

The Effect of Patient Spanish Language Preference and Provider Fluency on the Utilization of Screening Mammography

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A. Study Purpose and Rationale

Breast cancer is the most common cause of non-skin cancer in women with an expected 211,240 new diagnoses of invasive breast cancer this year alone.¹ Reduction in mortality depends upon reliable screening and early detection. The strongest data for screening exists amongst women ages 50 to 69 where the risk of death from breast cancer is reduced by up to 30% with screening; however, the evidence is less clear in those women ages 40-49 and greater than 70.² Nonetheless, numerous organizations including the American Cancer Society, American College of Radiology, American Medical Association, and American College of Obstetrics and Gynecology recommend starting routine screening including mammography with or without clinical breast exam beginning at age 40.^{3,6}

Over that past decade, the United States has made incredible strides in the improving access to timely screening; however, there are still disparities amongst women.^{2,7} Those groups identified as having lower screening rates include those with low socioeconomic status, racial and ethnic minorities, elderly women, and those living in rural areas.⁷⁻¹¹ Additional factors found to be associated with decreased screening are the lack of either insurance or a designated primary care providers and the presence of chronic medical conditions.¹²⁻¹⁴ Studies evaluating individuals' participation in preventative care are continually attempting to further identify and define these variables.

Although recent trends suggest an improvement in preventative care and screening, there are numerous limitations to the current methods and organizations involved in the obtainment of this data. For example, often this information is obtained via telephone surveys or written surveys administered in English, with the obvious limitation of failing to reach those without a telephone and discouraging those whose primary language is not English. Additionally, the data that is recorded is often self-reported with prior evidence suggesting that often there is augmented self-report of screening measures amongst the low income ethnic minorities.^{2,15} With these limitations in mind, nonetheless, at present we seem to be closing the gap in access and utilization of screening.

Latino women have consistently been reported to have lower rates of screening, and in fact, are more likely to be diagnosed at a later stage and to die from their disease than their non-Latino counterparts.¹⁶ Studies set forth to determine what contributes to this disparity have identified many of the factors suggested above which have been found consistently across ethnicities."¹ However, within the Latino population, there has been additional interest in determining the effect acculturation upon receipt of screening with variable results.^{12,49} Amongst the indicators of acculturation, language is most often identified and many studies use language as the sole marker of acculturation. Jacobs et al²⁰ evaluated breast and cervical cancer screening in a

multiethnic population including Latino women and found language barriers to be associated with a decrease rate of screening independent of socioeconomic factors, United States nativity, or number of years residing in the United States. More recently, O'Malley et al.¹² evaluated the effect of acculturation, again solely defined by language, on the receipt of clinical breast exams and screening mammograms in Latin Americans in New York City. They also found that despite controlling for factors such as demographics, socioeconomics, and health care beliefs, women who were more highly acculturated (i.e. more fluent in English) utilized screening procedures more frequently. Current trends based on the 2000 Census data suggest that the issue of language concordance will continue to grow. In 2000, 18 percent of the population (47 million) of the United States reported that they spoke a language

other than English at home, up from 14 % in 1990 and 11% in 1980.²¹ Therefore, future investigation must focus on defining the role of language barriers in the receipt of health care and on institution of services and interventions to overcome them.

One way in which language barriers are managed within the health care setting is through the use of interpreters. Although it seems intuitive that by allowing an interpreter to assist in communicating with patients with limited English speaking ability the overall outcomes and delivery of care would improve, there have been few studies evaluating the effectiveness of interpreters. Jacobs et al.²² found that implementation of a professional interpreter service for both Portuguese and Spanish speaking patients improved receipt of both clinical and preventative services. However, other studies have suggested that the effects of interpreters is not truly adequate^{23,24}; in fact, Rivedeneyra et al.¹ found that patients were actually placed at a disadvantage within the encounter as they are unable to interact and make comments as they would normally and the comments that they did make were often not relayed to the provider.

The AIM clinic provides service to a predominantly Latin community in which Spanish is the primary language preference amongst most patients. Although there are numerous health care providers who are fluent in Spanish, there are additionally a large proportion of the providers who are minimally fluent and regularly utilize interpreter services to assist in patient communication. This study is being done to evaluate the receipt of screening mammograms amongst female patients with a Spanish language preference seen by either a Spanish fluent provider versus a provider who utilizes interpreter services. Ideally, the groups should be similar; however, it is possible that patients seen by a non-Spanish speaking provider are less likely to receive a screening mammogram due to further communication barriers that exist despite the presence of an interpreter.

B. Statistical Design and Analysis

This will be conducted as a retrospective observational cohort study which will determine the effect of having a fluent Spanish speaking primary care provider versus a provider who utilizes an interpreter on the receipt of screening mammogram over a 2 year period. Subjects will be selected from an AIM (Associates of Internal Medicine) mental health study II database based on inclusion/exclusion criteria (see below section: study subjects). This database is a systematic random sample of 1,157 patients that was obtained from waiting rooms of primary care providers within the AIM clinic and contains the patients' medical record number, age, gender, marital status, ethnicity, income level, insurance status, education level, and preferred language. The database additionally contains the provider type (i.e. resident, attending, nurse practitioner) and provider Spanish language fluency (i.e. provider completely fluent in Spanish vs. providers routinely uses interpreter services). Numerous other variables are available in this database but will not be utilized for the purpose of this study. Additional data will be obtained from patient medical records and computer data (WEBCIS) including number and type of chronic medical conditions (from a list of the most common chronic illnesses seen in AIM clinic including atrial fibrillation, congestive heart failure, coronary artery disease, hypertension, diabetes, hyperlipidemia, thyroid disorder, chronic obstructive pulmonary disease, tobacco use disorder, chronic liver disease, and gastroesophageal reflux disease). We will additionally calculate the number of office visits over a 2 year time period from 2003-2005.

Receipt of screening mammography during the 2 year period will be the primary outcome variable. The determination of this variable will be made based on a review of patients' medical records and WEBCIS records for mammography report. The presence of a Spanish fluent provider versus a provider who uses an interpreter will serve as the

predictor variable. The null hypothesis will be that there is no difference in receipt of screening mammograms between the two groups. The two sided alternative hypothesis will be that there is a difference in the receipt of screening mammograms between the two groups. To estimate the sample size we reviewed the literature and found that the National Cancer Institute reported the average percentage of Hispanic females receiving screening mammogram in the year 2000 to be 61.8%.² Using the chi-squared test and assuming that the control group would be those patients with a Spanish language preference who

were seen by Spanish fluent provider, we assumed a difference of 15% between the 2 groups to be significant. Thereby, a sample size of 186 women in both groups will be needed to detect a significant difference with a two-sided alpha of 0.05, beta of 0.20, and power of 80%.

Descriptive statistics will be used to describe baseline demographic data. Bivariate analysis will be carried out using chi-squared testing to evaluate the effect of age, income, insurance status, education level, number of chronic conditions and office visits on the primary outcome. Logistic regression will then be used to adjust for those covariates which in bivariate analysis were associated with a p-value of <0.10.

C. Study Procedures

Not applicable to this study as no experimental procedures will be performed.

D. Study Drugs

Not applicable to this study as no study drugs will be utilized.

E. Medical Device

Not applicable to this study as no medical devices will be utilized.

F. Study Questionnaires

Not applicable to this study as no questionnaires will be administered.

G. Study Subjects

The study will have the following inclusion criteria: female gender, age greater than or equal to 40, and having at least 2 clinic appointments with AIM providers over the 2 year course of study from 2003-2005. Patients excluded from the study include patients with a history of breast cancer or recently diagnosed breast cancer and those patients with prior abnormal screening mammograms within a 5 year period immediately preceding the study period.

H. Recruitment of subjects

Patient data will be analyzed from aforementioned database if they meet inclusion and exclusion criteria.

I. Confidentiality of Study Data

All patients included within the study will be given a unique code unrelated to any personal identifiers. All data will be stored in a secure location accessible only to the investigators.

J. Potential Conflict of Interest

There are no potential conflicts of interest related to this study.

K. Study Location

This retrospective study will evaluate patients seen at the Columbia Presbyterian Medical Center within the AIM clinic.

L. Potential risks

There are no possible risks to those participating in the study

M. Potential benefits

The data from patients used in this study will ultimately contribute to improving the rate of breast cancer screening within the AIM clinic by helping to identify which particular patient populations/characteristics are associated with lower rate of screening mammography.

N. Alternative therapies

There are no alternative therapies within this study.

O. Compensation to subjects

There will be no compensation for participation within this study.

P. Costs to subjects

Patients evaluated in this study will not incur any additional costs as a result of their involvement in the study.

Q. Minors as research subjects

This study does not involve the participation of minors

R. Radiation or radioactive substances

This study does not involve the use of any radiation or radioactive substances.

S. References

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