

**Breast Cancer Screening Guidelines Based on the
Woman's Education, Income, and Insurance**

BY

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THESIS

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I would like to dedicate this dissertation to my family. I would like to thank my parents Eric and Diane for instilling the importance of education and career development in me. I would also like to thank my brother Derrick for always being supportive of all of my endeavors and accomplishments.

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LIST OF ABBREVIATIONS

ACOG	American Congress of Obstetricians and Gynecologists
ACP	American College of Physicians
ACS	American Cancer Society
APN	Advanced Practice Nurse
BRFSS	Behavioral Risk Factor Surveillance System
BSE	Breast Self-Examination
CBE	Clinical Breast Examination
CDC	Centers for Disease Control
IBCCP	Illinois Breast and Cervical Cancer Program
IRB	Institutional Review Board
MSN	Master of Science in Nursing
NBCCEDP	National Breast and Cervical Cancer Early Detection Program
NCI	National Cancer Institute
NCHS	National Center for Health Statistics
NHIS	National Health Interview Survey
NIH	National Institutes of Health
Ob/Gyn	Obstetrician/Gynecologist
PCP	Primary Care Provider
SES	Socioeconomic Status
USPSTF	United States Preventive Services Task Force

SUMMARY

Women who have less than a high school education, who are low- income, or have no health insurance are the least likely to participate in a recent mammogram. A qualitative descriptive research design was used to interview physicians and advanced practice nurses to examine what guidelines and criteria were used to screen women of different education, income, and insurance statuses. The sample included 10 physicians and 10 advanced practice nurses from obstetrics and gynecology and family practice specialty. Five physicians were obstetricians/gynecologists, and five were family practice physicians. The advanced practice nurses include seven obstetrics/gynecology advanced practice nurses and three family practice nurses. Seven (70%) of the physicians reported using United States Preventive Services Task Force guidelines, while six (60%) of the advanced practice nurses reported using American Cancer Society's guidelines. No response related to general criteria or personal judgment was reported by 50% of the sample. Fourteen (70%) of the 20 participants reported that they would not screen a woman differently based on education. Fourteen (70%) of the participants reported that they would refer and/or give resources to a woman who does not have any insurance. Eleven (55%) of the 20 participants reported that there was no difference in how they would screen low-income women compared to high-income women. The findings of this study indicate that healthcare providers used guidelines albeit different ones by physicians and the advanced practice nurses. The findings also indicate that healthcare providers do not screen women differently based on education and income. Healthcare providers need to realize that they have a key role in becoming more vigilant in increasing mammography utilization among less educated, low-income, and uninsured women.

I. INTRODUCTION

A. Statement of Problem and Significance

Women who have less than a high school education, no health insurance, or recent immigrant status are less likely to have participated in a recent mammogram (American Cancer Society, [ACS], 2011). Furthermore, low-income women are less likely to have had a mammogram within the past two years compared to women who are at or above the poverty level, and recent declines in mammogram usage have been greater among poorer women (ACS, 2011). Women with a college education had 74.6% participation in mammogram usage in the last two years compared to 51.7% of women with less than a high school education (ACS, 2011). Women who had health insurance had 71.7% of participation in mammogram usage within the past two years compared to 31.5% of women with no insurance (ACS, 2011). Lower socioeconomic status (SES) is a consistent marker for mammography underuse. Compared to their middle-class and wealthy counterparts, low-income women have the lowest rates of breast cancer screening, even when adjusted for race, ethnicity, and insurance status (Peek & Han, 2004).

Screening and early detection include routine mammograms and clinical breast examinations (CBEs). Both can detect breast cancer early and provide women with better treatment options. Breast cancer is more easily treated if found early (Phillips & Underwood, 2009). If breast cancer is detected early, there is a 99% survival rate, in comparison to 23% when it is detected later (ACS, 2011). Therefore, it is imperative that women seek breast cancer screening in a timely manner, especially those of lower socioeconomic status or with no insurance.

The American Cancer Society (ACS, 2011) recommends women aged 40 and over obtain mammograms and clinical breast exams yearly, and women 18-39 have clinical breast examinations every 3 years and perform monthly breast self-examinations (BSEs) starting at age 18. However, the U.S. Preventive Services Task Force (USPSTF) recommends against routine screening mammography for women aged 40-49, but recommends biennial screening mammography for women aged 50-74, and suggests that current evidence is insufficient to assess the additional benefits and harms of examination, and recommends against teaching BSE (Henley, King, German, Richardson, & Plescia, 2010; Smith, Cokkinides, Brooks, Saslow, & Brawley, 2010; U.S. Preventive Services Task Force [USPSTF], 2009). The National Breast Cancer Coalition (2010) also upheld the revised recommendations of the USPSTF. The American College of Physicians (ACP) stated that providers should periodically perform individual risk assessments of women aged 40-49 for breast cancer to guide decisions regarding screening mammography (American College of Physicians [ACP], 2007; Qaseem et al., 2007). Susan G. Komen for the cure (an organization called herein simply "Susan G. Komen") recommends mammograms every year beginning at age 40 and clinical breast exams at least every 3 years at age 20-39 (Susan G. Komen, 2010). The National Cancer Institute (NCI) recommends mammograms every 1-2 years beginning at age 40 and has no recommendation for clinical breast exams (National Cancer Institute [NCI], 2010). The American Congress of Obstetricians and Gynecologists (ACOG, 2011) recommends mammograms every year beginning at age 40 and clinical breast exams at least every 1-3 years ages 20-39 and every year beginning at age 40 (see Table I).

TABLE I
BREAST CANCER SCREENING RECOMMENDATIONS FROM
FIVE HEALTHCARE ORGANIZATIONS

	American Cancer Society	American Congress of Obstetricians and Gynecologists	National Cancer Institute	Susan G. Komen for the Cure	U.S. Preventive Services Task Force	
Mammography Frequency	Every year beginning at age 40.	Every year beginning at age 40.	Every 1-2 years beginning at age 40.	Every 1-2 years beginning at age 40..	Every two years beginning at age 50-74.	There is no consensus with U.S. Preventive Services Task Force.
Clinical Breast Exam (CBE) Frequency (Age 20-39)	At least every 3 years ages 20-39.	At least every 1-3 years ages 20-39.	No specific recommendation.	At least every 3 years ages 20-39.	Clinical evidence insufficient to recommend for or against.	There is no consensus for CBE among the five.
(Age 40)	Every year beginning at age 40.	Every year beginning at age 40.	No specific recommendation.	Every year beginning at age 40.	Clinical evidence insufficient to recommend for or against.	

Women's health physicians and advanced nurse practitioners can play an important role in communicating and educating about the importance of breast cancer screening. Their instructions for performing breast cancer screening may increase breast cancer screening rates (Peek, Sayad, & Markwardt, 2008; Wallace, McKenzie, & Weeks, 2006). Therefore, physicians should educate patients about what to expect during breast cancer screening (Peek et al., 2008). It is imperative that physicians recognize the importance of discussing mammogram screening with their patients and make the appropriate referrals for screening (Davis, Emerson, & Husaini, 2005). The literature also suggests that physicians who perform breast examinations during clinical preventive visits are more likely to prescribe mammography (Cummings, Whetstone, Shende, & Weismiller, 2000; McGreevy, Baron, & Hoel, 2002; Wallace et al., 2006), and their recommendation during an office visit is critical in overcoming factors that predict non-compliance for mammography screening (Wallace et al., 2006). Efficient patient-provider communication can encourage women to stay on schedule for cancer screening (Politi, Clark, Rogers, McGarry, & Sciamanna, 2008). It is of vital importance that healthcare providers communicate the potential benefits of screening in order for the women to make informed decisions.

There is evidence that suggests that patients' demographic characteristics have an impact on physician behavior during medical encounters (Bao, Fox, & Escarce, 2007; van Ryn & Burke, 2000). Physicians' perceptions of patients may vary systematically by patient race, SES, education, income, and insurance status (Bao et al., 2007; van Ryn & Burke, 2000). Physicians may change their clinical management decisions based on a patient's SES. Bernheim, Ross, Kruholand, and Bradley (2008) found that physicians do not always maintain the ideal standard of care when faced with caring for patients of lower SES. Physicians tend to provide care

according to what they believed to be appropriate given a patient's SES. van Ryn and Burke (2000) found that physicians rated African-Americans as less intelligent and less educated than Caucasians, and gave lower SES patients more negative ratings on personality characteristics such as self-control and irrationality. These findings may affect quality of care for African-American and lower SES patients. There is a lack of research that examines how physicians' screening recommendations are influenced by the patient's race or SES. This lack of research creates a critical gap in understanding how a patient's demographic characteristics influence healthcare providers' decision-making process.

There is very little understanding about how healthcare providers' decision-making for breast cancer screening is influenced by the patient's demographic characteristics. However, Bao, Fox, and Escarce (2007) found that low SES patients were less likely to discuss cancer screening with physicians than were higher SES patients. As for mammography, the rate of discussion doubled for college graduates in comparison to patients with less than a high school education (Bao et al., 2007). In addition, little is known about how healthcare providers determine to adhere to ACS, USPSTF, ACP, Susan G. Komen, or NCI guidelines based on specific patients' characteristics and demographics.

There is little consensus on when women should be screened for breast cancer among these different cancer organizations. A breast cancer screening disparity exists among the low-income women, less educated women, and women with no insurance. There is a lack of research examining how healthcare providers decide which guidelines to follow.

To better understand the unique factors that influence healthcare providers' decision-making process in promoting breast cancer screening for low-income women, less educated women, and women with no insurance, it is necessary to obtain an in-depth perspective of the

factors that influence healthcare providers' breast cancer screening decisions. This pertinent information can help focus on factors that may be deterring women from screening.

B. Purpose of the Study

The purpose of the study is to examine which breast cancer screening guidelines do healthcare providers currently use and what criteria influence healthcare providers' decisions for breast cancer screening of women from different education, income, and insurance status. Thoroughly examining the decision-making process of healthcare providers will provide a better understanding of the screening process, and their decisions based upon patients' specific demographics. A qualitative descriptive approach was used for the purpose of describing in-depth the decision-making process of healthcare providers (Polit & Beck, 2006).

C. Research Questions

What breast cancer screening guidelines do healthcare providers currently use?

What other criteria do healthcare providers use to adapt their guidelines based upon the woman's education, income, and insurance status?

D. Operational Definitions

Breast cancer screening is to examine a woman's breast for cancer before there are signs or symptoms of disease.

Breast cancer screening guidelines is the formal protocol that healthcare providers follow to screen women for breast cancer.

Breast self-examination is a woman examining her own breast for lumps or any other physical changes.

Clinical breast examination is a physician or nurse examining a women's breast for lumps or any other physical changes.

Criteria: Other rules or principles used to screen women for breast cancer.

Early detection is to provide breast cancer screening and diagnostics services before the presence of signs and symptoms of disease.

Education: The degree or level of schooling.

Healthcare provider is a physician in woman's health or family practice physician or an advanced practice nurse in woman's health or family practice physician.

Guidelines in this study included: The ACS-specific guidelines are for women to be screened by mammography every year beginning at age 40, clinical breast exams annually beginning at age 40 and every three years at ages 18-39, and BSEs beginning at age 18. The USPSTF recommends biennial screening mammography for women aged 50-74, concludes that current evidence is insufficient to assess the additional benefits and harms of clinical breast examination, and recommends against teaching BSE. The National Breast Cancer Coalition upholds the revised recommendations of the USPSTF. The ACP state that providers should periodically perform individual risk assessments of women aged 40-49 for breast cancer to guide decisions regarding screening mammography. Susan G. Komen recommends mammograms every year beginning at age 40 and clinical breast exams at least every 3 years at age 20-39 and every year beginning at age 40. The NCI recommends mammograms every 1-2 years beginning at age 40 and has no recommends for clinical breast exams. ACOG recommends mammograms every year beginning at age 40, clinical breast exams at least every 1-3 years ages 20-39 and every year at age 40.

Incidence is the number of new cases of breast cases in a specific time period.

Income: The amount of funds received to cover living cost.

Insurance: Coverage for healthcare.

Lower socio-economic status is to be below the average economic and social factors such as education, income, and insurance.

Mammography is an x-ray of the breast.

Personal Judgment: The act of using one's own opinions to determine how to screen women for breast cancer.

II. LITERATURE REVIEW

A. Epidemiology of Breast Cancer

Breast cancer is the most common cancer among women, accounting for 1 in 3 cancers diagnosed in the United States (ACS, 2011). According to the ACS, 1 in 8 women will be diagnosed with cancer in her lifetime (ACS, 2011). In 2009 in the United States, there were an estimated 192,370 cases of new breast cancers, and an estimated 7,610 new cases in the state of Illinois (ACS, 2009). In 2011, the numbers increased to an estimated 229,060 new cases in the United States and an estimated 9,090 new cases in Illinois (ACS, 2012). In Illinois, the total population is 12,785, 043. Women constitute 6,493,705 of the total population (US Census Bureau, 2009). In Illinois, 81.4% of the population constitutes high school graduates, and 26.1% of the population constitutes college graduates (US Census Bureau, 2009). In 2008, Illinois had 12.2% population living in poverty (US Census Bureau, 2009). In 2008, Illinois had 7.7% Caucasians, 27.4% African Americans, 8.8% Asians, and 17.5% Hispanics in poverty (Heartland Alliance, 2010).

The incidence rate is substantially lower in African American women in comparison to Caucasian women over the age of 40; however, African American women account for 32.4% of breast cancer mortality, while the mortality rate for Caucasian women is 23.9% (ACS, 2011). The high mortality rates of African American women have been attributed in part to discrepancies in screening between African American and Caucasian women (Bowie, Wells, Juon, Sydnor, & Rodriguez, 2008; Davis et al., 2005). Additionally, African American women's mortality rates from breast cancer surpass those of other racial and ethnic minorities, including Asian and Pacific Islanders, American Indians, and Hispanics (ACS, 2011; Davis et al., 2005; Simon, 2006). Despite substantial improvements in the last two decades in mammography

screening, African American women are experiencing later discovery and premature deaths attributed to breast cancer (Fowler, 2006). Furthermore, for women under 40, the incidence of breast cancer is actually higher among African Americans than Caucasians (ACS, 2011; Powe & Cooper, 2008). For African American women, the incidence rates have increased since 1992 (ACS, 2009). Since 2004, the incidence rate for Caucasian women has remained steady but increased in African American women by 2.0% per year (ACS, 2012). There was a decrease in the incidence of breast cancer for women age 50 and older from 1999-2005; afterwards, the rates stabilized. A decrease in incidence rates may be attributed to higher mammography screening and decreased use of hormone replacement therapy (ACS, 2011). The mortality rates from 1998-2007 declined by 1.8% for Caucasian women compared to 0.8% for African American women (ACS, 2011). The decrease has been attributed to improvements in breast cancer treatment and early detection (ACS, 2011; Berry et al., 2005).

Women with lower income have a lower five-year survival rate than women of higher income at every stage of disease (ACS, 2011; Harper, Lynch, Meersman, Breen, Davis, & Reichman, 2009). The presence of additional illnesses, lower SES, equal access to medical care, and disparities in treatment may contribute to the differences in five-year survival rates between lower and higher income women and between African American and Caucasian women (Joslyn, 2002; Newman, Griffith, Jatoi, Simon, Crowe, & Coldwitz, 2006; Shavers & Brown, 2002; Tammemagi, Nerenz, Neslund-Dudas, Feldkamp, & Nathanson, 2005).

Campbell, Li, Dolecek, Barrett, Weaver, and Warnecke (2009) conducted a review of the Illinois Cancer Registry to determine if race, ethnicity, or SES impacted stage of breast cancer diagnosed. They reviewed 30,190 breast cancer cases in Cook County, Illinois for age, ethnicity, rate, socio-economic status, and stage of diagnosis. Campbell et al. (2009) found that regardless

of race or ethnicity, poverty status had a strong effect on being diagnosed at a later stage of disease.

Kim and Jang (2008) described trends in the socioeconomic disparities in breast cancer screening among U.S. women aged 40 or over, during years 2000 to 2005. They assessed the disparities in each socioeconomic dimension; the changes in screening mammography rates over time according to income, education, and race; and the sizes and trends of the disparities over time by using data from the Behavioral Risk Factor Surveillance System (BRFSS) from 2000 to 2005. They calculated the age-adjusted screening rate according to relative household income, education level, health insurance, and race. They found that women in their 40s and those with lower relative incomes were less likely to undergo screening mammography.

B. **Breast Cancer Screening**

Although mammography screening rates have been improving for women below the poverty level, women of low-income status are still less likely to have received a mammogram in comparison to women at or above the poverty level (ACS, 2011). Breast cancer screening means checking for breast cancer before any signs or symptoms of the disease develop (Centers for Disease Control and Prevention [CDC], 2009). Screening can help detect cancer at an early stage. It has been suggested that women receive breast cancer screening as an early prevention strategy to help detect cancer to prevent premature deaths (American Cancer Society [ACS], 2011). If abnormal tissues or cancers are found early, treatment may be easier (NIH, 2009). The three types of breast cancer screening tests are: mammography, clinical breast examination (CBE), and breast self-examination (BSE). Mammograms may detect tumors that are too small to feel. Mammograms may also detect ductal carcinoma and abnormal cells in the lining of the breast ducts that can cause invasive cancer (NIH, 2009). The ability of a mammogram to

accurately detect breast cancer depends on the size of the tumor, density of the breast, and expertise of the radiologist (NIH, 2009). Having regular mammograms can help to lower the risk from dying from breast cancer (CDC, 2009). It is recommended by some that women 40 years of age and older have a mammogram every year (ACS, 2011). Clinical breast examinations Clinical breast examinations are recommended by several healthcare organizations every three years for ages 20-39 and every year for age 40 and older. Some major healthcare organizations do not have a stance for recommending CBEs. It is recommended by some that BSEs be performed monthly (ACS, 2011).

The ACS (2011) recommends CBEs for average-risk, asymptomatic women, ages 20-39 years every three years as part of their regular health exam. According to USPSTF, annual CBEs should be performed as a complement to mammography for women age 40 and over. The USPSTF concludes that current evidence is insufficient to assess the additional benefits and harms of examination (USPSTF, 2009). Susan G. Komen recommends CBEs at least every three years at ages 20-39 and every year beginning at age 40. The NCI (2010) has no recommendations for clinical breast exams. A small percentage of breast cancer can be missed by mammography. Therefore, it can be beneficial for women to have a CBE shortly before their routine mammogram (ACS, 2011).

Breast self-examinations can be performed by women of any age to help detect lumps. Women who perform BSEs should have their technique critiqued by a healthcare professional who performs CBEs (ACS, 2011). It is recommended that any changes in the breast or lumps detected should be followed up by a mammogram (ACS, 2011). However, UTPSTF (2009) recommends against teaching BSEs.

Numerous randomized trials and population-based surveys have suggested that early detection through mammography greatly improves treatment options, successful treatment, and survival (ACS, 2007; Humphrey, Helfand, Chan, & Woolf 2002; Tabar, Yen, Vitak, Chen, Smith, & Duffy, 2003). Mammography is a low-dose radiation x-ray procedure that allows for a visual view of the breasts' internal structures. Mammography can detect 80-90% of breast cancer of women who are asymptomatic (ACS, 2009). The recommended screening intervals for mammography are based on the duration of time that breast cancer is detectable before symptoms develop (ACS, 2009). Studies have shown that breast cancers are often diagnosed as larger, more advanced cancer because too much time has often elapsed between the last known normal mammogram (ACS, 2007; Michaelson et al., 2002; Taplin et al., 2004). Mammography is the single most reliable and accurate form of screening for breast cancer because a mammogram can detect cancer several years before physical symptoms may develop (ACS, 2007). The State of Illinois still has a lower participation for mammogram screening in comparison to states such as Rhode Island, Delaware, and Connecticut (ACS, 2011). Women with no health coverage are the least likely to participate in mammogram screening (ACS, 2011).

In 2003, Illinois implemented the Illinois Breast and Cervical Cancer Program (IBCCP). This program launched a statewide enrollment campaign targeting African American, rural, and Hispanic women aged 50 to 64 (CDC, 2004). The program was highly interactive and incorporated mass media and face-to-face communication encouraging women to take charge of their own health (CDC, 2004). To increase awareness, the following tactics were used: radio advertisement, coalition building, faith-based outreach, peer advocate programs, and enrollment day events. Direct mail and radio advertisements were the most successful strategies used in the campaign (CDC, 2004). Direct mailings contained a toll-free women's-health line number for

women to call for referrals and a postage-free reply card. The radio advertisement also gave the toll free number. With these two strategies, more than 2,200 referrals were made (CDC, 2004). As a result, 4,500 women contacted the program over a 9-month period. Overall, there was a 49% increase in enrollment and a 48% increase in enrollment for racial and ethnic minority women (CDC, 2004). In 2006, the governor of Illinois expanded the coverage to include women 35 to 64 with no insurance. Since the program launched, 66,000 women have been screened for breast and cervical cancer in the State of Illinois (IBCCP, 2010).

To improve cancer screening, the CDC's National Breast and Cervical Cancer Early Detection Program (NBCCEDP) provides breast and cervical cancer screening to underserved, low-income, and uninsured women in the 50 states, District of Columbia, 5 U.S. territories, and 12 American Indian tribes (CDC, 2009). In 1990, Congress passed the Breast and Cervical Cancer Mortality Prevention Act, which helped guide the CDC in creating the NBCCEDP. This program addresses women with no or little discretionary income, no medical insurance coverage, minority status, and those that are geographically or culturally isolated from existing services. Some of the responsibilities of the program are to educate women to seek out services, to ensure that the services are accessible, to ensure services are convenient and provided in a culturally competent manner; to effectively communicate results; and to assist women who are in need of additional services (CDC, 2009). This program offers mammograms, CBEs, diagnostic testing, and referrals to treatment. In 2000, Congress passed the Breast and Cervical Cancer Prevention and Treatment Act to give states the option of offering women involved in NBCCEDP access to treatment through a Medicaid option. All 50 states and the District of Columbia passed the Medicaid option (CDC, 2009). In 2001, Congress also passed the Native American Breast and Cervical Cancer Treatment Technical Amendment Act to include American Indians and Native

Alaskans who are eligible for health services provided by the Indian Health Service or a tribal organization (CDC, 2009). Since the NBCCEDP started in 1991, 3.2 million women have been served, and 7.8 million breast and cervical examinations have been performed, with 35,090 breast cancers diagnosed (CDC, 2009).

The percentages of women by ethnicity receiving a mammogram in 2008 included: American Indian 62.7%, Non-Hispanic White 67.9%, Non-Hispanic Black 68.0%, Hispanic 61.2%, and Asian 66.1% (CDC, 2011). The percentages of mammography screening vary by education level. Women with more years of schooling are more likely to have had a mammogram in the last two years (CDC, 2011). In 2008, 73.4% of women with some college or more education had received mammograms in the last two years, while 65.2% of high school or GED-educated women and 53.8% of women with no high school education had received a mammogram (CDC, 2011). Mammography screening also varies depending upon age (CDC, 2011). In 2008, women aged 50 to 64 were more likely to have had a mammogram in the last two years at 74.2%, followed by women 65 and older at 65.4%, with women aged 40 to 49 the least likely to have had a mammogram in the last two years at 61.5%. The percentage of women 40 and older who have had a mammogram in the last two years increased from 29% in 1987 to 70% in 2000, but has declined slightly in 2005, and has since stabilized (ACS, 2011; Breen, Gentleman, & Schiller, 2011). Mammography screening rates for American Indian women declined in 2008 from 2005 and were 64.9%, but such rates increased for all other ethnic groups. Women who have less than a high school education, no health insurance, and recent U.S. immigration status are the least likely to have mammograms (ACS, 2011). In 2010, 70.7% of women who had health insurance had received a mammogram in the last two years, compared to 31.5% of women who did not have health insurance (ACS, 2011). In 2010, 74.6% of women

with a college education had received a mammogram in the last two years compared to 51.7% of women with less than a high school education. In 2010, 67.1% of women born in the United States received a mammogram in the last two years compared to 37.4% of women who had been in the United States for less than 10 years (ACS, 2011). In 2010, in the State of Illinois, only 54.9 % of women age 40 and older had received a mammogram in the last two years, and only 33.5% of women with no health insurance had received a mammogram in the last two years (ACS, 2011).

Deavenport, Modest, Hopp, and Neish (2011) found that low-income Hispanic women had a low rate of breast cancer screening. In that study, those authors conducted an experimental investigation of low-income Hispanic women to determine if low-income Hispanic women, older than 40 years of age, who received targeted cancer prevention audiovisual and media education materials (n = 105) had a significantly greater perceived threat of breast cancer, greater benefits and lower barriers to screening, and stronger intentions to obtain mammograms compared to a control group (n = 105). The intervention experimental group reported significantly greater perceived benefits, self-efficacy, and mammogram screening intentions than the control group.

Ahmed, Haber, Semanya, and Hargreaves (2010) found the insured low-income target population in their study had a mammography rate of 23.4%, well below the general population. Those authors evaluated the most effective intervention to improve mammography use in low-income women insured by a managed care organization. The study was a randomized controlled trial. Participants were 2,357 women noncompliant with screening mammography randomly assigned to one of three groups: control (n = 786) received usual care; simple intervention (n = 785) received prompt letter from the managed care organization (MCO) medical director; and stepwise intervention (n = 786) received the same prompt letter from the MCO; if still

noncompliant, a second prompt letter was sent from their PCP, and if still noncompliant, counseling was provided by lay health workers. Compared with the control, the primary care physician letter in the stepwise intervention increased the likelihood of screening by 80%.

Women who are older than 65 years of age, of lower income, and with lower educational attainment are more likely to have lower mammogram screening rates (Coleman et al., 2003; Meissner, Breen, Taubman, Vernon, & Graubard, 2007; O'Malley et al., 2001). A common reason that older women do not receive mammograms is because their physicians tend not to recommend them (Coleman et al., 2003; Coleman & O'Sullivan, 2001; Meissner et al., 2007). Having private insurance remained a predictor for physician's recommendation of breast cancer screening (Coleman et al., 2003, Fretts et al., 2000; Kelaheer & Stellman, 2000). Medicare coverage had little effect for mammography screening for Caucasian women and no effect for African American women (Coleman et al., 2003; Coleman & O'Sullivan, 2001). Cost has also been considered a barrier to mammography screening (McAlearney, Reeves, Tatum, & Paskett, 2007). One explanation for lack of compliance with breast cancer screening is the perceived cost especially for those that are African American, Hispanic, younger, unemployed, and of low-education and low-income status (McAlearney et al., 2007). Some studies have found that age, marriage, educational interventions, talking to others, attitudinal factors, referral source, and accurate knowledge about breast cancer all have a positive impact on African American women obtaining a mammogram (Crump, Mayberry, Taylor, Barefield, & Thomas, 2000; Davis et al., 2005; Husaini et al., 2001).

For close to two decades, experts have disagreed upon the starting and stopping ages of women for breast cancer screening, the schedule on which tests should occur, and the effectiveness of the different screening modalities (Meissner, Klabunde, Han, Benard, & Breen,

2011). There was much confusion and disagreement in 2009 among healthcare organizations when the USPSTF came out with their recommendations that contradicted the existing ACS guidelines. The new USPSTF recommendations resulted in considerable media coverage and public misunderstanding (Squiers et al., 2011). USPSTF sparked enormous controversy, which was commonly interpreted as either a step towards health care rationing or the public's distrust of science experts (Smith et al., 2010). No recent national information is available regarding physicians' breast cancer screening beliefs and practices (Meissner et al., 2011). Although healthcare providers play a key role in performing and referring patients for cancer screening, research indicates that physicians and other healthcare providers do not always follow clinical guidelines (Meissner et al., 2011; Nadel, Berkowitz, Klabunde, Smith, Coughlin, & White, 2009; Saint, Gildengorin, & Sawaya, 2005; Yabroff et al., 2009). It is also unknown to what extent the clinical guidelines motivate healthcare providers to implement screening and which factors are associated with changes in practice recommendations (Meissner et al., 2011).

It is logical that physician awareness of screening guidelines is necessary for successful screening of breast cancer. Zapka et al. (2005) investigated clinicians' perceptions of screening guidelines, reminders for screening, and plan and practice commitment, to identify areas of improvement in the screening process. Zapka et al. (2005) found that the clinicians' awareness with the screening guidelines was 98%, relatively high for breast cancer screening. The majority of the clinicians rated healthcare plans efforts as excellent to very good in maximizing screening efforts (Zapka et al., 2005). The belief in the benefits of screening, the promotion of screening tests, and national rates for mammography were relatively high in managed care plans (Swan, Breen, Coates, Rimer, & Lee, 2003). Zapka et al. (2005) found that 72.3% of clinicians were in agreement with the recommended screening interval for breast cancer screening guidelines.

Meissner et al. (2011) found that greater than 70% of physicians screened women 40-49 annually for mammograms and greater than 90% of physicians screened women 50 and older annually for mammograms.

C. **Factors Influencing Breast Cancer Screening**

Few studies have been conducted to examine healthcare providers' use of guidelines to promote breast cancer screening. However, there have been various studies conducted related to breast cancer screening and provider-directed interventions. Sabatino et al. (2008) performed a systematic review of provider-directed interventions to increase cancer screening. The interventions included the director offering, ordering, or recommending the screening test. Effectiveness of the intervention was measured by comparing post-intervention screening practices in study groups receiving the intervention with groups not receiving the intervention. Results of each study showed that the interventions were successful at promoting screening. Baron et al. (2010) performed a systematic review of studies published from 1986 to 2004 to determine the effectiveness of healthcare providers' recall/reminder intervention to increase cancer screening. The researchers did not describe the sample populations in the studies that were reviewed. The researchers concluded that recall/reminder systems were effective in increasing breast cancer screening with mammography. Sabatino, Thompson, Coughlin, and Schappert (2009) examined how predisposing, enabling, and reinforcing factors influence primary care providers (PCPs) to refer mammography through systematic review. The 2001–2003 National Ambulatory Medical Care and National Hospital Ambulatory Medical Care Surveys were used to identify visits to office (n = 8,756) and outpatient (n = 17,067) PCPs by women age 40 and older without breast symptoms or breast cancer to examine mammography referrals by predisposing (age, race, ethnicity, education, chronic problem), enabling (income,

payer, visits within 12 months, time with physician), and reinforcing factors (physician age, gender, specialty/clinic, PCP status, region). The researchers reported increased screening attributed to the intervention. Obtaining referrals for mammography from the PCP was related to many factors: women who were younger than age 70, were non-Hispanic, had at least a high school education, had visits for preventive care, had higher median income, had private insurance, had less than 3 visits in 12 months, spent at least 15 minutes with the PCP, had a female provider, or were seen in a gynecologic specialty. Bazargan, Bazargan, Calderon, Husaini, and Baker (2003) examined the impact of physician recommendation on mammography and BSE among African American and Hispanic women in public housing communities. A randomly selected sample of 291 low-income women from three communities was surveyed. Data were collected only from women age 40 and older ($n = 120$). There were 46 African American women and 74 Hispanic women who fit the criteria. Only 46% of these women reported having a mammogram in the previous 12 months. Physicians' recommendations were among the strongest predictors of obtaining a mammogram or performing BSE. Another predictor was having medical insurance. One out of four women in this study reported that their healthcare provider never told them to obtain a mammogram or perform BSEs.

Fiscella et al. (2011) examined the impact of a 12-month multimodal intervention on mammography and colorectal cancer screening rates in a safety-net practice caring for underserved patients that was an inner city family practice medical clinic. The interventions included outreach to patients through tailored letters, automated and personal phone calls, and point-of-care patient and clinician prompts. All patients that were past due for mammography or colorectal screening were assigned to either receive or not receive a screening promotion intervention. There were 469 participants enrolled ages 40-74. There were 28% African

Americans, 5% Latinos, 25% with Medicaid, and 10% without any form of insurance.

Participants in the intervention group showed significantly higher mammogram screening rates. The rate for the intervention group was 41% compared to 16.8% from the non-intervention group.

Physicians have an important role in making preventive recommendations and can make a difference in receipt of appropriate advice and services (Scholle, Agatista, Krohn, Johnson, & McLaughlin, 2000). Women who did not receive mammogram screening overwhelmingly reported that it was because their physician did not recommend it (Taplin, Urban, Taylor, & Savarino, 1997). Cancer control and prevention in physicians' daily practices need greater emphasis (Cummings et al., 2000; Frame, 2000). Older Medicaid recipients' cancer screening rates fell short of the national objectives because of a lack of recommendation from the physicians and not due to patient refusal (DuBard, Schmid, Yow, Rogers, & Lawrence, 2008). Women with private insurance were more likely to receive recommendations for clinical breast examinations and mammography (Bhosle, Samuel, Vosuri, Paskett, & Balkrishnan, 2007). Women who had better primary care relationships with their usual provider, especially those who expressed greater comfort in communicating with their physicians, were more likely to use preventive services (Bindman, Grumbach, Osmond, Vranizan, & Stewart, 1996). Recommendations from obstetricians/gynecologists were found to have a strong influence on whether women underwent breast cancer screening (McGreevy et al., 2002). Physician recommendations are central to mammography utilization (Frame, 2000).

Physicians often do not discuss preventive services in office visits due to a lack of time (Dunn, Shridharani, Lou, Bernstein, & Horowitz, 2001). Kapp, LeMaster, Zweig, and Mehr (2008) found that women who received CBEs were more likely to obtain subsequent physician

recommendation for mammography than women who had not received a CBE. It was also beneficial for nurse practitioners to discuss preventive screening when physicians lack time.

There is limited literature related to nurses' use of guidelines to promote breast cancer screening. Nurses should be instrumental in discussing breast cancer screening (Coleman, Coon, Fitzgerald, & Cantrell, 2001; Coleman et al., 2003). Past research has shown that nurse practitioners are more successful in persuading African American women of low income to keep mammography appointments (Crump et al., 2000; Coleman et al., 2003). Chiarelli et al. (2010) found that women attending centers with nurses were more likely to comply with annual screening recommendations. Compliance could be explained by longer visit time and education of the breast cancer screening process. Nurse practitioners can help patients discern values and beliefs while relating their knowledge to scientific evidence (Michaels, McEwen, & McArthur, 2008) Successful approaches and multi-method interventions are needed to improve breast cancer screening recommendations among healthcare providers (Coleman et al., 2003).

In 2011, there were 1,970 Obstetrician/Gynecologist and 4,638 family practice physicians in the state of Illinois (Kaiser State Health Facts, 2011). There were more than 120,810 registered nurses in Illinois in 2010 (Health Resources and Services Administration, 2010; Kaiser State Health Facts, 2010). Illinois had 3,900 nurse practitioners in 2010 (Kaiser State Health Facts, 2010).

D. **Decision-Making and Breast Cancer Screening**

The recommendation of breast cancer screening is dependent upon the decision-making process of the provider. Four decision-making models outline the goals of the physician-patient relationship. Emanuel and Emanuel (1992) emphasized the interaction between patient and physician, the physician's role and obligations, the role of patient values, and the concept of

patient autonomy of these four models. The fifth model discussed is the shared-decision making model which has been seen as a more ideal model in the medical encounter (Charles, Gafni, & Whelan, 1997).

The first model considered here is the paternalistic model, previously called the parental (Burke, 1980) or priestly model (Veatch, 1981). The paternalistic model's fundamental tenets are based upon the obligation to achieve patient benefit (Chin, 2002). Paternalism was also developed from the American Medical Association codes prior to 1960. For centuries, principles of beneficence and non-maleficence took priority in the relationship of the physician and patient (Chin, 2002). In the paternalistic model, the physician is recognized and accepted as the guardian who uses his or her specialized knowledge and training to benefit the patient (Chin, 2002). The term paternalism arose from the relationship that resembles that between a wise father and his child (Chin, 2002).

In this model, the physician makes the decision about screening and what is best for the patient with limited input from the patient. The paternalistic model is based on the fact that the physician-patient interaction will ensure that the patient receives the intervention or treatment that will best promote the well-being and health of the patient (Emanuel & Emanuel, 1992). This model obligates the more knowledgeable physician to benefit the less informed patient (Chin, 2002). According to the paternalistic model, the physician uses his or her expertise to determine the patient's state of health and to identify the medical tests and treatments that would most likely restore the patient's health (Emanuel & Emanuel, 1992). In the paternalistic model, the physician will use his or her skill to present the necessary information that will persuade the patient to consent to the intervention or treatment that the physician considers to be the best

(Emanuel & Emanuel, 1992). Medical paternalism claims that the physician is more informed and can claim better acuity and power of judgment (Lim, 2002).

The principle foundations of medical paternalism are no harm, welfare, and legal moralism (Lim, 2002). Generally, it is acceptable for a physician to act in the benefit of the patient to prevent harm, especially when the patient cannot act voluntarily or autonomously (Lim, 2002). In the paternalistic model, the physician acts like a guardian to the patient by implementing and articulating what is deemed to be best for the patient's well-being and health (Emanuel & Emanuel, 1992). The physician has a moral and ethical obligation to place the patient's interests above his or her own, and solicit peers when his or her knowledge is inadequate (Emanuel & Emanuel, 1992). The physician genuinely wants what best for the patient, but firmly believes the patient should be guided through the decision making process (McKinstry, 1992). In the paternalistic model, the physician clearly sees himself or herself in a superior position based on his or her expertise and knowledge. When important decisions are relevant, the physician feels justifiable in overriding the patient's autonomy (McKinstry, 1992). It is assumed that the patient will be thankful for the decision the physician makes even if the patient does not agree (Emanuel & Emanuel, 1992; Stone, 1976). The paternalistic model assumes an intentional override of a patient's preferences that is justified by the goal of preventing harm to the patient (Sine, 2008).

The paternalistic model is beneficial in helping physicians determine the benefits of breast cancer screening of the patients. This model helps the physician limit the harms of the patient by encouraging breast cancer screening. The paternalistic model is useful in situations where the patient is not competent or able to make decisions, or when the patient is not well-informed or does not have the knowledge base to make such decisions. Paternalism can be used

in situations where the physician realizes that a treatment or intervention would not be immediately forthcoming, but proceeds with treatment for the good of the patient (McKinstry, 1992). One objection of the paternalistic model is the fact that it should not be assumed that the patient and physician espouse similar values and views of what constitutes a benefit (Emanuel & Emanuel, 1992).

The second model is the informative model. It is also called the scientific (Burke, 1980), engineering (Veatch, 1981), or consumer model (Emanuel & Emanuel, 1992). The physician's obligation in this model is to provide the patient with all prudent information. Based on this information, the patient will decide which intervention is best and the physician will execute the intervention (Emanuel & Emanuel, 1992). The physician is responsible for informing the patient of his or disease state or well-being, the nature of any possible therapeutic or diagnostic interventions, the nature and probability of risks and benefits involved in the intervention, and any information relevant to any knowledge deficits (Emanuel & Emanuel, 1992). In this decision-making model, the physician will usually ask the patient for permission to perform the chosen health care intervention while simply informing the patient about the other intervention options (Wirtz, Cribb, & Barber, 2005).

This informative decision-making model assumes a fairly clear distinction between facts and values (Emanuel & Emanuel, 1992). The patient's values are usually well-defined and known to the physician. What the patient normally lacks are facts and information about the treatment or intervention (Emanuel & Emanuel, 1992). This model assumes that it is the physician's obligation to provide all the available facts and information. The patient's values will determine which treatments or interventions will be given (Emanuel & Emanuel, 1992; Wirtz et al., 2005). The informative model is premised on the assumption that information

provided to the patient enables them to empower themselves to become a more autonomous decision maker (Charles et al., 1997). In the informative decision-making model; the physician's values, or the understanding or judgment of those values, has no role (Emanuel & Emanuel, 1992). The physician's role is to provide the patient with technical knowledge and expertise, and to consult other experts when their knowledge or skills are lacking (Emanuel & Emanuel, 1992). In this model, the physician would be responsible for informing the patient about breast cancer screening, and the patient would then make a decision about obtaining breast cancer screening.

The third model is the interpretive model. This decision-making model attempts to explicate the patient's values and assess what the patient really wants, and helps the patient select the available medical intervention that best suits the patient's values (Emanuel & Emanuel, 1992). Eventually, the physician decides about a treatment plan for the patient by taking the patient's preferences into consideration (Wirtz et al., 2005). The physician helps the patient interpret the patient's value for the patient because the patient may only partially understand the values, and the values may conflict when applied to specific situations. It is the physician's responsibility to make the values coherent to the patient (Emanuel & Emanuel, 1992). The physician has an obligation to determine which diagnostic test and treatments best realize the patient's values. In this model, the patient ultimately decides which value and course of action is best in the given medical situation (Emanuel & Emanuel, 1992). In the interpretative model, the physician acts as a counselor or advisor, supplying the patient with relevant information in order to clarify the patient's values, and suggest medical interventions that realize these values (Emanuel & Emanuel, 1992). In this model, the physician would help the patient realize his or her values and how these values relate to the importance of breast cancer screening.

The fourth model is the deliberative model, in which the objective is for the physician to inform the patient based on the patient's clinical situation and then explain in detail how the patient's health-related values are reflected in the available options (Emanuel & Emanuel, 1992). The physician would persuade the patient to express his or her health-related values and determine how these values would affect their disease process or treatment. The physician acts more like a teacher. The physician engages the patient in dialogue that would help the patient decide which plan of action is best (Emanuel & Emanuel, 1992). The physician would express what actions the patient would take with regard to which medical treatments. In the deliberative model, the physician would discuss how obtaining breast cancer screening would be the most likely beneficial course of action.

The fifth model is the shared decision making model developed by Charles et al. (1997) for defining the meaning of shared treatment. This model originated in the context of a life-threatening disease when several treatment options were available with different outcomes. In this model, the benefits and risks of each option and potential effects on the patient's psychological and social well-being are discussed (Murray, Charles, & Gafni, 2005; Charles et al., 1997, 1999). Shared decision making model lies between the paternalistic and the informative decision-making model (Murray et al., 2005). Information is a two-way transfer between the physician and the patient. The physician provides all the necessary medical information to make a decision, while the patient provides information about personal circumstances and which outcomes are of greatest personal importance (Murray et al., 2005). The information exchange ensures that all available options are out in the open and that both the patient and physician evaluate these options within the context of the patient's specific situation and needs rather than a standardized menu of options (Charles et al., 1997, 1999). In this model,

the physician states his or her values; the physician and patient deliberate together; and then they discuss how the various treatment options meet the patient's and physician's priorities in order to reach a joint decision (Murray et al., 2005; Charles et al., 1997, 1999).

E. **Conceptual Framework: Social Ecological Model**

The Social Ecological Model is a framework used to examine the multiple effects and interrelations of social elements on the environment (Bronfenbrenner, 1979). This framework was proposed to focus on the understanding of multiple levels of influence on behavior (Sallis & Owen, 2002). Bronfenbrenner's (1979) perspective focuses on the person, the environment, and the interaction between the two. Bronfenbrenner (1979) described several levels of environmental influences that interact with individual variables. The microsystem is the interpersonal interactions in a specific setting, such as with family, social acquaintances, or work groups (Sallis & Owen, 2002). The microsystem is activities, roles, and interpersonal relationships experienced by the developing person in a given setting with particular physical and material characteristics. The setting is where individuals actively engage in face-to-face interactions, such as the home, church, or clinics (Bronfenbrenner, 1979). The social identity, roles of the individual, and interpersonal relations are the building blocks of the microsystem (Bronfenbrenner, 1979). The microsystem consists of individual aspects that comprise the social identification of the individual in roles such as mother, father, sibling, child, physician, or patient. Qualities of an individual can be learned or ingrained, such as ethnicity or race, or gender. In the interpersonal sphere, psychological and cognitive factors of the individual consist of factors such as personality, beliefs, and knowledge (Gregson et al., 2001). In the microsystem, the individual is shaped by the environment and the interactions with others (Bronfenbrenner, 1979). In this study, the microsystem will consist of the physician and the

interaction with the environment shaped by influences from patients, peers, groups, and social relationships.

The mesosystem is the organizational or institutional factors that structure or shape the environment in which an individual interacts (Gregson et al., 2001). The mesosystem comprises the interrelations among two or more settings in which the developing person actively participates such as relations among family, work, and social life (Bronfenbrenner, 1979). A mesosystem is a system of microsystems. It is formed or extended when the developing person enters into a new system (Bronfenbrenner, 1979). The mesosystem is the norm-forming component of a group or organizations, as the individual is an active participant in the group or organization. The mesosystem in this study may include the physician's relationships with patients, coworkers, and social connections.

The exosystem which does not involve the developing person as an active participant, but involves the events that occur that affect or are affected by what happens in the setting containing the developing person (Bronfenbrenner, 1979). The exosystem is the larger social system that can affect individuals and settings through economic forces, cultural beliefs and values, and political actions (Sallis & Owen, 2002). The exosystem level refers to community-level influence, including established norms, standards, and social networks (Gregson et al., 2001). An exosystem may include hospital groups, cancer organizations, and insurance groups.

The macrosystem, is the cultural context, which refers to the consistencies in the form and context of the lower-order systems that exist at the level of subculture or culture as a whole, along with any belief systems or ideologies underlying these consistencies (Bronfenbrenner, 1979). Examples of a macrosystem would be Western culture or African American culture.

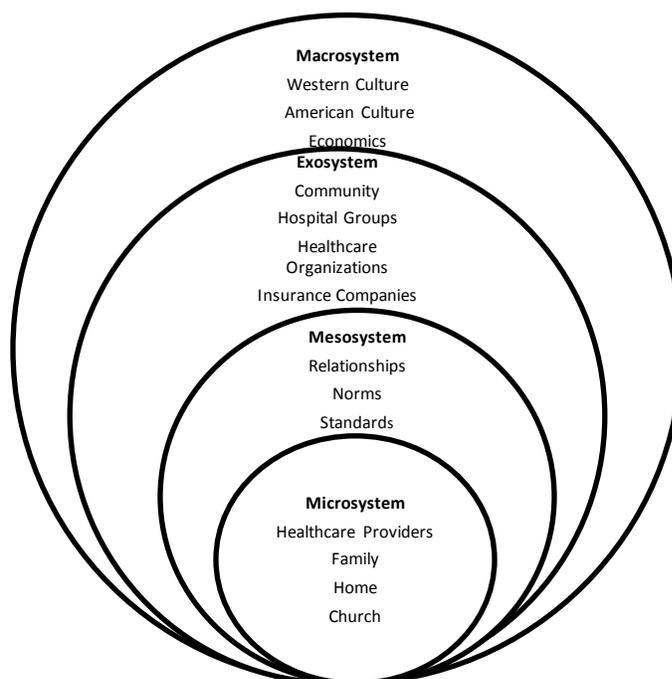


Figure 1. Social Ecological Model for Breast Cancer Screening. Adapted from Bronfenbrenner (1979, 1989).

Social Ecological Model was further examined by using the guidelines of Walker and Avant (2005). The origin of the Social Ecological Model lie within an extension of work from Lewin's (1936) classic equation showing that human behavior is a function of the person and environment. Kurt Lewin (1936) coined the term *ecological psychology* to describe the study of the influence of the outside environment on the person. Skinner's (1953) position that antecedent and consequent events in an observable environment directly control behavior is an influential forerunner of current ecological models (Sallis & Owen, 2002). The Social Ecological Model assumes that there is an interaction between the developing person and the environment, and the perception of how the person deals with their environment.

Bronfenbrenner (1979) assumed that the individual, community, organization, and culture are all

nested factors that operate fully within the next larger sphere. The Social Ecological Model is essentially a systems theory approach to understanding human development that occurs in the various spheres due to the actions occurring in the different systems.

F. **Social Ecological Model and Breast Cancer Screening**

A social ecological approach that uses groups rather than individuals as the unit of study is thought to be an important complement to measures of individual health attributes (Susser, 1994). The ecological approach may help capture the context of communities, cultures, and other groupings (Wells & Horm, 1998). Ecological approaches have been used to assess breast cancer stage of diagnosis (Wells & Horm, 1998), estimate cancer incidence in small areas (Andrews, Kerner, Zauber, Mandelblatt, Pittman, & Struening, 1994), and measure the association of various indicators of lipid intake with breast cancer mortality (Marshall, Qu, Chen, Parpia, & Campbell, 1992). Mobley, Kuo, Clayton, and Evans (2009) used a unique hybrid blend of the social ecological model and health behavior constructs with an emphasis on spatial interaction and the woman's environment, differentiating between several levels of community influence, in order to examine predictors of mammography utilization. The National Health Interview Survey (NHIS) has been used at the ecological level to report breast and cervical cancer screening using various selected ecological variables (Wells & Horm, 1998). The NHIS is a nationally representative annual survey conducted by the National Center for Health Statistics (NCHS) in 45,000 households (Kovar, 1989). The NHIS collects a wide range of health-related topics from every family member or randomly selected individuals (Wells & Horm, 1998). The NHIS collects information as varied as chronic and acute conditions, doctor's visits, hospital stays, use of preventive and diagnostic services, and personal risks factors (Adams & Benson, 1991; Wells & Horm, 1998). The use of ecological variables in the NHIS

demonstrates an application that is useful in identifying underserved areas or areas with underutilized services (Wells & Horm, 1998). Another ecological study determined the effectiveness of mammography in reducing breast cancer mortality presumably through the diagnosis of earlier stage tumors (Cooper et al., 1998). However, this study was limited due to the relative low African American population in the sample. Therefore, a reliable estimate for minority women was not conducted. This study did provide information that mammography is underused, and the findings demonstrated the need to promote population-based mammography screening programs (Cooper et al., 1998). Ecological models that directly assess cancer screening are less commonly reported (Wells & Horm, 1998). This may be attributed to the fact that it may be difficult to obtain screening information at the ecological level, particularly national data (Wells & Horm, 1998). Therefore, it is necessary to conduct further studies using ecological models to assess breast cancer screening.

G. **Summary and Aim**

There is a gap in the literature related to physicians and advanced practice nurses use of guidelines and criteria used to promote breast cancer screening. Thoroughly examining the decision-making process of healthcare providers will provide a better understanding of the screening process and their decisions based upon patient-specific demographics. The purpose of this study was to examine what guidelines and what criteria influence healthcare providers' decisions for breast cancer screening of women from different education, income, and insurance statuses. The introduction and literature reviewed above indicate several things. Breast cancer screening can help reduce morbidity and mortality. Guidelines vary on when to begin and how often to conduct breast cancer screening. Women with lower SES have the lowest levels of screening behaviors. The Social Ecological Model was used as the framework to understand the multiple levels of influence on breast cancer screening behavior. Healthcare providers can be influential in promoting breast cancer screening.

III. METHODS

A. **Introduction**

This chapter will cover the design, sample, setting, instrumentation, demographic questionnaire, field notes, data collection and procedure, data analysis, scientific rigor, human subjects, and a summary.

B. **Design**

A qualitative descriptive research design described by Sandelowski (2000) was used for the purpose of describing in-depth the decision-making process of healthcare providers because limited information is currently available on the criteria influencing healthcare providers' decision-making process to screen less-educated, low-income women, and uninsured women for breast cancer. Qualitative descriptive research is amenable to obtaining straight and unadorned answers to questions of special relevance to practitioners and policymakers (Sandelowski, 2000). Semi-structured interviews were used to ensure all question areas were covered and allowed for the participants to freely speak about the topic (Polit & Beck, 2006).

C. **Sample**

A purposive sample was used to allow the selection of participants based on their expertise in breast cancer screening. The sample included healthcare providers: 10 physicians and 10 nurse practitioners with a women's health or family practice specialty. Selection criteria included physicians and advanced practice nurses who had a specialty in women's health or family practice and who had practiced for at least one year. Exclusion criteria included any physician or advanced practice nurse who practiced in any other specialty and who had practiced for less than a year.

D. **Setting**

The interviews were conducted in Chicago and the metropolitan area.

E. **Instrumentation**

1. **The Coleman Breast Cancer Screening Interview Guide**

The Coleman Breast Cancer Screening Interview Guide was developed by the researcher with assistance of a committee member with expertise in qualitative data. It is a semi-structured interview guide based on the Social Ecological Model. It consists of two questions and three patient care scenarios with probes (See Table II).

TABLE II
COLEMAN BREAST CANCER INTERVIEW GUIDE

Research Questions	Related Interview Questions and Scenarios	Probes	Social Ecological Model Concepts
What breast cancer screening guidelines do healthcare providers currently use?	What guidelines do you currently use for breast cancer screening for women over 40 not at high risk?		Macrosystem Exosystem Mesosystem Microsystem
What other criteria do healthcare providers use to adapt their guidelines based upon the women's education, income, and insurance status?	Patients come to you with different characteristics and different resources. What other criteria would you use in applying breast cancer screening guidelines for women over 40 who are not at high risk?		Macrosystem Exosystem Mesosystem Microsystem
What other criteria do healthcare providers use to adapt their guidelines based upon the women's education, income, and insurance status?	I would like to spend some time discussing how you use the different characteristics and resources of the patient to apply breast cancer screening guidelines. I am particularly interested in how your judgment of a patient's education, income, and insurance status might affect how you might apply these guidelines.		
What other criteria do healthcare providers use to adapt their guidelines based upon the women's education, income, and insurance status?	a) How would you use breast cancer screening guidelines for women over 40 not at high risk for a woman who is a high school dropout in comparison to a woman who has some college?	a) What concerns would you have about a woman with less education being able to follow your guidelines in comparison to a woman with some college?	Macrosystem Exosystem Mesosystem Microsystem
	b) How would you use breast cancer screening guidelines for women over 40 not at high risk for a woman who does not have any insurance in comparison to a woman who has adequate insurance coverage?	b) What concerns would you have about a woman without insurance coverage being able to follow your guidelines in comparison to a woman with adequate insurance coverage?	
	c) How would you use breast cancer screening guidelines for women over 40 not at high risk for a woman who is of low-income status in comparison to a woman of high-income status?	c) What concerns would you have about a woman with low-income status being able to follow your guidelines in comparison to a woman of high-income status?	

2. **Demographic Questionnaire**

Each participant completed a demographic questionnaire that consisted of 4 questions: their area of specialty, length of time in practice, number of women they see in their practice per month for breast cancer screening, and their highest level of education. The questionnaire took approximately one minute to complete.

3. **Field Notes**

The researcher completed field notes describing the setting, the time of the interview and the observations during the interview. Emerson, Fretz, and Shaw (1995) stated that field notes should describe experiences and observations made while participating in an intense and involved manner. The researcher will describe her personal reaction to the interview and the participants' reactions to the questions and the interviewer.

F. **Data Collection and Procedure**

Fliers were posted in greater Chicago -area hospitals and community centers to recruit physicians and nurse practitioners from women's health and family practice. Telephone calls were made from numbers found in the phonebook to recruit physicians and nurse practitioners. Physicians were recruited from a national directory of practicing physicians and nurses from a national directory of registered nurse practitioners. Physicians and nurses were also recruited from email addresses listed in the national directories and the University of Illinois directory. The physicians who were recruited were subsequently asked if they had nurse practitioners in their practice for recruitment. When contacted by potential participants or when the researcher contacted potential participants, the researcher used a telephone script or email script that provided information on the purpose and what participation consisted of: a breast cancer screening interview that lasted approximately 30 minutes and the completion of a demographic

questionnaire that took approximately one minute (See Appendix A). Written informed consent was obtained once the participant agreed to participate. Physicians and advanced nurse practitioners working in women's health or family practice specialties were interviewed at a mutually agreeable time and place. The interviews were usually in their office, patient exam room, or conference room. Each participant was interviewed once. The interviews were audio taped. Immediately after the researcher said goodbye to the participant, the field notes were completed.

G. **Data Analysis and Management**

Content analysis was used to analyze the data. The objective of content analysis is to provide knowledge and understanding about a phenomenon under study (Downe-Wamboldt, 1992). This research method allows categories to flow from the data and new insights to emerge (Kondracki & Wellman, 2002). First, the researcher organized and prepared the data for analysis. This involved transcribing interviews and reviewing the field notes. A professional transcriber transcribed the interviews. Each transcript was reviewed by the researcher. Next, the researcher read through the data to get a general sense of the overall information and meaning. It was also helpful to read through the transcripts and highlight the text that may represent some sort of meaning for the data (Hsieh & Shannon, 2005). Next, the researcher wrote down impressions, thoughts, and initial analysis that came to mind when reading through the transcripts (Hsieh & Shannon, 2005). Then the coding process began, with organizing the data into categories developed from the text and labeling these categories with a term. Creating categories is a key process to qualitative content analysis (Granehein & Lundman, 2003). The codes were written to the appropriate segment of the data (Creswell, 2007). Any data that could not be organized into any preliminary scheme was organized into a new code category (Hsieh &

Shannon, 2005). Next, definitions for each code and category were identified. Finally, the researcher made an interpretation of the data. There were (6) categories: guidelines, criteria, personal judgment, education, insurance, and income. A table was completed for each category. The codes were totaled out of (20) responses with the exception of guidelines. Four respondents answered twice, resulting in 24 responses for guidelines. After the researcher coded the interview, a blank matrix was sent to a coder, another nurse researcher to check the codes. Once the individual coded (10) interviews, the researcher then compared both matrices. There was 100% agreement for guidelines, 83% (15/18) for criteria, 83% (20/24) for judgment, 90% (28/31) for education, 93% (27/29) for insurance and 92% (34/37) for income. The researcher and coder then discussed the codes that were not 100% matched under each category and were able to verbally agree on an interpretation that resulted in 100%. The researcher then developed frequency counts for the codes that occurred most often for each category and reported those codes as percentages.

H. **Scientific Rigor**

Qualitative research must adhere to the standards of reliability and validity. Lincoln and Guba (1985) coined the term “trustworthiness.” The standards Lincoln and Guba (1985) developed that will be used are “applicability,” “consistency,” and “neutrality.” *Applicability* is the transferability to other populations, situations, and settings (Lincoln & Guba, 1985). *Consistency* is the extent to which the data can be replicated with the same or similar participants and context. An audit trail was used to systematize, relate, and cross-reference the data (Lincoln & Guba, 1985). *Neutrality* refers to the degree which the findings are a result of the inquiry from the subjects and not the biases or interests of the researcher. *Neutrality* is the objectivity of the

researcher (Lincoln & Guba, 1985). The researcher is responsible for clarifying any bias or assumptions in order that the readers will have an honest narrative (Creswell, 2007). The biases and assumptions of the researcher were outlined and examined and made note of in field notes. The researcher did not participate in the sharing of any personal beliefs in order not to bias the study. The researcher bracketed or identified and held in abeyance any preconceived beliefs or opinions about the phenomenon under study (Polit & Beck, 2006).

I. **Protection of Human Subjects**

This proposal was approved by the University of Illinois at Chicago Institutional Review Board (IRB). The participants were provided with the details of the study, data collection procedures, and their involvement in the study. Written informed consent to participate was obtained prior to the start of the study. Each participant was informed of their right to withdraw at any given time. The participants were notified of their rights to privacy and confidentiality. The identity of the participants was protected.

IV. RESULTS

A. Sample

There were a total of 20 respondents: 10 physicians and 10 advanced practice nurses. Five physicians were obstetricians/gynecologists, and five were family practice physicians. The advanced practice nurses included seven obstetrics/gynecology advanced practice nurses and three family advanced practice nurses. The length of practice for physicians ranged from 4 to 36 years, whereas the length of practice for the advanced practice nurses ranged from 6 to 40 years. The number of women seen in practice for breast cancer screening ranged from 10-320 per month for the physicians and 10-100 per month for the advanced practice nurses. The highest degree obtained for all physicians was a Doctor of Medicine. The highest degree obtained for all advanced practice nurses was a Master of Science in Nursing (See Table III).

TABLE III
DESCRIPTION OF SAMPLE

	APN	MD
N	10	10
Area of Specialty	OB/GYN = 7 (70%) Family Practice = 3 (30%)	OB/GYN = 5 (50%) Family Practice = 5 (50%)
Length of time in Practice	1-10 years = 1 (10%) 11-20 years = 3 (30%) 21-25 years = 2 (20%) >26 years = 4 (40%)	1-10 years = 5 (50%) 11-20 years = 4 (40%) 21-25 years = 0 >26 years = 1 (10%)
Number of women seen in practice for breast cancer screening (per month)	10-40 = 5 (50%) 41-80 = 3 (30%) 81-100 = 2 (20%)	10-40 = 2 (20%) 41-80 = 5 (50%) 81-100 = 2 (20%) 320 = 1 (10%)
Highest level of Education	MSN = 10	MD = 10

B. Guidelines Used

Guidelines used were from the American Cancer Society (ACS), American Congress of Obstetricians and Gynecologists (ACOG), or United States Preventive Services Task Force (USPSTF), as reported by the participants. The definitions are included in Appendix B. Four participants reported using two of these guidelines. Seven (70%) of the physicians reported using USPSTF guidelines, while six (60%) advanced practice nurses reported using ACS guidelines. The participants did not report using Susan G. Komen or NCI guidelines (See Table IV). One physician stated:

I generally follow ACS or ACOG, between the two of them. I got confused last year because there were so many people that started recommending different guidelines from what we were accustomed to. I become extremely disturbed

about it because I've seen in my career several women who were dead before they were 40. I've known at least 5 women who were dead before they were 35. I am not in agreement with the screening that we do have. I think it should be different. But this is what I use. The insurance is not going to pay for them, so oftentimes I find myself getting ultrasounds on women even before that age. If I had my druthers, for African American women, I would probably do a basic screen when they were 30 years old, one when they were 35, do another one at 40.

One nurse stated, "I use ACS, I have always followed those guidelines."

TABLE IV
GUIDELINES

	APN	MD	TOTAL
ACS	6/10 = 60%	1/10 = 10%	7/20 = 35%
ACOG	5/10 = 50%	3/10 = 30%	8/20 = 40%
USPSTF	2/10 = 20%	7/10 = 70%	9/20 = 45%

C. Other Criteria Used

1. General Criteria

The participants gave numerous responses ranging from family history, ability to pay, confusion about which guidelines to follow, degree of concern for the patient, vigilance for African American women, patient history, current complaints, referral, convenience of obtaining screening, patient preference, physical and breast changes, yearly BSE, and current research. No response related to general criteria for screening women over 40 years old not at high risk was reported by 50% of the sample (See Table V). The definitions are included in Appendix C.

TABLE V
GENERAL CRITERIA

Response	Total	Response	Total
Ability to pay	2	Empower women	1
Same criteria	2	Current complaints	1
Disagreement	1	Recommendation	1
Concern	1	Referral	1
Explanation	1	Convenience	1
Instruction	1	Other guidelines	3
Family history	6	Controversy	1
Age	1	Patient preference	1
Pros/Cons	1	Physical changes	3
More detail	1	Yearly BSE	1
Vigilance for AA women	1	Annual at 40	1
Personal history	2	Research	1
Patient history	1	Options	1

2. **Personal Judgment**

The participants gave numerous responses ranging from no personal judgment, family history, vigilance for African American women, having transportation to get screening, personal experience, professional experience, ability to pay, current research, personal history, everyone should have screening, patient preference, the best interest of the patient, public awareness, concern, patient's request, earlier screening for some women, and physical changes. No response related to personal judgment for screening women over 40 years old not at high risk was reported by 50% of the sample (See Table VI). The definitions are included in Appendix D.

TABLE VI
PERSONAL JUDGMENT

Response	Total	Response	Total
No personal judgment	5	Useless	1
Vigilance for AA women	1	Resistance	1
Physical Exam	1	Recommendation	3
Risk factors	1	Explanation	2
Family history	4	Controversy	1
Tool	2	Research	2
Pros/Cons	1	Personal history	2
Transportation	1	Everyone should have	1
Personal experience	2	Personal preference	1
Patient's decision	1	Best interest	1
Experience	1	Public awareness	1
Ability to pay	1	Concern	1
Fear	1	Request	1
Difficulty	1	Earlier screening	1
Discomfort	2	Physical changes	1

3. **Education**

Fourteen (70%) of the 20 participants (seven physicians and seven advanced practice nurses) reported that they would not use breast cancer screening guidelines any differently based on education for women over 40 not a high risk. Some of the responses included: “It wouldn’t make any difference,” “I don’t think I’d apply them any differently,” and “I do not think there is a difference at all. I do not think it affects how I would screen.” Twenty percent (n=2) physicians said they would be concerned about a woman who is a high school dropout understanding breast cancer screening guidelines, opposed to 60% percent (n=6) of advanced practice nurses had these concerns. One nurse stated, “If I was going to give them something written about self-breast exam, I would make sure that they understand it, but there are usually pictures involved. So they would have to be able to read that, but hopefully I am discussing with

them and showing them how to check their breasts.” Another nurse stated, “I may discuss a breast screening with her and try to do a brief assessment of her understanding of a routine screening test, why it’s important, why it’s done, and why they are recommended.” See (Table VII) for response related to “How would you use breast cancer screening guidelines for women over 40 not at high risk for a woman who is a high school dropout in comparison to a woman who has some college? See Appendix E for definitions.

TABLE VII
EDUCATION

Response	Total	Response	Total
No difference	14	Discomfort	1
No concerns	1	Current complaints	1
Higher death rates	1	Screening tool	1
Less accessibility	1	Recommendation	1
More accessibility	1	Follow through	1
Inform	1	Simple terminology	5
Referral	2	Don't follow	2
Understanding	8	Cost	1
Resources	2	Family History	1
Assumption	1	More pushy	1
Fear	1	Follow-up	3
Patient as individual	1	Explanation	4
Personal history	1	Lack of knowledge	2
Different terminology	1	Misunderstanding	1
Self-empowered	1	Fear	1
Importance	2	Same guidelines	2
Compliance	1	Educate	1
Priorities	1	Personal decision	1

4. **Insurance**

Seven physicians and seven advanced practice nurses reported that they would refer and/or give resources to women over 40 not at high risk for a woman without insurance. Examples for providing resources included giving out information for the Pink Card program, handing out pamphlets on breast cancer screening information, providing phone numbers to facilities that may provide free or low-cost mammograms, and using the Illinois Breast and Cervical Cancer program as a resource. One physician stated, “We can probably refer them to some outside agencies that may do gratis mammograms.” Another physician stated, “I know that there are places in Springfield where we can call down and get a number, a pre-call or whatever where we can get a pap smear and they can get a free of charge mammogram if they need it.” One nurse stated, “I would try to refer to one of the sites that offer free mammogram screening for people without insurance or low-income people.” Another nurse stated, “If she was uninsured, I would help her to look for other resources in the community. I give websites, I give phone numbers, I give them information.” Another nurse stated, “Well, I attempt to find out what the resources are for those who are uninsured, because again the majority of my patients do not have insurance and it’s becoming a bigger issue now.” See (Table VIII) for responses related to “How would you use breast cancer screening guidelines for women over 40 not at high risk for a woman who does not have any insurance in comparison to a woman who has adequate insurance coverage? See Appendix F for definitions.

TABLE VIII
INSURANCE

Response	Total	Response	Total
No difference	5	Cost	3
Ability to find a place	1	No issue	1
More difficult	2	Grants	1
More work	1	Different opinions	1
Hassle	1	Normal	1
No comparison	1	Prevention	1
Without difficulty	1	Reinforcement	1
Referral/Resources	14	Social work	1
Convenience	2	Follow-up	1
Stress importance	1	Recommendation	1
Barrier	1	Same guidelines	1
No concern	2	Priorities	1
Limiting	1	Later start	1
SES factors	1	Compliance	1
Risks	1	Follow through	1
Background	1	Understanding	1

5. **Income**

Eleven (55%) of the 20 participants (Six physicians and five advanced practice nurses) reported that there was no difference in how they would screen low-income women over 40 not at high risk in comparison to a woman of high-income. Some of the responses included: “I don’t think I use them any differently”, “The guidelines don’t change; there is no difference,” “I don’t know that there is a difference,” and “The strategies would be the same, regardless of income.” See (Table IX) for responses related to, “How would you use breast cancer screening guidelines for women over 40 not at high risk for a woman who is of low-income status in comparison to a woman of high-income status? See Appendix G for definitions.

TABLE IX

INCOME

Response	Total	Response	Total
No influence	1	Importance	2
Insurance concern	2	Barriers	2
No difference	11	Medicaid/Medicare	1
Referral	7	High co-pay	1
No issue	1	Recommendation	3
An issue	1	Prevention	1
Greater access	2	Assumption	1
Limited access	1	Treatment	1
Poor quality	1	Follow-up	2
Denied access	1	Social work	2
Social issues	2	Grants	1
Priorities	4	Seek care	1
Age	1	Convenience	1
Risk factors	1	Don't follow	1
Resources	6	Confusion	1
Follow through	1	No concerns	1
Transportation	3	Later start	1
Ability to pay	3	Educate	1
Understanding	2	Compliance	1
Explanation	1	Choice	1

V. DISCUSSION

Results from this study indicated that the majority of the physicians utilized the US Preventive Service Task Force (USPSTF) guidelines while the majority of the advanced practice nurses utilized the American Cancer Society (ACS) guidelines more often than using other major healthcare organization guidelines. Meissner, Klabunde, Han, Benard, and Breen (2011) examined physician recommendation practices for breast cancer screening and disclosed that 56% of the physicians reported using ACS, 47% reported using ACOG, and 42% reported using USPSTF guidelines. Physicians tended to use USPSTF guidelines because these guidelines specified screening age limits and ACS guidelines because ACS does not specify an age for not recommending mammography or clinical breast examination. Han et al. (2011) found that physicians found clinical guideline recommendations were most influential from their own professional societies.

American Cancer Society guidelines suggests screening women at age 40 yearly for mammograms and yearly for clinical breast examination while USPSTF suggests starting mammograms at age 50 and every two years after age 50 and does not recommend for or against clinical breast examinations. The variation and lack of agreement on the clinical guideline recommendations among physicians suggest that guideline multiplicity is a problem for clinical decision-making (Han et al., 2011).

No general criteria or personal judgments were reported by the majority of healthcare providers to screen women over 40 not at high risk. Additionally, the majority of the participants responded that there was no difference in how they screened a women based on education and income. However, more advanced practice nurses stated that they would have a concern about a

woman with less than a high school education understanding the guidelines. Nurses have a professional obligation to address the unique information needs of the patients. In routine nursing practice, the goal of patient interaction is to have the patient obtain, understand, and act on the information the nurse gives so that the patient can maintain optimal health (Speros, 2011). Yarboff (2008) stated that lack of understanding of screening benefits has been associated with less screening. Patient education and communication were significantly associated with insufficient screening (Young, Schwartz, & Booza, 2011).

Several participants stated that they would screen women differently based on insurance: they would refer or use resources for women to obtain breast cancer screening. Referral of screening and resources at the provider level involves the ability to communicate recommendations for screening and referring patients to specialty providers and coordinating the receipt of recommended care (Yarboff, 2008). The navigation of the healthcare system is more complex for those patients without healthcare insurance (Yarboff, 2008). Jandorf et al. (2010) found that physician referral is critical and is associated with an increase in screening rates. Young, Schwartz, and Booza (2011) found that physician referral for mammograms increased screening rates.

Although the majority of the participants in this study would not screen women any differently based on education or income; several studies have shown that women with less education, low-income, or no insurance were the least likely to have a mammogram (ACS, 2011; Barrett, & Legg, 2005; McAlearney, Reeves, Tatum, & Paskett, 2007; Sabatino, Coates, Uhler, Breen, Tanka, & Shaw, 2008; Shi, Lebrun, Zhu, & Tsai, 2011; Zhao, Zhang, & Rao, 2011). Education, income, or insurance status has had an effect on cancer screening practices. Jandorf et al. (2010) found that those with no insurance or paying out of pocket were less like to undergo

colorectal cancer screening but physician recommendation and encouragement for colorectal screening was positively associated with colonoscopy receipt. Bowen, Hannon, Harris and Martin (2011) found that patients that were less educated, low-income or do not possess health insurance are less likely to be screened for prostate cancer. Physician recommendation was highly associated with increased prostate screening rates. Hewitt, Devesa, and Breen (2004) found that women with less educational attainment, low-income, or no insurance were the least likely to have cervical cancer screening. However, women who had contact with a primary care provider within the last year were more likely to be screened. Wolf et al. (2006) reported that underutilization of screening by the socioeconomically disadvantaged may be due to healthcare providers' barriers whether than individual patient characteristics. Limited literature was available that examined healthcare providers use of screening guidelines as it relates to patients who were less educated, low-income, or without insurance.

A. **Research Implications**

Further research is needed to explore healthcare providers' breast cancer screening practices and how these practices impact women with less than a high school education, with low-income, and with no insurance. Future research is needed to understand healthcare providers' rationale for selecting certain guidelines. Healthcare providers need to understand that their healthcare practices may hinder the women with less than a high school education, with low-income, and with no insurance from obtaining screening. Healthcare providers need to be more sensitive to the needs of women with lower socioeconomic statuses. Further studies are also needed to explore healthcare providers' rationale for not screening women with less than a high school education any differently than women with some college education or women with low-income any differently than women of high income status.

B. Practice Implications

No standard consensus exists among the major healthcare organizations regarding breast cancer screening guidelines. A consensus for clinical practice for recommending breast cancer screening guidelines would reduce controversy and confusion for the both the public and healthcare providers. Healthcare providers need to be more aware of the issues surrounding women with less than a high school education, low-income, and with no insurance. Health disparities related to breast health have not been reduced for these women. Recent efforts from government and healthcare organizations have focused attention on this population by increasing access to mammograms through free or low-cost programs but still much more is needed to address the barriers that these women face in seeking preventative care. Healthcare providers need to be made aware of the role they may play in creating the barriers for women with less education, low- income, and no insurance.

Medical and nursing school curriculum should address strategies in clinical practice that will focus on improving breast cancer screening for women with less than a high school education, low-income, and with no insurance. Physicians and advanced practices nurses need to be more aggressive in screening women that are less educated, low-income, and without insurance and become advocates for these women to ensure that they receive adequate screening.

C. **Limitations**

Several limitations exist in this study. First, this study only included obstetricians/gynecologists and family practice physicians and advanced practice nurses, which may not reflect the perceptions of other healthcare providers from other specialties. Second, this study was limited to Chicago and the surrounding metropolitan area which may not be representative of findings across the United States. Third, the participants may have provided socially desirable responses.

D. **Conclusion**

The findings of this study contribute to knowledge for understanding which healthcare organization's guidelines physicians and advanced practice nurses use and what criteria are used to screen women over 40 not at high risk of different education, income, and insurance statuses. The findings of this study also indicate that healthcare providers used guidelines albeit different ones by physicians and the advanced practice nurses. Healthcare providers need to acknowledge how healthcare practices impact women who are less educated, low-income and uninsured. Healthcare providers need to realize that they have a key role in becoming more vigilant in increasing mammography utilization among less educated, low-income, and uninsured women.

Appendix A

Demographic Questionnaire

- 1) What is your area of specialty?
- 2) What is your length of time in practice?
- 3) How many women do you see in your practice for breast cancer screening per month?
- 4) What is your highest level of education?

Appendix B

Guidelines Definitions

ACS	Recommends women aged 40 and over obtain mammograms and clinical breast exams yearly, and women 18-39 have clinical breast examinations every 3 years and perform monthly breast self-examinations (BSEs) starting at age 18.
ACOG	Recommends mammograms every year beginning at age 40 and clinical breast exams at least every 1-3 years ages 20-39, and every year beginning at age 40.
USPSTF	Recommends against routine screening mammography for women aged 40-49, but recommends biennial screening mammography for women aged 50-74, and suggests that current evidence is insufficient to assess the additional benefits and harms of examination, and recommends against teaching BSE

Appendix C

Criteria Definitions	
Ability to pay	The women having the capacity to pay.
Same criteria	Use of the same criteria for all women.
Disagreement	The lack of consensus among the guidelines.
Concern	A worry about a women's health.
Explanation	To clarify the guidelines.
Instruction	To teach the women to start at 40 years of age.
Family history	The history of family members with breast cancer.
Age	The current age of the women.
Pros/Cons	The advantages and disadvantages to performing breast cancer screening.
More detail	To discuss the particulars of the guidelines.
Vigilance for African American women	To act diligently out of concern for African American women.
Personal history	The past events in the woman's life.
Empower women	To give power to the women to obtain breast cancer screening.
Current complaints	Any breast complaints on physical exam.
Recommendation	To advise the women to obtain breast cancer screening.
Referral	To refer the women to other facilities that provides mammograms.
Convenience	The ease of obtaining a mammogram.
Other guidelines	To use other professional societies guidelines.
Controversy	The awareness of the disagreement among the healthcare organizations.
Patient preference	The choice of the patient.
Physical changes	Any physical change to the breast.
Yearly BSE	To instruct the woman to perform BSE yearly.
Annual at 40	Every woman will have a mammogram every year beginning at age 40.
Research	To study the current literature for breast cancer screening.

Appendix D

Personal Judgment Definitions	
No personal judgment	There is no personal judgment used to screen women for breast cancer.
Vigilance for African American women	To act diligently out of concern for African American women.
Physical examination	To determine the need for breast cancer screening based upon a physical exam.
Risk factors	The elements contributing to the chance of getting breast cancer.
Family history	The history of family members with breast cancer.
Tool	BSE is a tool for women to become familiar with their breasts.
Pros/Cons	The advantages and disadvantages to performing breast cancer screening.
Transportation	The ability to be transported to a breast cancer screening facility.
Personal experience	The individual experience of the healthcare provider.
Patient's decision	The patient's choice to decide to obtain breast cancer screening.
Experience	The professional experience of the healthcare provider.
Ability to pay	The women having the capacity to pay.
Fear	The act of being afraid of mammography.
Difficulty	Women who have difficult breasts to examine on physical exam.
Discomfort	The absence of ease of breast cancer screening tests.
Useless	The use of BSE is futile.
Resistance	To oppose obtaining breast cancer screening.
Recommendation	To advise the women to obtain breast cancer screening.
Explanation	To clarify the guidelines.
Controversy	The disagreement among the major healthcare organizations.
Research	The current literature on breast cancer screening.
Personal History	The past events in the woman's life.
Everyone should have	All women should obtain a mammogram.
Personal preference	The choice of the patient.
Best interest	For the benefit of the patient.
Public awareness	The realization for the need for breast cancer screening
Concern	Degree of worry for the patient.
Request	To ask for breast cancer screening.
Earlier screening	To screen women sooner than recommended.
Physical changes	Any physical change to the breast.

Appendix D (continued)

Cost	The women having the capacity to pay.
Family history	The history of family members with breast cancer.
More pushy	To be more aggressive about screening.
Follow-up	An issue for not being compliant.
Explanation	To clarify the guidelines.
Lack of knowledge	Not being aware of the guidelines.
Misunderstanding	To not comprehend the guidelines.
Fear	The act of being afraid of mammography.
Same guidelines	To use the same guidelines for all women.
Educate	To teach the patient about breast cancer screening.
Personal decision	The patient's choice to decide to obtain breast cancer screening.

Appendix E

Education Definitions	
No difference	No distinction in screening women of different education.
No concerns	No worries.
Higher death rates	To teach about the higher death rates in the underserved populations.
Less accessibility	To have less availability to screening.
More accessibility	To make screening more available.
Inform	To make breast cancer screening guidelines known.
Referral	To refer the woman to other facilities that provides mammograms.
Understanding	To have a comprehension of breast cancer screening.
Resources	A source of support for breast cancer screening.
Assumption	To not take for granted college graduates understand breast cancer screening.
Fear	The act of being afraid of mammography.
Patient as individual	To treat each patient as a distinct entity.
Personal history	The past events in the woman's life.
Different terminology	To use other terms for better understanding.
Self-empowered	To feel enabled to obtain breast cancer screening.
Importance	To impart the significance of breast cancer screening.
Compliance	To conform to breast cancer screening guidelines.
Priorities	Things that take precedence in life.
Discomfort	The absence of ease of breast cancer screening tests.
Current complaints	Any present time breast problems.
Screening tool	BSE is a tool for women to become familiar with their breasts.
Recommendation	To advise the women to obtain breast cancer screening.
Follow through	A concern for not being compliant.
Simple terminology	To use words that easier not hard to understand.
Don't follow	Women do not follow the guidelines.

Appendix F

Insurance Definitions	
No difference	No distinction in screening women of different insurance status.
Ability to find a place	To be able to find breast cancer screening facilities.
More difficult	To be hard to do for women without insurance.
More work	To require more effort for women without insurance.
Hassle	To be troublesome for women without insurance.
No comparison	No similarities in how women with different insurance statuses are screened.
Without difficulty	To be able to screen women with insurance with ease.
Referral	To refer the woman to other facilities that provides mammograms.
Resources	A source of support for breast cancer screening.
Convenience	The ease of obtaining a mammogram.
Stress importance	To impart the significance of breast cancer screening.
Barrier	To hinder from obtaining screening.
No concern	No worries for women of different insurance statuses.
Limiting	Having restrictions without insurance.
SES factors	The social and economic factors.
Background	The patient's experience.
Cost	The women having the capacity to pay.
No issue	With no difficulty.
Grants	Assistance with paying for screening.
Different opinion	Several beliefs for screening guidelines.
Normal mammograms	Women can go longer for screening with normal mammograms.
Prevention	The practice of attempting to stop disease.
Reinforcement	To encourage breast cancer screening.
Social work	To refer the women to social workers.
Follow-up	An issue for not being compliant.
Explanation	To clarify the guidelines.
Recommendation	To advise the women to obtain breast cancer screening.
Same guidelines	To use the same guidelines for all women.
Priorities	Things that take precedence in life.
Later start	To screen women later.
Compliance	To conform to breast cancer screening guidelines.
Follow through	A concern for not being compliant.
Understanding	To have a comprehension of breast cancer screening.

Appendix G

Income Definitions	
No influence	To have no effect on screening practices.
Insurance concern	Not having insurance is more of a worry.
No difference	No distinction in screening women of different income status.
Referral	To refer the woman to other facilities that provides mammograms.
No issue	With no difficulty.
An issue	With difficulty.
Greater access	Having more means to obtain screening.
Limited access	Having less means to obtain screening.
Poor quality	Inferior mammograms.
Denied access	No means to obtain screening.
Social issues	A barrier to obtaining screening.
Priorities	Things that take precedence in life.
Age	The current age of the women.
Risk factors	To have an increased susceptibility.
Resources	A source of support for breast cancer screening.
Follow through	A concern for not being compliant.
Transportation	The ability to be transported to a breast cancer screening facility.
Ability to pay	The women having the capacity to pay.
Understanding	To have a comprehension of breast cancer screening.
Explanation	To clarify the guidelines.
Importance	To impart the significance of breast cancer screening.
Barriers	To hinder from obtaining screening.
Medicare/Medicaid	A type of insurance coverage.
High co-pay	An issue for not obtaining screening.
Recommendation	To advise the women to obtain breast cancer screening.
Prevention	The practice of attempting to stop disease.
Assumption	To not take for granted college graduates understand breast cancer screening.
Treatment	A concern to not follow up.
Follow-up	A concern for not obtaining screening.
Social work	To refer the women to social workers.
Grants	Assistance with paying for screening.
Seek care	High income women are more likely to search out care.
Convenience	The ease of obtaining a mammogram.
Don't follow	To not follow the recommendations.
Confusion	The lack of clarity about the guidelines.
No concerns	No worries for women of different income statuses.
Later start	To screen women later
Educate	To teach the patient about breast cancer screening.

Appendix G (continued)

Compliance	To conform to breast cancer screening guidelines.
Choice	The patient's option to choose or not to choose screening.

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