer fail to have cancer detected at a preinvasive stage by screening.^{8,9} The commonest reason is that they have never been screened at all.¹⁰⁻¹⁵ In a study of 337 randomly selected Asian women in Leicester aged 16 to 50 we found that only 35% of at risk women had ever had a cervical smear test,¹⁶ a figure subsequently verified by cross checking with the cytology laboratory. This low uptake, about half that of the indigenous population, applied equally to all three main religious groups (Hindus, Moslems, and Sikhs). The main reasons given for never having had a cervical smear test related to lack of knowledge or awareness; factors that could be improved by health education.

We conducted a study to determine the effectiveness of three different methods of providing health education on the uptake of cervical smear tests among a random sample of Asian women in Leicester who had never had a smear test. The term "Asian" in this study refers to those who are of New Commonwealth and Pakistani ethnic origin or descent, including those from Bangladesh and east Africa. In Leicester 22% of the population are Asians,¹⁷ and in 1986 they accounted for a third of all births in the city.¹⁸

Subjects and methods

Three types of health education material were developed for the study: a video, a leaflet, and a fact sheet. The video was produced with the help of Leicestershire Health Authority's health education video unit, and consisted of a series of simple questions and answers concerning the cervical smear test accompanied by appropriate images and graphics. The video lasted about five minutes and versions were made with the sound track in English, Gujarati, Punjabi, Urdu, Hindi, and Bengali. A portable video recorder was purchased to enable the research assistant to show the video in subjects' homes. The leaflet was based on the Women's National Cancer Control Campaign's publication *Calling All Women*, which describes in strip cartoon format "The Cytotest—the early detection test for cervical cancer" in English, Gujarati, Punjabi, Urdu, Hindi, and Bengali. The fact sheet was based on information provided by the Women's National Cancer Control Campaign and North Tees district health education service. On one side of A4 paper it gave a series of questions and answers virtually identical to those on the video, including details of where to obtain a cervical smear test in Leicester. Fact sheets were prepared in English and the five Asian languages used in the video and the leaflet. The translations for all the Asian language versions of the video, leaflet, and fact sheet were done by volunteers from the Asian community in Leicester. All versions were translated back to English and checked by independent sources to ensure acceptability and accuracy.

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We used the same sample of women that we had used in our study on contraception.¹⁶ Briefly this was a one in 20 sample of women with Asian sounding names, aged between 16 and 50 on 1 April 1985 and registered with general practitioners having at least one surgery in Leicester drawn from the Leicestershire Family Practitioner Committee nominal index register. The information was updated by asking the women's general practitioners to check the names, dates of birth, and addresses on their medical record envelopes with those obtained from the family practitioner committee. Of the 1143 women whose personal details had been further verified by their general practitioners, 737 were not recorded on the central cytology laboratory's computer as having had a cervical smear up to 31 December 1986. This sample was drawn in February 1987 to allow for any cervical smears taken in late December but not submitted until January.

The final sample was stratified by age, religion, post-code area, and by participation in the previous study (either as respondents or non-respondents) and then divided into four groups. Two groups were visited personally and shown the video or the leaflet and fact sheet, one group was sent the leaflet and fact sheet by post, and the fourth group was not contacted at all. As women in the two groups that were visited had the option of declining to participate in the study numbers recruited to these two groups were increased to allow for a 50% non-response rate. The numbers in each group were chosen to be of sufficient size to allow detection of an increase in uptake of cervical smear tests of 10% with a probability of 0.8.¹⁹

The women in the two visited groups were sent bilingual letters explaining the purpose of the study and offering the women the chance to view health education materials in their homes in the presence of a research assistant. The research assistant visited seven to 10 days later and showed the video or leaflet and then administered a short questionnaire. After the interview each woman was left a fact sheet in English and her preferred language. When no one was at home letters were left, and up to two further visits and telephone calls were made to establish contact. All visits took place during April to November 1987. The interviews were conducted in the preferred language of the women, only 110 (34%) being in English. A methods card and checklists were used as appropriate. The interviews took place in a room of the woman's choice, and other family members were allowed to be present if requested (this occurred in 71 (22%) of the interviews). Nearly all the interviews lasted between 45 minutes and one hour.

Those who participated were not told the nature of the health education materials until they had agreed to take part, thus avoiding a selection bias in favour of the video or leaflet. Nevertheless, one unanticipated problem occurred. When informed that they were going to be shown a video a quarter (42) of the women requested that the video be left with them to view in their own time despite reassurances that the programme lasted only five minutes. This necessitated producing extra copies of each video and the research assistant had to administer the questionnaire when she returned to collect the video the next day.

The group receiving leaflets by post were sent the leaflet and a fact sheet in the appropriate language together with a covering letter advising attendance for a cervical smear test if one had not been taken before (for reasons of confidentiality it was not appropriate to reveal our knowledge of the woman's cervical smear state). These letters were sent out in batches over the eight months during which the interviews were taking place.

The outcome of the interventions was judged by checking the cytology laboratory computer to see if the

women had come forward for a cervical smear test. Checks were made two and four months after the final interview—that is, at the end of January and March 1988. The study was completed before a computerised call and recall system was introduced in April 1988.

During the study the research assistant had regular feedback sessions, which were recorded on video, to monitor her performance and to minimise the effects of observer bias. The questionnaires were analysed on Leicester University's VAX mainframe. Differences between groups were assessed by χ^2 analysis of two by two contingency tables with a continuity correction.

Results

In the video group only 22 women (8%) were not contactable after two letters, up to three visits, and telephone calls. Of those contacted 170 (71%) agreed to participate. The corresponding figures for the group visited and shown the leaflet were 18 (8%) and 153 (76%) respectively. Overall this was a response rate of 73%.

Of the 323 interviews, 114 were conducted in Gujarati, 110 in English, 59 in Punjabi, 33 in Urdu, and seven in Hindi. The main languages spoken at home were Gujarati (207 women), Punjabi (75), Urdu (36), Hindi (four), and Bengali (one), but 184 women admitted that they could read the language spoken only a little or hardly at all. Similarly, 165 could understand spoken English only a little or hardly at all. Half had spent 10 or more years in full time education, 84 four to nine years, and 51 less than four years. Most of the women (216) were aged under 35. Two hundred and thirty seven women were married, 40 were single, 20 engaged, 10 widowed, 10 separated, and six divorced; 139 of those who were or had been married lived with members of their husband's family and 229 had been pregnant at least once.

Of the women, 148 were born in India, 99 in Africa, 44 in Pakistan, 31 in the United Kingdom, and one in Bangladesh; 197 had lived in the United Kingdom for over 10 years and 223 had lived in Leicestershire for at least five years. Over half of the women were Hindus (191), 80 were Moslems, and 52 Sikhs. Although the proportions of the three main religious groups in the random sample corresponded very closely with those found in the survey of Leicester, among respondents there was an overrepresentation of Moslems. This probably reflects the fact that the research assistant who conducted all the interviews was a Moslem whose name is easily recognisable as being Moslem by other Asians.

The socioeconomic status based on husband's occupation was group I (10), group II (26), group III (65), group IV (84), group V (30), unemployed or unclassified (94), and students and trainees (14). The study population therefore comprised largely young married women born in India or east Africa, many of whom lived in extended families. Two hundred and twenty three women had a video recorder in the house.

Six (5%) of the control group, who were not contacted, subsequently had cervical smear tests compared with 14 (11%) of the group receiving leaflets by post ($\chi^2=3.014$, $df=1$; 95% confidence interval -2.3% to 14.1%). In the visited groups 80 (30%) of the video group (47% of those who actually viewed it) and 57 (26%) of the leaflet group (37% of those who actually read it) attended for cervical smears. There was no significant difference between the two groups ($\chi^2=1.132$, $df=1$; -3.6% to 12.4%). Within the video group 53 (41%) of those who viewed it with the research assistant attended for cervical cytology compared with 27 (64%) of those who watched it in their own time. All 157 cervical smears taken during the study were reported as being normal.

	Leaflet group (No (%))	Video game (No (%))		Leaflet group (No (%))	Video group (No (%))
Length			Appropriateness		
	Too long	8 (5) 38 (25) 97 (63) 10 (7)		2 (1) 96 (57) 48 (28) 24 (14)	Appropriate
			Interest:		
Too short				Interesting	89 (58) 17 (11) 124 (81) 17 (11) 3 (2)
Detail:			Usefulness:		
Too much	2 (1) 7 (5) 124 (81) 17 (11) 3 (2)	2 (1) 2 (1) 113 (67) 47 (28) 8 (5)		Not interesting	2 (1)
Understandability:			Personally useful		
	Too little			Personally useful	63 (41) 16 (10) 46 (30) 4 (3) 24 (16)
Easily understood	84 (55) 12 (8) 52 (34) 4 (3) 1 (1)	92 (54) 6 (3) 72 (42)	Not personally useful		
Not easily understood					

Visits to show the leaflet and fact sheet were two and a half times more effective than sending the same materials by post ($\chi^2=11.93$, $df=1$; 5.5% to 25.1%), and visits to show the video and fact sheet were nearly three times as effective as sending the leaflet and fact sheet by post ($\chi^2=18.74$, $df=1$; 10.8% to 28.7%). Analysis of difference among the four groups gave $\chi^2=44.8$, $df=3$; $p<0.0001$.

The time between the visit from the research assistant and having the cervical smear taken ranged from less than one week to 42 weeks (mean 13 weeks). There was no significant difference in the time interval between the groups shown the video and given the leaflet. Most of the women (320) had attended their general practitioners' surgeries as patients at least once in the preceding 12 months, 210 having been four or more times (range 0 to 15, mean 5.9 visits). Uptake of smear testing was not correlated with age or the number of years in full time education. Among the main religious groups, Hindus had a higher uptake (94, 49%) than Moslems (27, 34%), or Sikhs (16, 31%). Uptakes also varied with country of birth. None of these differences, however, were significant. Forty six (46%) women born in Africa and 14 (46%) born in the United Kingdom attended for smear test, compared with 64 (43%) of those born in India and 15 (34%) born in Pakistan (again not significant).

When asked what they thought of the video 122 (72%) made favourable comments, 46 (27%) neutral comments, and two (1%) did not know. Corresponding figures for the women given the leaflet were 89 (58%), 50 (33%), and 14 (9%) respectively. The table shows details of the views expressed on the content and presentation of the video and leaflet. One hundred and seventeen (69%) of the video group and 125 (82%) of the leaflet group could not suggest any improvements to be made to the materials they had viewed. The main suggestions relating to the video (52) were having the written graphics in the appropriate language script (24 women) and making it longer (20); those relating to the leaflet (27) were producing a colour (rather than black and white) version (13 women), spreading out the content more (seven), and specifying how often a cervical smear should be done (six).

Discussion

This study was conducted in only one city, and within the United Kingdom the composition of Asian communities varies considerably: what is true for Leicester may not necessarily hold for Bradford, Wolverhampton, or Southall. The crude incidence rate of cervical cancer in 1975 in the Indian subcontinent was 24 per 100 000 women,²⁰ one and a half times the current incidence in England and Wales. Within the Indian subcontinent it has been observed that Moslem

women are less prone to developing cervical cancer than Hindu women.^{21, 22} Information on the incidence of cervical cancer among Britain's Asians is limited and conflicting.²³⁻²⁵

The sample drawn for this study came from a sample drawn in 1985 for our contraception study.¹⁶ The 13% reduction in sample size (from 1315 to 1143) over 22 months is consistent with the high turnover of patients known to occur in urban and inner city practices.²⁶⁻²⁸ Indeed, a study in Derbyshire and Yorkshire showed that 40% of women change their address within five years after having a cervical smear test.²⁹

The cytology laboratory at Leicester Royal Infirmary processes all cervical smears taken from NHS patients in Leicester; virtually no cervical smears are reported privately (D C Bouch, personal communication). Pilot studies have indicated a high correlation between cervical cytology data held on the family practitioner committee computer and that on the Royal Infirmary's cytology laboratory computer (D C Bouch, personal communication). Of the 323 women interviewed, 317 (98%) confirmed that they had never had a cervical smear, four of the remaining six had had the test done before moving to Leicester and therefore were not recorded on the cytology laboratory computer. The final sample of 737 women was probably both representative and valid. The overall response rate of 73% was encouraging and was perhaps helped by the fact that many (198) of the women in the sample had taken part in the contraception study and had met the research assistant before. (The contraception study had a response rate of 69%.)

There was no significant difference between the leaflet and fact sheet by post group and the controls, and although the costs of posting such health education materials to a target audience are small, it is questionable whether such a poor response rate (10%) makes the effort worth while. Indeed, the response rate of those receiving the leaflet and fact sheet by post was poor compared with that found in many studies using postal invitations in predominantly non-Asian populations.³⁰ This highlights the ineffectiveness of this approach in Asian women.

Our findings are certainly consistent with the generally accepted view of health educationalists that personal instruction is the best form of education.³¹ The costs of providing such a service, however, would be prohibitive, unless efforts were targeted on women who had failed to respond to postal invitations. The introduction of computerised call and recall systems for cervical smear testing throughout the country means that such women could be identified and followed up, possibly by link workers.³² As there is evidence of a low uptake of cervical cytology amongst Asian women in other parts of the country,^{33, 34} efforts should be made to investigate the feasibility of such an approach.

Statistical analysis on the women in the visited groups who participated was not attempted because of the self selected nature of the population and the small numbers, especially in the video group. Nearly half of those who viewed the video subsequently had cervical smears compared with over one third of the leaflet group. Among the 42 women who viewed the video in their own time nearly two thirds (27) subsequently attended for cervical smear tests. Indeed 57% (24) said that they intended to have a cervical smear compared with 27% (35) of the women in the whole video group and 29% (44) in the leaflet group. Within this self selected subgroup there was an overrepresentation of Urdu speakers, Moslems, and women born in Pakistan, the three groups found to have the lowest uptakes of smear tests in our contraception study.¹⁶ Urdu speaking, Pakistani Moslems (mainly from the Mirpur and Punjab regions) probably constitute the

most conservative group of Asians in Leicester, and their overrepresentation in the subgroup with the highest overall uptake suggests that further efforts should be made to explore the use of home viewed videos.

The popularity of Asian films and high ownership of video recorders within the Asian community described in other studies,^{16 35 36} was confirmed in our study (69% of women had a video recorder in their homes). The video and booklet produced as a result of this study were prepared with a view to their being made available to individual women or women's groups for use at home. There may also be potential for similar videos to be distributed through neighbourhood video shops and for health education trailers to be added to commercial videos. More effort should be directed towards preparing video and written material for hard to reach groups, and different methods of personally delivering these should be further explored.

Appendix

The multilingual VHS video and booklet are available from the Health Education Video Unit, Clinical Sciences Building, Leicester Royal Infirmary, PO Box 65, Leicester LE2 7LX, price £20 exclusive of VAT; tel 0533-550461.

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ANY QUESTIONS

Is it ethical to prescribe β blockers for children and adults taking examinations?

If your obligation as a doctor is to produce net medical benefit over harm for your patient in the contexts of respect for the patient's autonomy and of justice it is usually morally acceptable to prescribe β blockers for patients whose anxiety in examinations impair their normal performance, especially through the somatic effects of anxiety. Why? The patient, understanding the issues, accepts the treatment, so his or her autonomy is respected. (In the case of children of inadequate autonomy it is the proper proxy, normally the parent, who would give understanding consent.) The treatment is prescribed only when the doctor, after investigation, has reason to believe that the risk of harm is negligible—that is, with usual attention to indications and contraindications—while the prospect of benefit by restoring normal function is great.

Thus net benefit over harm is reasonably expected. So far as justice is concerned there is no disproportionate use of scarce medical resources, no one's rights are overridden, and no morally acceptable law is broken.

Some people argue that justice is overridden because the competition of examinations is intended to be performed without medical help. Competitions are essentially matters of convention. It is thus up to the organisers of competitions and the performers in competitions to agree on the rules and stick to them. I do not think that organisers of examinations require examinations to be taken without the benefit of medical help. Thus it seems simply mistaken to believe that it is unjust or unfair for people to be given such medical help. What may be unjust or unfair is for patients whose performance is impaired by excessive anxiety to be denied medical help by doctors who mistakenly believe that it would be unfair to treat them.—RAANAN GILLON, *visiting professor in medical ethics, St Mary's Hospital Medical School*