Original Research

Inequalities in uptake of breast cancer screening in Spain: analysis of a cross-sectional national survey

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SUMMARY

Objectives: Breast cancer remains a public health problem worldwide. Early detection through mammography practice has been shown to be effective in improving survival among women. Nevertheless, it is necessary to have high participation in mammography screening to achieve that goal. The aim of this study is to estimate the adherence to recommended preventive practices for breast cancer (mammography) in Spain and to identify predictors of uptake according to sociodemographic variables, health related variables and lifestyles.

Study design: This is a descriptive cross-sectional study based on data from the European Health Interview Survey for Spain. Breast cancer screening included self-reported mammography in the last two years.

The age target range was 40—69 years (*n* = 5771). The following independent variables were analysed: sociodemographic (marital status, educational level, monthly income, and nationality), visit to a general practitioner, chronic conditions and lifestyles. Predictors of mammography adherence were explored using multivariate logistic regression.

Results: The screening coverage in the target population was 67.7% (95% CI: 66.2—69.1). Mammography uptake was positively associated with being married, higher educational and income levels, Spanish nationality, having visited a general practitioner in the previous four weeks and suffering from musculoskeletal disease. Otherwise, the youngest age group studied (40—49 years) and obesity was associated with lower adherence to mammography.

Conclusions: Compliance with mammography practice in Spain is acceptable to achieve the goal of reducing mortality from breast cancer among women. However significant inequalities in uptake of breast screening in Spain were found. Future campaigns must aim to improve participation especially among women with disadvantaged socio-economic situations and immigrants.

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Introduction

Cancer is a leading cause of burden disease and mortality.[1] Deaths from cancer worldwide are projected to continue rising, with an estimated 12 million deaths in 2030.[2]

Breast cancer is the most common cancer in women, with an estimated 1,385,000 new cases and 458,400 deaths in 2008 worldwide.[3]

Although breast cancer occurs more frequently in developed countries due to demographic trends, it is increasing in most African and Asian countries. Thus, it is expected that more women will be confronted with this disease in the future in both developed and developing regions.[3]

Spain occupies an intermediate position in Europe with an incidence rate of 81.1 cases per 100,000 woman-year. On the other hand, mortality rates are among the lowest,[4] and since 1993 mortality due to breast cancer is decreasing annually by 2.4%.[5] This is partially due to early detection of breast cancer through mammography which, when linked to an appropriate treatment, is considered the most effective strategy for reducing breast cancer mortality.[6,7] Randomized trials have shown that mammography screening can reduce breast cancer mortality by 18%–30% for women aged 50–69 years.[6,7] For women aged 40–49 years there is moderate evidence that the net benefit is small.[8,9] These findings led to the implementation of population-based breast cancer prevention programmes through periodic mammography in many countries,[10,11] especially in developed countries (Europe, US and Canada), as mammography screening is expensive, and thus unfortunately not feasible in many developing countries.

Recommendations concerning breast cancer screening in our country are similar to those in other developed areas.[8] Spanish public health authorities provide a population-based breast cancer screening programme globally for all women aged 50–69, offering a biennial screening mammography free of charge.[12] However, in Spain some private health organizations and physicians recommend starting screening at 40 years of age.

It is important to consider that high rates of participation in these programmes are necessary to achieve the desirable reduction in mortality.[7] Consequently, it is relevant to investigate adherence to the screening recommendation and identify those factors which influence women to undergo screening. Previous Spanish studies[13–20] have explored this topic and reported variable adherence rates for mammography practice, appreciating greater participation in recent years. In other developed countries results are also variable, reaching a larger share of countries with population-based programmes implemented.[20,21]

Concerning predictors of mammography screening participation, sociodemographic factors have often been found to be associated with mammography practice. In particular, the lower participation of immigrant or minorities women is notable.[22] Likewise, certain self-declared chronic diseases as well as certain lifestyles are associated with screening attendance.[18,19] The aims of the current study are to estimate the adherence to recommended preventive practices for breast cancer (mammography) in Spain and to identify predictors of uptake according to sociodemographic variables, health related variables and lifestyles.

Methods

The present study is a cross-sectional study based on data obtained from the European Health Interview Survey for Spain (EHISS, 2009).[23]

The European Health Interview Survey (EHIS) was proposed by the European Commission to the European Union (EU) Member States in order to create a health information system through a comprehensive and coordinated set of surveys performed the EHIS was implemented every five years with the first wave being completed between 2007 and 2009.

The European Health Interview Survey for Spain (EHISS, 2009) was conducted by the National Statistics Institute (Instituto Nacional de Estadística, INE) under the aegis of the Spanish Ministry of Health & Social Affairs. The EHISS is a home-based personal interview with computer assistance examining a nationwide representative sample of the civilian, non-institutionalized population, aged 16 years or over and residing in main family dwellings (households) of Spain. More details of EHISS methodology are described elsewhere.[23]

The data collection period commenced in April 2009 and concluded in March 2010. The analysis was performed in May 2011. For the current study, women aged 40–69 years were selected.

The following dependent variable was created from the questionnaire:

1. Adherence to breast cancer screening: this was assessed by asking participants the date of their last mammography, which was then compared with the interview date. Women who had undergone a mammography during the past two years were classified as compliant with the screening test.

We also considered the following independent variables:

1. Sociodemographic variables including age, marital status (Single, Married, Widowed and Divorced/Separated), educational level, monthly income and immigrant status. Educational level was classified into primary, secondary or university studies; monthly income was divided into <1150€ and ≥1150€;
2. Visit to a general practitioner during the four weeks preceding the interview;
3. Self-reported chronic diseases, including cardiovascular diseases (heart attack, angina, stroke or cerebral haemorrhage), respiratory diseases (asthma or chronic bronchitis), musculoskeletal conditions (arthritis, cervical or low back chronic pain), psychiatric diseases (depression or anxiety), hypertension, and diabetes mellitus.

These variables were created from the answer 'Yes' or 'No' to the following questions: 'Have you suffered from any of the following diseases?' and 'Have you ever been diagnosed by a physician of these diseases?'. Only those who answered yes to both questions were classified as sufferers of the disease. Obesity was assessed from body mass index calculated from the self-reported body weight and height; an index ≥30 was classified as obese.