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Sociodemographic and attitudinal correlates of cervical screening uptake in a national sample of women in Britain

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Abstract

Sociodemographic and attitudinal correlates of self-reported cervical screening uptake were investigated among 1307 women in the target age group who participated in two national surveys conducted in Britain in 1999. Evidence for inequalities in screening uptake was mixed. Of the socioeconomic indicators, only age of completed full-time education showed a significant effect in the multivariate analysis. The strong effects of car ownership and housing tenure in the univariate analyses were eliminated by controlling for marital status, which showed a robust association with uptake. Uptake was highest among married and separated women and lowest among single and widowed women. There was no evidence that the effects of marital status and education were mediated by the attitudinal variables. Anticipated embarrassment and attitudes to screening (e.g., "There's no point going for screening if you don't have any symptoms") were significant independent predictors of uptake. These findings suggest that information campaigns need to address feelings of embarrassment and lack of understanding of the rationale for screening and that efforts should be made to encourage single and widowed women to attend.

Keywords: Cervical screening; Socioeconomic status; Marital status; UK

Introduction

Mortality figures for the UK show a sharp gradient towards higher mortality from cervical cancer in women of lower socioeconomic status (SES) (Quinn, Babb, Brock, Kirby, & Jones, 2000). Socioeconomic differences in cervical screening uptake may be one factor contributing to this gradient (Wardle et al., 1999), and it is therefore important to investigate the extent of, and reasons for, such differences.

In the UK, the relationship between SES and cervical screening coverage or uptake has been examined at three different levels: health district (e.g., Baker & Middleton, 2003), general practice (e.g., Ibbotson, Wyke, McEwen, Macintyre, & Kelly, 1996) and individual (e.g., Coulter & Baldwin, 1987). This paper reports an individual level study that differed from previous studies in examining a range of indicators of SES, as well as other sociodemographic variables. In addition, we included measures of women's beliefs about cervical cancer and cervical screening and attitudes towards screening and health. The selection of variables was guided by the Health Belief Model (Janz & Becker, 1984) and by previous studies of cervical screening uptake (e.g., Bish, Sutton, & Golombok, 2000; Orbell, Crombie, & Johnston, 1996).

We hypothesised that any associations between sociodemographic variables and uptake would be explained

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at least in part by attitudes and beliefs. To our knowledge, the present study is the first to estimate the independent contributions of these different classes of variables to cervical screening uptake in a national sample of women in Britain.

Methods

Participants, design and procedure

Two similar surveys of adults aged 16 and over living in private households in Britain were conducted in March and May 1999 through the Office for National Statistics. The response rate to both surveys was 70%. There were 1469 women in the target age group for cervical screening (20–64 in England and Wales; 20–60 in Scotland). Analysis was restricted to the 1307 women who stated that they had not had a hysterectomy and who said whether or not they had had a smear test in the last 5 years.

Measures

(1) Sociodemographic factors: age; marital status; region; income; age completed full-time education; social class by occupation; employment status; number of cars; housing tenure.
(2) Attitudes and beliefs about cervical screening: perceived effectiveness of cervical screening; perceived risk of cervical cancer; worry about cervical cancer; anticipated embarrassment and pain.
(3) Attitudes to screening and health. Principal components analysis of responses to nine statements yielded three components. Component I reflected negative attitudes to screening (e.g., "There's no point going for screening if you don't have symptoms"); component II, attitudes to health ("It's better to live from day to day than to worry about what might happen in 10 years' time"); and component III, optimistic outlook ("Where my health's concerned, I'm always optimistic about my future").
(4) Whether or not the respondent had had a smear test in the last 5 years (1 = yes, 0 = no). This was derived from response to the question "When did you last have a smear test. Was it… Less than 3 years ago, 3–5 years ago, 6–10 years ago, or have you never had one?" Reported uptake was high (1200/1307; 92%).

Results

Five sociodemographic variables showed a significant association with uptake in univariate logistic regression analyses: age, marital status, age completed full-time education, number of cars and housing tenure (Table 1). Age showed a curvilinear effect. Of the attitude and belief variables, perceived effectiveness, anticipated pain and embarrassment, and the three attitudinal components were significantly associated with uptake.

In a multiple logistic regression analysis of the sociodemographic variables, only age, marital status and education were significant predictors. The attenuation of the effects of car access and housing tenure was due largely to controlling for marital status. The three significant demographic variables from this analysis together with the attitude and belief variables that were significant in the univariate analyses were entered in a multiple logistic regression analysis (Table 1). The significant predictors in this model were marital status, age completed full-time education, perceived effectiveness, anticipated embarrassment and the first attitudinal component. Apart from the attenuation of the age effect, there was little evidence that the effects of the sociodemographic variables were mediated by the attitudinal variables. It was possible to simplify the model without significant loss of fit by dropping the third attitudinal component and anticipated pain and representing anticipated embarrassment as a single degree of freedom linear component (model $\chi^2 = 104.83$, df = 18, $p < 0.0005$).

Discussion

This study had a number of limitations. First, it used a cross-sectional design. Second, although the response rate was quite high (70%), we had no information about non-responders. We therefore cannot rule out the possibility of selection bias. Non-responders may be of lower SES on average and may be less likely to attend for screening. Third, the measure of behaviour was based on self-report. It was not possible to verify self-reports against medical records. Strengths of the study are that it was based on a relatively large national sample and included a range of socioeconomic indicators.

Evidence for inequalities in screening uptake was mixed. Of the SES indicators, only education showed a significant effect in the multivariate analyses. The strong effects of car ownership and housing tenure in the univariate analyses were eliminated by controlling for marital status. By contrast, marital status itself showed a robust association with screening uptake (cf. Orbell et al., 1996). Marital status is related to sexual behaviours that are well-established risk factors for cervical cancer, in particular number of partners and age at first intercourse (Brinton, 1992). Thus, the women who were at lowest risk for cervical cancer (i.e., married women) had the highest uptake of cervical screening.