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Pain and Discomfort With Film Screen Mammography: Is There
a Difference in Intensity Between Young and Elderly Women?

by

Tammy Baltic

THESIS

Submitted in partial satisfaction of the requirements for the degree of

MASTER OF SCIENCE

in

NURSING

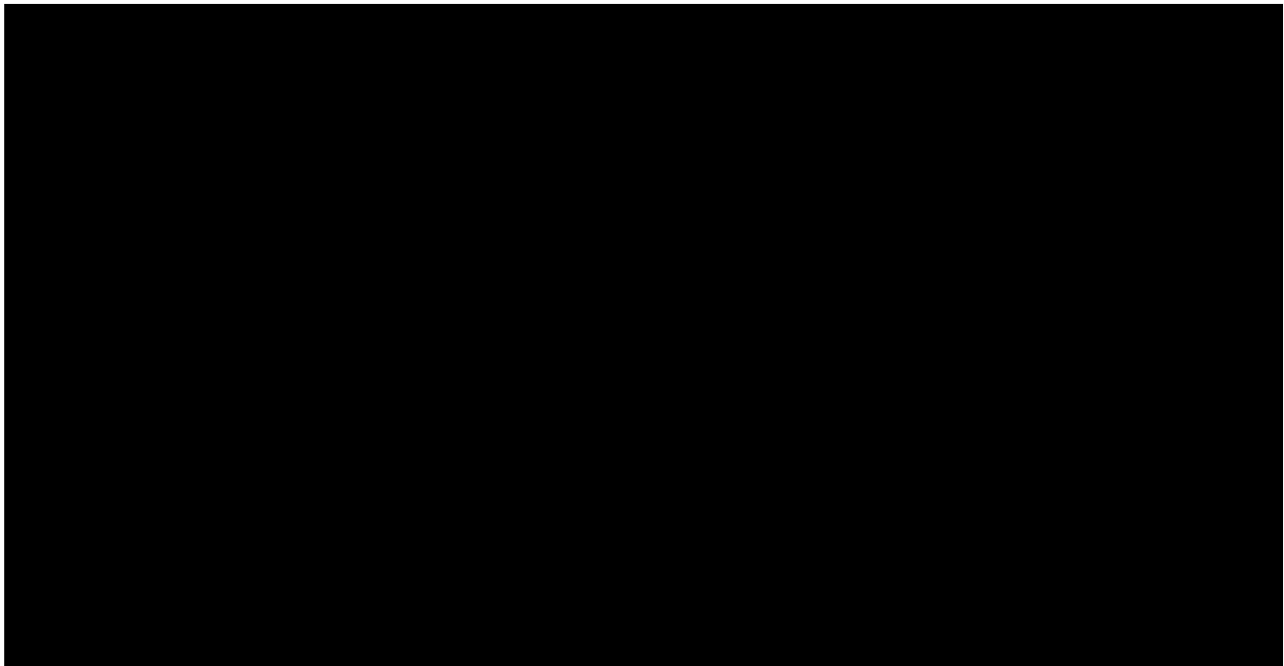
in the

GRADUATE DIVISION

of the

UNIVERSITY OF CALIFORNIA

San Francisco



Dedication

I would like to dedicate this work to the memory of my father, who would be very proud of my accomplishments. He will be missing another of my graduations, but his spirit is always with me.

Acknowledgements

I would like to thank my partner, Theresa, for her never-ending support. Without her, I would still be procrastinating about whether or not to get my masters degree. Theresa has braved mood swings, anxiety attacks, restless nights, and chronic sleep deprivation, and deserves a medal.

Special thanks to my mother who has always been there for me. I'm sure it was those strong German genes I acquired from you that gave me the stamina to finish this degree.

I am also grateful for family and friends who put up with my absence for the past two years, and who tolerated my obsession with this thesis whenever we did get together. Thank you for the unrelenting support and encouragement.

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CHAPTER I: INTRODUCTION TO THE PROBLEM

Film screen mammography (FSM) plays an important role in the early detection of breast cancer. Despite its usefulness as a screening tool, some women still fail to have a mammogram. Data suggest that only 40% of women are obtaining mammograms according to American Cancer Society's guidelines, (Mor, Pacala, & Rakowski, 1992).

One of the most predictable risk factors for developing breast cancer is advancing age (Thompson, Kessler, & Boss, 1989). However, many women over 50 years of age have not had a mammogram. According to the National Health Interview Survey (1990), annual mammography screening rates were highest for women between 50 and 59 years of age (39%) and decreased progressively with increasing age: 60-69 (35.5%), 70-79 (29.1%), and 80+ (18%). Many factors appear to influence a woman's decision to undergo mammography. These include, but are not limited to, accessibility, cost, physician referral, embarrassment, and fear of pain and discomfort (Buechner, 1987; Clark, 1992; Lane & Fine 1983; Redder, Berkanovic, & Marcus, 1980; Rimer, Keintz, Kessler, Engstrom, & Rosan, 1989; Stomper et al., 1988). However, little is known about the pain or discomfort experienced by elderly women during mammography that might influence their choices about having an initial or subsequent mammogram.

For some women considering mammography, anecdotal reports of painful experiences have been a source of anxiety and may be a barrier to the use of mammography (Kornguth et al., 1993; Nielsen,

Miaskowski, Dibble, Beber, Altman, & McCoy, 1991; Nielsen, Miaskowski, & Dibble, 1993; Stomper et al., 1988; Wolosin, 1989). It is difficult to know just how much of a deterrent the fear of a painful mammogram is for those women who have never had one. Most studies dealing with the issue of pain and mammography measured the prevalence of pain and discomfort during the procedure. Such populations consisted of those women who decided to have a mammogram and cannot be generalized to those that have not. Retrospectively, Wolosin (1989) found that over 50% of the women in his study found the mammogram less painful than they had imagined. Pain was an expected event during mammography.

Significance

Breast cancer is more prevalent with increasing age, but the incidence of mammography use decreases with age (Anda, Sienko, Remington, Gentry, & Marks, 1990; Costanza, 1992; Fox, Murata, & Stein, 1991; National Health Interview Survey, 1990). However, the sensitivity of FSM, as a screening tool, increases in older women (Kerlikowske et al., 1993). Very little research has been done comparing differences in pain and discomfort during FSM between younger and older women. Only one study (Stomper et al., 1988) found that patient age was not a contributing factor to the degree of discomfort experienced during FSM. Therefore, examining differences in pain and discomfort between younger and elderly women may provide information to help prepare elderly women for this procedure. The provision of accurate information and strategies

for coping with the procedure may increase the use of this life saving procedure with elderly women.

Purposes of the Study - The purposes of this study are:

1. To determine if there are differences in pain intensity scores, using a Visual Analog Scale (VAS), between young women and elderly women undergoing FSM.
2. To determine if there are differences in pain intensity scores, using a descriptive rating scale, between young women and elderly women undergoing FSM.
3. To determine if there are differences in discomfort intensity ratings, using a VAS, between young women and elderly women undergoing FSM.
4. To determine if there are differences in discomfort intensity ratings, using a descriptive rating scale, between young women and elderly women undergoing FSM.

Assumptions - The underlying assumption in this study is that:

1. Pain is a multidimensional phenomena.

Definition of Terms - The following terms were used in this study:

1. Film screen mammography - an x-ray of a breast used to screen asymptomatic women for breast cancer.
2. Pain intensity - a subjective self-report of the amount of pain experienced during FSM. Pain was measured using a Visual Analog Scale (VAS) and a Descriptive Rating Scale.
3. Elderly women - all women in the sample who were 65 years of age or older.

4. Young women - all women in the sample who were less than 65 years of age.

CHAPTER II: LITERATURE REVIEW

Introduction

Several factors, including ethnicity, menopausal status, breast tenderness, and age, have been evaluated to determine if they influence a woman's experience of pain during mammography. While research on mammogram-related pain is limited, few would argue that pain and discomfort are absent during the procedure. Reports of painful mammograms range from 6% (n=37) (Rutter, Calnan, Vaile, Field, & Wade, 1992) to 24.2% (n=128) (Nielsen et al., 1991). Reports of discomfort during FSM range from 23.4% (n=128) (Nielsen et al., 1991) to 49% (n=100) (Brew, Billings, & Chisholm, 1989). The primary cause of discomfort or pain is compression of breast tissue, which is necessary to lower radiation exposure and improve resolution and diagnostic quality of the mammogram (Ecklund, 1991; Sullivan, Beam, Goodman, & Watt, 1991; Tanner, 1992). Controversy exists in the literature about what role actual or feared pain and discomfort plays as a deterrent to FSM. Even less is known about the relationship between age and pain or discomfort during FSM.

Aging and Pain

Early studies on pain perception in the elderly looked at changes in the central and peripheral nervous systems. The aging central and peripheral nervous systems as well as the aging musculoskeletal system exhibit nerve, muscle, and neuromuscular junction deterioration which can result in altered synthesis, mobilization, and release of neurotransmitters; reduced conduction velocity; and decrease in the number of neurotransmitter receptors and

endogenous opiate receptors (Wall, 1990). A significant decrease in the number of myelinated nerve fibers in the peripheral nervous system has also been found in association with aging (Corbin, & Gardner, 1937). Other factors, such as changes in elasticity of the skin and decreased number of pain receptor end organs, are also thought to affect pain perception in the elderly (Corso, 1971). Such physiological changes suggest that with increasing age, one would experience a decrease in pain perception.

Subsequent studies looking at changes in pain perception in the elderly have produced conflicting results (Dorfman, & Bosley, 1979; Hardy, Wolff, & Goodell, 1943; Harkins, & Chapman, 1977; Harkins, Price, & Martelli, 1986; Herzberg, 1958; Howell, 1949; Schludermann, & Zubek, 1962; Sherman, 1943; Sherman, & Robillard, 1964; Verrillo, 1980). Results of the studies cited above should be interpreted cautiously. In all of these studies, pain was not defined and only the sensory aspect of pain was measured. The words 'old' and 'elderly' were freely interchanged, and the ages of the 'old' and 'elderly' ranged from 50 to 80 years. There was no comparison made based on chronological versus biological age differences in the subjects. All subjects were described as 'normal' and 'healthy,' but none of the studies defined either term. Most importantly, none of the studies mentioned gender differences and pain perception in the elderly. In general, it appears that as we age, there are changes in sensory mechanisms that may affect the way we interpret pain. However, whether there are gender differences in pain perception as one ages remains to be determined.

No one has explored whether replacement hormones or medications might effect the changes seen in postmenopausal breast tissue. We do know that after menopause the glandular tissue of women's breasts atrophies and is replaced by fat (Moe, 1990). Fortunately, this change allows clearer images in FSM, making mammograms more accurate (Kerlikowske et al., 1993). Additionally, no one has studied whether changes in breast tissue affect the elderly woman's perception of discomfort or pain.

Pain and Discomfort with Mammography

Several studies have been done to evaluate the relationship between pain or discomfort and mammography. A survey of 1847 asymptomatic women ranging in age from 25 to 86 (median 50) years was done to determine how much pain they experienced during FSM (Stomper et al., 1988). The women were asked to grade their discomfort on a six point scale ranging from "no discomfort" to "severe pain," and to judge if pain would deter them from having another mammogram. Of the women surveyed, 1157 had had a prior mammogram. Forty-nine percent of the women experienced no discomfort, 39% had mild discomfort, 9% moderate discomfort, 1% severe discomfort, and 1% moderate pain. The relationship of expected and actual discomfort was also examined. Eleven percent of the women experienced more pain then they had expected. The factor associated most with FSM discomfort was prior expectation of moderate or greater discomfort ($p < .0001$). The results of this study failed to demonstrate a relationship between pain or

discomfort with age or menopausal status. No women reported that pain would deter them from having future mammograms.

Wolosin (1989) surveyed 985 women following FSM to determine if they perceived the experience more or less painful than they had thought it would be. Women ranged in age from 21 to 87 years and 55% were having their first mammogram. Fifteen percent of the women found FSM to be more painful than they had imagined. However, over 50% of the women found FSM less painful than they had imagined ($p < .001$). Wolosin did not measure actual pain experienced among those who found it less painful than imagined, or how many had had previous mammograms. The relationship between pain or discomfort with FSM and age was not explored.

In another study, 203 women rated their pain on a four point descriptive scale following FSM (Brew et al., 1989). Those rating their experience painless or uncomfortable (but not too bad) were considered not to have significant pain. Results showed that 49% of the women found the procedure uncomfortable, 4% found it painful, and 0.5% found it very painful. The researchers concluded that only 4.4% of the women experienced significant pain during FSM. Brew and colleagues did not examine the relationship between pain or discomfort and age.

To determine if women experienced pain with FSM, Nielsen and colleagues (1991) took a convenience sample of 272 women from a low-cost screening clinic and asked them to describe their experience, using descriptive rating scales to quantify the amount of pain, discomfort, and anxiety experienced during the procedure. The

researchers found that 47.1% of the women reported pain and/or discomfort during the procedure. Of this 47.1%, 24.2% reported painful sensations, 24.4% reported feelings of discomfort, and 52.4% reported both sensations. The authors did not describe any age-related differences in pain or discomfort with FSM.

In an attempt to identify the nature of pain and discomfort experienced with FSM, Rutter and colleagues (1992) looked at 597 women invited routinely for FSM in a mobile screening unit. This group ranged in age from 50 to 64 years. Analysis of data from a descriptive questionnaire about the discomfort or pain experienced during the procedure determined that 35% of these women reported discomfort and 6% reported pain. The adjective used most often to describe the sensation experienced during FSM was "crushing." Five to ten minutes after FSM, women reported less discomfort and pain; 4% still had sensations of discomfort; and 0.7% still had pain. From these data, it was deduced that since pain and discomfort were generally short-lived, these phenomenon had little, if any, effect on women returning for further screening. Most of the women (402 of 593) in this sample reported that the discomfort of FSM was less than they had expected. The researchers concluded that the most important measure to predict discomfort during FSM was the expectation of pain. The relationship between pain or discomfort and age-related differences was not addressed by Rutter and colleagues.

To investigate the prevalence and severity of pain and discomfort with FSM, Nielsen and colleagues (1993) compared two pilot studies

of women undergoing FSM on two mobile screening units. The first sample consisted primarily of black, socioeconomically-disadvantaged women (N=272); the second sample consisted primarily of white, middle-income women (N=240). In both studies, nurse interviewers used visual analogue scales, descriptive rating scales and a portion of the McGill-Melzack Pain Inventory to collect data. In the first group, 47% of the women reported pain or discomfort during the procedure. While 70% of the women in the second group reported these sensations. In both groups, an increased level of anxiety was associated with increased levels of pain and discomfort during FSM. Nielsen and colleagues did not explore the relationship between pain or discomfort and age-related differences.

In an attempt to increase compliance with screening, Kornguth and colleagues (1993) evaluated the impact of patient-controlled compression during the procedure to decrease the pain and discomfort during FSM. One hundred and nine women undergoing screening mammography at a hospital-based outpatient clinic were surveyed during and after the procedure. Ages ranged from 32 to 71 years, and there was an even distribution among the women in terms of pre and post menopausal status. Twenty-six percent of the women (n=28) were currently undergoing treatment with exogenous hormones and 32% were having their first mammogram. The women were randomly assigned to one of two groups, namely; technologist-only compression of both breasts or patient-compression of one breast and technologist-compression of the other.

During the mammogram, and after each compression, the women rated their pain on a six item descriptive rating scale ranging from very comfortable to painful and intolerable. This interventional study found that, in most cases (93.5%), self-compression produced imaging as good as the technologists, as long as the technologist compression was completed first. There was a significant association between breast density and pain scores, the denser the breast the higher the pain score ($p = <05$).

Fifty-six percent of the women in this study (Kornguth et al., 1993) reported no difference in pain produced by either technologist compression or self-compression. Of the 43% that did report a difference, 71% found self-compression less painful ($p < .003$). Seventy-eight percent of the women stated that they would return for FSM in one year. Reasons for not returning were not reported. Also, 22% ($n=24$) said they had taken pain medication or a tranquilizer on the day of mammography. Why women decided to take medications, prior to the procedure, was not explored by the researchers. The relationship between pain or discomfort and age-related differences was not explored in this study.

Although pain and discomfort associated with FSM is dismissed by some, research shows that it is prevalent and that it may influence womens' choices about an initial or subsequent mammogram. One cannot assume that women who say they will return for future mammograms will actually do so. Caution must be taken in interpreting the results of this research. It is difficult to measure expected pain or discomfort and its relation to experienced pain or

discomfort when all of the studies included women who had experienced prior mammograms. Additionally, results cannot be generalized to women who have chosen not to have FSM. It is the women who have elected not to have FSM that should be studied to determine the role that discomfort or pain plays in the decision to have FSM.

The descriptive rating scales used in the studies described previously (Brew et al., 1989; Kronguth et al., 1993; Stomper et al., 1988), combined the terms pain and discomfort in the same scale. In addition, descriptive rating scales may be culturally limited. From the studies cited above, it is clear that, during FSM, "discomfort" is more prevalent than "pain." Or, perhaps "discomfort" is a more acceptable term for expressing "pain?" More importantly, is the sensation of "discomfort" sufficient to prevent women from obtaining subsequent mammograms?

Summary

A neglected area in research about pain and discomfort during FSM is the possible differences between younger women and older women. According to Constanza and colleagues (1992), women 65 and older make up 14% of the female population, but account for 43% of invasive breast cancer. Since increased age seems to correlate with decreased use of FSM (Anda et al., 1990), it is important to focus on older women's experiences of pain and discomfort during FSM.

In summary, the results of the studies on pain and discomfort during FSM suggest that these sensations are experienced by a

significant number of women. However, the studies done to date, have not explore the differences in pain and discomfort intensity between young women and elderly women undergoing FSM. Nor have they compared the results obtained from visual analog scales (VAS) and descriptive rating scales of pain and discomfort.

This study will determine if there are differences in pain and discomfort intensity during FSM between young and elderly women using both VAS and descriptive rating scales. The findings may provide information to develop strategies to assist older women to better cope with the procedure.

CHAPTER III: METHODOLOGY

Research Design

This study employed a descriptive, correlational design. The data reported in this study were collected as part of a larger study that investigated the sensations of pain and discomfort associated with having a mammogram.

Sample and Setting

A total of 16 mammography screening facilities throughout the state of California participated in this study. The study consisted of a convenience sample of women who were able to read and write English and agreeded to participate.

Instruments

1. Demographic Questionnaire - (see Appendix A)

a) Description - the demographic questionnaire is a self-report questionnaire recording age, marital status, educational level, ethnicity, generation in United States, employment status, yearly income, diagnosis of breast cancer, previous experience with mammography, and family history of breast cancer.

b) Scoring - descriptive data and frequency distributions were generated.

c) Reliability and Validity - the demographic questionnaire was developed by a panel of experts in oncology nursing and has been used in previous studies.

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2. Visual Analogue Scales for Pain Intensity and

Discomfort - (see Appendix B)

a) Description - the Visual Analogue scales for pain intensity and discomfort are horizontal 10 cm lines with a verbal anchor at each end of the line. On the left hand side of the line the anchor was "no pain" and on the right hand side of the line, of the pain intensity VAS, the anchor was "pain as bad as you can imagine". The Visual Analogue Scale for discomfort is identical to the one for pain, except that the word discomfort was substituted for pain. Patients were asked to tell how much pain and discomfort they experienced during their mammogram by making a mark on the line between the verbal anchors.

b) Scoring - VAS was scored using the Summa Sketch II to numerical ratings of pain intensity and discomfort intensity.

c) Reliability and Validity - investigators have found the VAS to be a reliable and valid measurement tool (Wewers & Lowe, 1990). However, since pain is not a static phenomenon, the reliability of any pain rating scale is difficult to establish. The validity of the VAS is difficult to establish since there is no absolute measure of pain intensity (Wewers & Lowe, 1990).

3. Descriptive Rating Scales of Pain Intensity and

Discomfort - (see Appendix C)

a) Description - the descriptive rating scales for pain intensity and discomfort consist of a vertical row of verbal descriptors (six on each scale). For pain intensity the choices are: no pain, very mild pain, mild pain, moderate pain, severe pain,

extreme pain. For discomfort the choices are: very comfortable, comfortable, mildly uncomfortable, uncomfortable but tolerable, very uncomfortable, extremely uncomfortable. Patients were asked to circle the words listed that best described the amount of pain or discomfort they had experienced during the mammogram.

b) Scoring - A numeric rating was assigned to each word or group of words for each of the scales as follows: for the pain scale; no pain = 0; very mild pain = 1; mild pain = 2; moderate pain = 3; severe pain = 4; extreme pain = 5. For the discomfort scale; very comfortable = 0; comfortable = 1; mildly uncomfortable = 2; uncomfortable but tolerable = 3; very uncomfortable = 4; extremely uncomfortable = 5.

c) Reliability and validity - the validity of a descriptive rating scale is difficult to establish since there is no absolute measure of pain intensity (Wewers, & Lowe, 1990). Since pain is not a static phenomenon, reliability of a pain rating scale is also difficult to establish (Wewers, & Lowe 1990). However, a number of researchers have found that rating scales are reliable and valid measures of perceived pain intensity (Downie, W. W., Leathon, P. A., Rhind, V. M., Wright, V., Brarcho, J. A., & Anderson, J. A., 1978; Ohnhaus, & Adler, 1975).

Procedure

The study was approved by the Committee on Research at San Francisco State University and by each of the Human Subjects Committees at the individual mammography screening sites, as necessary. Mammograms were conducted in either fully equipped

mammography vans or screening facilities. The mammograms were performed by licensed radiological technologists. In order to obtain a high quality mammogram, adequate compression was applied to the breast, and medial-lateral and cephalo-caudal views were obtained. However, if the compression produced pain, the degree of compression was reduced to a level which was considered "tolerable" by the woman.

Women were approached by one of the investigators at the time of arrival for the mammography appointment. After obtaining informed consent, women were asked to complete the Part I questionnaire (Appendix D). Part I contained questions on demographic information and a descriptive rating scale for anxiety. Immediately following the procedure, the women were asked to complete the Part II questionnaire (Appendix E). Part II contained visual analogue scales for pain and discomfort, the McGill Pain Rating Index, descriptive rating scales for pain and discomfort, an Attitude Toward Mammography Scale, and two questions asking when the woman would return to have another mammogram.

Data Analysis

Data were analyzed using the CRUNCH (R) Statistical Software Package. Descriptive statistics and frequency distributions were generated from the study data. In order to determine if there were differences in the intensity of pain or discomfort between young and elderly women, using a VAS, independent Student's t-tests were performed on the data collected. In order to determine if there were differences in pain or discomfort intensity between younger and

elderly women, using a descriptive rating scale, Chi square analyses were performed on the data collected.

Chapter Four: Results

1. Sample Demographics

a. Women <65 years

The demographic characteristics of the young women (<65) are summarized in Table 1. The younger participants (n=481) ranged in age from 26 to 64 years (mean 48 years, S.D. 8.5) and had an average of two years of college education (mean 14 years, S.D. 3.3). Almost half of these women (49.6%) were married/partnered, and had an average total yearly family income between 30 to 40 thousand dollars. Employment status varied: 48.2% worked full-time, 16.3% worked part-time, 8.8% were self-employed and the rest (26.7%) were unemployed. The younger women were primarily Caucasian (36.7%). However, other ethnic groups were included: Blacks 22.1%, Pacific Islanders 17.7%, Hispanics 11.0%, Asians 9.2% and the remaining 3.3% were from mixed ethnic backgrounds. Despite their ethnic diversity, the majority of women (75.7%) were born in the United States. A small percentage of these women had been diagnosed with breast cancer in the past (2.3%) and a rather large percent had had a previous mammogram (77.8%).

b. Women \geq 65 years

The demographic characteristics of the elderly women (\geq 65) are summarized in Table 1. The elderly participants (n=123) ranged in age between 65 to 85 years (mean 72 years, S.D. 5.6) and had an average of one year of college education (mean 13 years, S.D. 3.3). Only 40.2% of these women were married, with the largest group, 43.4%, being widowed. The average total yearly family income of

these women was 10 to 20 thousand dollars. The majority of this group was retired 71.7%, with 4.2% working full-time, 5.0% working part-time, 3.3% were self-employed, and the rest (15.8%) were unemployed. Again, participants were primarily Caucasian 44.6%, but other ethnic groups were represented including: 25.6% Pacific Islanders, 15.2% Blacks, 8.26% Asians, 5.8% Hispanics and 2.5% from mixed ethnic backgrounds. Like the younger group, the majority of these elderly women, 75.6%, were born in the United States. Again, a small percentage of these women had been diagnosed in the past with breast cancer (9.9%) and a large number of them had had a previous mammogram (86.8%).

When comparing the young and elderly women undergoing FSM significant differences were demonstrated between the two groups in the areas of: education, yearly income, marital status, previous mammography experience, and a diagnosis of breast cancer. These differences are summarized in Table 2.

The young women in this sample had more education than their older counterparts ($t = 4.82$, $p = <.0001$) and reported a larger yearly family income ($t = 7.6$, $p = <.0001$). Also, more of the younger women were married or partnered ($\chi^2 6.4$, $p = <.01$). Older women were more likely to have been diagnosed with breast cancer in the past ($\chi^2 13.3$, $p = <.0005$) and had had more mammograms ($\chi^2 4.3$, $p = <.04$)

2. Study Purpose 1: Differences in pain intensity scores, using a VAS, between young and elderly women undergoing FSM

An independent Student's t-test was done to determine if there were differences in pain intensity scores, using a VAS, between young and elderly women undergoing FSM.

Results, summarized in Table 3, demonstrate that women <65 years of age reported a mean pain intensity rating of 12.7 (SD = 20.7) and women ≥ 65 years reported a mean pain intensity of 10.2 (SD = 19.2). There was no significant difference ($t = 1.15$, $p = >0.05$) in pain intensity scores between the young and elderly women undergoing FSM.

3. Study Purpose 2: Differences in pain intensity scores, using a descriptive rating scale, between young and elderly women undergoing FSM

A Chi Square analysis was done to determine if there was a difference in pain intensity scores, using a descriptive rating scale, for between young and elderly women undergoing FSM.

Results, summarized in Table 4, demonstrate that there was no significant difference in pain intensity ratings between the younger and elderly women undergoing FSM. Yet, when looking at this sample, pain ranging from very mild to severe, was reported by 49.4% (n=227) of the younger women and 44.6% (n=54) of the elderly.

4. Study Purpose 3: Differences in discomfort intensity scores, using a VAS, between young and elderly women undergoing FSM

An independent Student's t-test was done to determine if there was a difference in discomfort intensity ratings, using a VAS, between young and elderly women undergoing FSM.

Results summarized in Table 5 demonstrate that women <65 years reported a mean discomfort intensity rating of 20.3 (SD = 22.6) and women ≥ 65 years reported a mean discomfort intensity rating of 15.5 (SD = 22.9). There was a statistically significant difference ($t = 2.17$, $p = 0.04$) between the discomfort intensity scores between the younger and elderly women undergoing FSM with older women reporting significantly lower scores.

5. Study Purpose 4: Differences in discomfort intensity scores using a descriptive rating scale, between young and elderly women undergoing FSM

A Chi Square analysis was performed to determine if there was a difference in discomfort intensity ratings, using a descriptive rating scale, between the young and elderly women undergoing FSM.

Results summarized in Table 6 demonstrate that elderly women experienced significantly less discomfort while undergoing FSM ($X^2 11.8$, $p = <.01$). Discomfort, ranging from mild to extremely uncomfortable, was reported by 66.6% ($n=287$) of the young women and 48.7% ($n=57$) of the elderly women in this sample.

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Chapter V: DISCUSSION

The results of this study indicate that although there is no significant difference in pain intensity ratings between the young and elderly women in the sample, a large percentage of women reported experiencing pain ranging from 'very mild' to 'severe.' Forty-nine percent (n=227) of the younger women and 45% (n=54) of the elderly women experienced pain of some intensity. These percentages of women experiencing pain during FSM are higher than those reported previously (Brew, et al., 1989; Kronguth, et al., 1993; Nielsen, et al., 1991; Nielsen, et al., 1993; Rutter, et al., 1992; Stomper et al., 1988; Wolosin, 1989). The data suggest that in fact there is a considerable amount of pain experienced during FSM. How the pain experience influences women's choices about having an initial and subsequent mammograms was not addressed in this study. Perhaps the higher percentage of pain reported in this sample is related to the larger sample size (n=604), the instruments used to measure pain, and/or the demographic make-up of the sample itself.

The findings of this study demonstrate that there is a significant difference in discomfort intensity ratings between young and elderly women. Discomfort ranging from 'mild' to 'extremely uncomfortable' was reported by 66.6% (n=287) of the younger women and 48.7% (n=57) of the elderly women in this sample. Using a VAS, the elderly women, experienced significantly less discomfort during FSM ($t = 2.17, p = <.04$). The elderly women also experienced significantly less discomfort using a descriptive rating scale ($X^2 = 11.8, p = <.01$).

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This difference may be related to changes in pain perception or social and/or cultural differences.

The elderly women in this study experienced less discomfort with FSM, which supports previous research dealing with pain perception and the elderly. This decrease in pain perception might be related to physiological changes associated with aging (Corbin, & Gardner, 1937; Corso, 1971; Wall, 1990). Physiological changes may also alter the elderly's interpretation of pain or discomfort. Additionally, changes in postmenopausal breast tissue may contribute to less discomfort in elderly women undergoing FSM. Glandular breast tissue atrophies and is replaced by fat, which allows a clearer image of the breast (Moe, 1990). Perhaps such changes also alter sensory perception in breast tissue.

Although the instruments used in this study attempted to separate pain from discomfort, one must keep in mind the social stigma associated with "pain" and how this might effect the results. 'Discomfort' may be a more socially-acceptable term. Therefore, 'discomfort' must be considered a possible deterrant of FSM.

Limitations

Several limitations of this study need to be acknowledged. This sample was a self-selected group of women that had already chosen to have a mammogram. Perhaps fear of pain and discomfort kept other women from having a mammogram. Expectations of pain and discomfort were not measured in this sample. From the data, one cannot determine if pain or discomfort experienced during FSM in

this sample was more or less than the women had expected. There were no questions in this study about self-medication prior to FSM. If women premedicated themselves, perhaps pain and discomfort were expected. Did this study measure less painful experiences among women who premedicated themselves? Use of replacement hormones by the elderly women in the sample was not addressed. If replacement hormones were taken, did they have an effect on the pain intensity experienced? Since hormones can increase the density of breast tissue, perhaps more pressure would be needed to produce a clearer image? Increased pressure might cause increased pain and discomfort (Kornguth, et al., 1993). For these reasons, the results of this study may not provide an accurate measurement of pain or discomfort during FSM.

In general, this sample was well educated, so the results cannot be generalized to patients with less education. Also, the sample was ethnically diverse and the majority were born in the United States. Generalizations from these results cannot be applied to individual ethnic groups. Also, cultural values about pain and its expression may vary.

Lastly, limitations of the tool(s) are as follows; because pain is not a dynamic phenomenon, the reliability of any pain-rating scale is difficult to establish. The VAS is not a good measurement tool for the elderly (Werers & Lowe, 1990). The descriptive rating scale may not be an accurate measurement tool for different ethnic groups. Being born in the United States does not guarantee that English is one's primary language.

Future Research

Studies measuring expected pain and discomfort in women not seeking mammography would be advantageous. Interventional studies are needed to determine if self-compression during FSM is less painful but as accurate and to determine if premedicating before FSM significantly decreases pain/discomfort. Further research should be done to determine the effects of replacement hormones in elderly women and the effects of these medications on pain perception. Pain and discomfort with FSM, especially as a deterrent to having the procedure performed, should be addressed in future research.

Implications for Practice

This research may have implications for everyday nursing practice. Since pain and/or discomfort are present during FSM, perhaps we should routinely premedicate women with an NSAID or mild opiate to lessen their discomfort. Would more women undergo FSM if they did not fear pain/discomfort?

UNIVERSITY OF CALIFORNIA

References

- Anda, R. F., Sienko, D. G., Remington, P. L., Gentry, E. M., & Marks, J. S. (1990). Screening mammography for women 50 years of age and older: practices and trends. American Journal of Preventative Medicine, 6(3), 123-129.
- Brew, M. D., Billings, J. D., & Chisholm, R. J. (1989). Mammography and breast pain. Australian Radiology, 23(4), 335-336.
- Beuchner, J. S. (1987). Use of mammography for breast cancer screening. Rhode Island, 1987. MMWR. 1988; 37, 357-360.
- Clark, R. A. (1992). Economic issues in screening mammography. American Journal of Radiology, 158, 527-534.
- Corbin, K. & Gardner, E. (1937). Decrease in numbers of myelinated fibers in human spinal roots with age. Anatomical Record, 68, 63-74.
- Corso, J. F. (1971). Sensory processes and age effects in normal adults. Journal of Gerontology, 26(1), 90-105.
- Costanza, M. E. (1992). Breast cancer screening in older women: overview. The Journal of Gerontology, 47(special issue), 1-3.
- Constanza, M. E., Chair; Annas, G. J., Brown, M. L., Cassel, C. K., Champion, V., Cohen, H. J., Frame, P. S., Glasse, L., Mor, V., & Pauker, S. G. (1992). Supporting statements and rational. The Journal of Gerontology, 47(special issue), 7-16.

- Dorfman, L. J. & Bosley, T. M. (1979). Age related changes in peripheral and central nerve conduction in man. Neurology, 29, 38-44.
- Downie, W. W., Leathon, P. A., Rhind, V. M., Wright, V., Brarcho, J.A., & Anderson, J. A. (1978). Studies with pain rating scales. Annals of Rheumatic Diseases, 37, 378-381.
- Ecklund, C. W. (1991). Mammographic compression: science or art? Radiology, 181, 339-341.
- Fox, S. A., Murata, P. J., & Stein, J. A. (1991). The impact of physician compliance on screening mammography for older women. Archives of Internal Medicine, 151(1), 50-56.
- Hardy, J. D., Wolff, H. G., & Goodell, H. (1943). The threshold in man. American Journal of Psychology, 99, 744-751.
- Harkins, S. W., Price, D. D. & Martelli, M. (1986). Effects of age on pain perception: thermonociception. Journal of Gerontology, 13, 167-168.
- Harkins, S. W. & Chapman, R. C. (1977). The perception of induced dental pain in young and elderly women. Journal of Gerontology, 41(1), 58-63.
- Herzberg, F. (1958). Relationship of age to pain in dental operative procedures with rotating instruments. Journal of Gerontology, 13, 1647-168.
- Howell, T. H. (1949). Senile deterioration of central nervous system. British Medical Journal, 1, 407-408.
- Kerliowske, K., Grady, D., Barclay, J., Sickles, E. A., Eaton, A., & Ernster, V. (1993). Positive predictive value of screening

- mammography by age and family history of breast cancer. Journal of the American Medical Association, 270(20), 2444-2450.
- Kornguth, P. J., Rimer, B. K., Conaway, M. R., Sullivan, D. C., Catoe, K. E., Stout, A. L., & Brackett, J. S. (1993). Impact of patient controlled compression on the mammogram experience. Radiology, 186, 99-102.
- Lane, D. S., & Fine H. L. (1983). Compliance with mammography referrals: implications for breast cancer screening. New York Journal of Medicine, 83, 173-176.
- Moe, R. E. (1990). Breast diseases of elderly women. In Hazzard, W., Andres, R., Bierman, E. L., & Blass, J. P. (Eds), Principles of Geriatric Medicine and Gerontology (2nd ed). McGraw-Hill, 789-797.
- Mor, V., Pacala, J. T., & Rakowski, W. (1992). Mammography for older women: who uses, who benefits? The Journal of Gerontology, 47(special issue), 43-49.
- National Health Interview Survey. (1990). National Center for Health Statistics. Hyattsville, M. D. (unpublished data).
- Nielsen, B., Miaskowski, C., Dibble, S. L., Beber, B., Altman, N., & McCoy, C. B. (1991). Pain and discomfort associated with film screen mammography. Journal of the National Cancer Institute, 83(23), 1754-1756.
- Nielsen, B., Miaskowski, C., & Dibble, S. L. (1993). Pain with mammography: fact or fiction? Oncology Nursing Forum, 20(4), 639-642.

- Ohnhaus, E. E. & Adler, R. (1975). Methodological problems in the measurement of pain: a comparison between the verbal rating scale and the visual analogue scale. Pain, 1(4), 379.
- Redder, S., Berkanovic, E., & Marcus, A. C. (1980). Breast cancer detection behavior among urban women. Public Health Report, 95, 276-281.
- Rimer, B. K., Keintz, M. K., Kessler, H. B., Engstrom, P. F., & Rosan, J. R. (1989). Why women resist screening mammography: patient related barriers. Radiology, 172(1), 243-246.
- Rutter, D. R., Calnan, M., Vaile, M. S. B., Field, S., & Wade, K. A. (1992). Discomfort and pain during mammography: description, prediction, and prevention. British Medical Journal, 305(22), 443-445.
- Schludermann, E. & Zubek, J. P. (1962). Effect of age on pain sensitivity. Perceptual Motor Skills, 14, 295-301.
- Sherman, E. F. (1943). Sensitivity to pain. Canadian Medical Association Journal, 48, 437-441.
- Sherman, D. E. & Robillard, E. (1964). Sensitivity to pain in relation to age. Journal of American Geriatric Society, 12, 1037-1043.
- Stomper, P. C., Kopans, D. B., Sadowsky, N. L., Sonnenfeld, M. R., Swann, C. A., Gelman, R. S., Meyer, J. E., Jochelson, M. S., Hunt, M. S., & Allen, P. D. (1988). Is mammography painful? Archives of Internal Medicine, 148(3), 521-524.

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- Sullivan, D. D., Beam, C. A., Goodman, S. M., & Watt, D. L. (1991). Measurement of force applied during mammography. Radiology, 181, 335-357.
- Tanner, R. L. (1992). Mammographic unit compression force: acceptance test and quality control protocols. Radiology, 184, 45-58.
- Thompson, G. B., Kessler, L. G., & Boss, L. P. (1989). Breast cancer screening legislation in the United States: a commentary. American Journal of Public Health, 79, 1541-1543.
- Verrillo, R. T. (1980). Age related changes in sensitivity to vibration. Journal of Gerontology, 35(2), 185-193.
- Wall, R. T. (1990). Use of analgesics in the elderly. Clinics in Geriatric Medicine, 6(2), 345-364.
- Wewers, M. E. & Lowe, N. K. (1990). A critical review of visual analogue scales in the measurement of clinical phenomena. Research in Nursing & Health, 13, 227-236.
- Wolosin, R. J. (1989). The experience of screening mammography. The Journal of Family Practice, 29(5), 499-502.

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TABLE 1
Demographic Data

CHARACTERISTICS	WOMEN < 65 YEARS		WOMEN > 65 YEARS	
	MEAN	S.D.	MEAN	S.D.
AGE (years)	48	8.5	72	5.6
EDUCATION (years)	14	3.3	13	3.3
YEARLY INCOME (in thousand dollars)	31	2.8	24	1.7
	n	(%)	n	(%)
MARRIED/ PARTNERED	238	49.5	49	40.2
EMPLOYMENT				
Full time	231	48.2	5	4.2
Part time	78	16.3	6	5.0
Self employed	42	8.7	4	3.3
Other	128	26.7	105	87.5
ETHNICITY				
Caucasian	176	36.7	54	44.6
Black	106	22.1	16	13.2
Pacific Islander	85	17.7	31	25.6
Hispanic	53	11.0	7	5.8
Asian	44	9.2	10	8.3
Mixed Ethnic Background	16	3.3	3	2.5
DIAGNOSED W/BREAST CANCER IN PAST	11	2.3	12	9.9
PREVIOUS MAMMOGRAM	371	77.8	105	86.8
PAIN DURING FSM	227	49.4	54	44.6
DISCOMFORT DURING FSM	287	66.6	57	48.7

TABLE 2
Comparison of Demographic Characteristics of
Young and Elderly Women Undergoing FSM

CHARACTERISTICS	WOMEN (<65 years)	WOMEN (>65 years)	Statistic	Significance
	MEAN (S.D.)	MEAN (S.D.)	(t)	(p)
AGE (years)	48 (8.5)	72 (5.6)	37.7	<.0001
EDUCATION (years)	14 (3.3)	13 (3.3)	4.8	<.0001
YEARLY INCOME (in thousand dollars)	31 (2.8)	24 (1.7)	7.6	<.0001
	n (%)	n (%)	X²	(p)
MARRIED/ PARTNERED	238 (49.5)	49 (40.2)	6.4	<.01
EMPLOYMENT				
Employed	351 (73.2)	15 (12.5)	146.6	<.000
Other	128 (26.7)	105 (87.5)		
DIAGNOSED W/BREAST CANCER IN PAST				
Yes	11 (2.3)	12 (9.9)	13.3	<.0005
No	469 (97.7)	109 (90.1)		
PREVIOUS MAMMOGRAM				
Yes	371 (77.8)	105 (86.8)	4.3	<.04
No	106 (22.2)	16 (13.2)		

TABLE 3
Differences in Pain Intensity Scores, Using a VAS,
Between Young and Elderly Women Undergoing FSM

CHARACTERISTICS	WOMEN < 65 YEARS	WOMEN > 65 YEARS
n	449	109
MEAN	12.7	10.2
S.D.	20.7	19.2
		t=1.15 p=N.S.

TABLE 4
Differences in Pain Intensity Scores, Using a Descriptive Rating Scale,
Between Young and Elderly Women Undergoing FSM

	No Pain	Very Mild Pain	Mild Pain	Moderate/ Severe Pain	Total
n (< 65 years)	233 (50.7%)	105 (22.8%)	50 (10.9%)	72 (15.7%)	460
n (≥ 65 years)	67 (55.4%)	21 (17.4%)	18 (14.9%)	15 (12.4%)	121

$X^2=2.8$
 $p=N.S.$

TABLE 5
Differences in Discomfort Intensity Scores, Using a VAS,
Between Young and Elderly Women Undergoing FSM

CHARACTERISTICS	WOMEN < 65 YEARS	WOMEN > 65 YEARS
n	455	113
MEAN	20.3	15.5
S.D.	22.6	22.9

t=2.17
p<.04

TABLE 6

Differences in Discomfort Intensity Scores, Using a Descriptive Rating Scale, Between Young and Elderly Women Undergoing FSM

	COMFORTABLE	UNCOMFORTABLE	TOTAL
n (< 65 years)	144 (33.4%)	287 (66.6%)	431
n (≥ 65 years)	60 (51.3%)	57 (48.7%)	117
			$X^2=11.8$ $p<.01$

APPENDIX A:
DEMOGRAPHIC QUESTIONNAIRE

1. Your Age: _____

2. What is your current marital status?

- | | |
|--|--|
| <input type="checkbox"/> Married/Partnered | <input type="checkbox"/> Separated |
| <input type="checkbox"/> Widowed | <input type="checkbox"/> Never Married |
| <input type="checkbox"/> Divorced | <input type="checkbox"/> Not married but living together |

3. Circle the highest grade or year you completed in regular school, vocational school, college, or graduate professional training?

Grade School								High School					
-----								-----					
1	2	3	4	5	6	7	8	9	10	11	12		
College								Graduate School					
-----								-----					
	13	14	15	16	17	18	19	20	21	22	>22		

4. Circle the number that best describes your ethnic group:

- 1 American Indian
- 2 Asian (Chinese, Japanese, etc)
- 3 Black
- 4 Caucasian/White
- 5 Hispanic
- 6 Pacific Islander (Hawaiian, Philippine, Samoan, etc)
- 7 Mixed Ethnic Background
- 8 Other (specify) _____

5. Which generation are you in the United States?

- | | | |
|---------------------------------|---------------------------------|-----------------------------------|
| <input type="checkbox"/> First | <input type="checkbox"/> Third | <input type="checkbox"/> > Fourth |
| <input type="checkbox"/> Second | <input type="checkbox"/> Fourth | |

6. What is your current employment status?

- | | |
|--|-------------------------------------|
| <input type="checkbox"/> Full-time | <input type="checkbox"/> Retired |
| <input type="checkbox"/> Part-time | <input type="checkbox"/> Unemployed |
| <input type="checkbox"/> Self-employed | <input type="checkbox"/> Disability |
| <input type="checkbox"/> Homemaker | |

7. What is your total yearly family income?

- | | | |
|--|--|---|
| <input type="checkbox"/> <10,000 | <input type="checkbox"/> 40,001-50,000 | <input type="checkbox"/> 80,001-90,000 |
| <input type="checkbox"/> 10,000-20,000 | <input type="checkbox"/> 50,001-60,000 | <input type="checkbox"/> 90,001-100,000 |
| <input type="checkbox"/> 20,001-30,000 | <input type="checkbox"/> 60,001-70,000 | <input type="checkbox"/> >100,000 |
| <input type="checkbox"/> 30,001-40,000 | <input type="checkbox"/> 70,001-80,000 | |

8. How much caffeine do you usually have each day?

- | | |
|--|--|
| <input type="checkbox"/> None | <input type="checkbox"/> 5-6 Cups of coffee/tea/cola |
| <input type="checkbox"/> 1-2 Cups of coffee/tea/cola | <input type="checkbox"/> More than 6 cups/day |
| <input type="checkbox"/> 3-4 Cups of coffee/tea/cola | |

9. What is your:

Height: ft. in.
 Weight: lbs.
 Bra Size

10. How many times have you been pregnant?

11. Has a lump ever been found in your breast? Yes No

12. Have you ever been diagnosed with breast cancer in the past?

Yes No

13. Family history of breast cancer? Yes No

	Yes	No
Grandmother	<input type="checkbox"/>	<input type="checkbox"/>
Mother	<input type="checkbox"/>	<input type="checkbox"/>
Daughter	<input type="checkbox"/>	<input type="checkbox"/>
Sister	<input type="checkbox"/>	<input type="checkbox"/>
Aunt	<input type="checkbox"/>	<input type="checkbox"/>

14. A friend of mine recently found out that she has breast cancer.

Yes No

15. A relative of mine recently found out that she has breast cancer.

Yes No

16. Do you have breast implant(s)? Yes No

17. Are you still getting your periods? Yes No

IF YES, GO TO QUESTION #21

18. If no, why not?

Hysterectomy (uterus removed)

Uterus/Ovaries Removed

Menopause (change of life)

Other (please describe) _____

19. When was your last menstrual period? Month Year

20. Have you had any vaginal bleeding since you stopped having your periods?

Yes No

PLEASE GO TO QUESTION #24

21. How many days before your next menstrual period?

Less than 1 week

Just had my period less than 1 week ago

Midcycle

Don't know

22. About how many days are there from the start of one period to the start of the next?

Days

23. Are you taking birth control pills? Yes No

24. Are you taking any hormones? Yes No

Estrogen

Progesterone

Both Estrogen and Progesterone

Other (specify) _____

25. Have you had Norplant inserted? Yes No

26. Have you had a mammogram before? Yes No
If yes, how long ago? Year(s)

27. Do your breasts hurt today? Yes No

28. Please indicate with a **X** all family members listed below, who were born in the United States.

- You
- Your mother
- Your father
- Your grandmother (mother's side)
- Your grandfather (mother's side)
- Your grandmother (father's side)
- Your grandfather (father's side)

29. Make a mark on the line below to tell us how anxious you are about having a mammogram.

no anxiety _____ anxiety as bad as you can imagine

***Please remember to pick up
PART II of the MAMMOGRAM STUDY questionnaire
from the nurse after you have had your mammogram.***

THANK YOU

**APPENDIX B:
VISUAL ANALOGUE SCALE**

PAIN/DISCOMFORT SCALES

Make a mark on the lines below to tell us how much discomfort and pain you had during your mammogram.

No discomfort _____ Discomfort as bad as you can imagine

No pain _____ Pain as bad as you can imagine

**APPENDIX C:
DESCRIPTIVE RATING SCALE.**

INSTRUCTIONS:

Please circle the words listed below that best describes the amount of pain you had during the mammogram.

no pain

very mild pain

mild pain

moderate pain

severe pain

extreme pain

INSTRUCTIONS:

Please circle the words listed below that best describes the amount of discomfort you had during the mammogram.

very comfortable

comfortable

mildly uncomfortable

uncomfortable but tolerable

very uncomfortable

extremely uncomfortable

APPENDIX D:
PART I QUESTIONNAIRE

ID# _____

MAMMOGRAM STUDY

PART I

1. Your Age: _____

2. What is your current marital status?

- | | |
|--|--|
| <input type="checkbox"/> Married/Partnered | <input type="checkbox"/> Separated |
| <input type="checkbox"/> Widowed | <input type="checkbox"/> Never Married |
| <input type="checkbox"/> Divorced | <input type="checkbox"/> Not married but living together |

3. Circle the highest grade or year you completed in regular school, vocational school, college, or graduate professional training?

Grade School								High School				
1	2	3	4	5	6	7	8	9	10	11	12	
College				Graduate School								
	13	14	15	16	17	18	19	20	21	22	>22	

4. Circle the number that best describes your ethnic group:

- 1 American Indian
- 2 Asian (Chinese, Japanese, etc)
- 3 Black
- 4 Caucasian/White
- 5 Hispanic
- 6 Pacific Islander (Hawaiian, Philippine, Samoan, etc)
- 7 Mixed Ethnic Background
- 8 Other (specify) _____

5. Which generation are you in the United States?

- | | | |
|---------------------------------|---------------------------------|-----------------------------------|
| <input type="checkbox"/> First | <input type="checkbox"/> Third | <input type="checkbox"/> > Fourth |
| <input type="checkbox"/> Second | <input type="checkbox"/> Fourth | |

6. What is your current employment status?

- | | |
|--|-------------------------------------|
| <input type="checkbox"/> Full-time | <input type="checkbox"/> Retired |
| <input type="checkbox"/> Part-time | <input type="checkbox"/> Unemployed |
| <input type="checkbox"/> Self-employed | <input type="checkbox"/> Disability |
| <input type="checkbox"/> Homemaker | |

7. What is your total yearly family income?

- | | | |
|--|--|---|
| <input type="checkbox"/> <10,000 | <input type="checkbox"/> 40,001-50,000 | <input type="checkbox"/> 80,001-90,000 |
| <input type="checkbox"/> 10,000-20,000 | <input type="checkbox"/> 50,001-60,000 | <input type="checkbox"/> 90,001-100,000 |
| <input type="checkbox"/> 20,001-30,000 | <input type="checkbox"/> 60,001-70,000 | <input type="checkbox"/> >100,000 |
| <input type="checkbox"/> 30,001-40,000 | <input type="checkbox"/> 70,001-80,000 | |

8. How much caffeine do you usually have each day?

- | | |
|--|--|
| <input type="checkbox"/> None | <input type="checkbox"/> 5-6 Cups of coffee/tea/cola |
| <input type="checkbox"/> 1-2 Cups of coffee/tea/cola | <input type="checkbox"/> More than 6 cups/day |
| <input type="checkbox"/> 3-4 Cups of coffee/tea/cola | |

9. What is your:

Height: ft. in.
 Weight: lbs.
 Bra Size

10. How many times have you been pregnant?

11. Has a lump ever been found in your breast? Yes No

12. Have you ever been diagnosed with breast cancer in the past?

Yes No

13. Family history of breast cancer? Yes No

	Yes	No
Grandmother	<input type="checkbox"/>	<input type="checkbox"/>
Mother	<input type="checkbox"/>	<input type="checkbox"/>
Daughter	<input type="checkbox"/>	<input type="checkbox"/>
Sister	<input type="checkbox"/>	<input type="checkbox"/>
Aunt	<input type="checkbox"/>	<input type="checkbox"/>

14. A friend of mine recently found out that she has breast cancer.

Yes No

15. A relative of mine recently found out that she has breast cancer.

Yes No

16. Do you have breast implant(s)? Yes No

17. Are you still getting your periods? Yes No

IF YES, GO TO QUESTION #21

18. If no, why not?

Hysterectomy (uterus removed)

Uterus/Ovaries Removed

Menopause (change of life)

Other (please describe) _____

19. When was your last menstrual period? Month Year

20. Have you had any vaginal bleeding since you stopped having your periods?

Yes No

PLEASE GO TO QUESTION #24

21. How many days before your next menstrual period?

Less than 1 week

Just had my period less than 1 week ago

Midcycle

Don't know

22. About how many days are there from the start of one period to the start of the next?

Days

23. Are you taking birth control pills? Yes No

24. Are you taking any hormones? Yes No

Estrogen

Both Estrogen and Progesterone

Progesterone

Other (specify) _____

25. Have you had Norplant inserted? Yes No

26. Have you had a mammogram before? Yes No

If yes, how long ago? Year(s)

27. Do your breasts hurt today? Yes No

28. Please indicate with a **X** all family members listed below, who were born in the United States.

- You
- Your mother
- Your father
- Your grandmother (mother's side)
- Your grandfather (mother's side)
- Your grandmother (father's side)
- Your grandfather (father's side)

29. Make a mark on the line below to tell us how anxious you are about having a mammogram.

no anxiety _____ anxiety as bad as you can imagine

***Please remember to pick up
 PART II of the MAMMOGRAM STUDY questionnaire
 from the nurse after you have had your mammogram.***

THANK YOU

INSTRUCTIONS:

Please circle the words listed below that best describes the amount of anxiety you are having now.

no anxiety

very mild anxiety

mild anxiety

moderate anxiety

severe anxiety

extreme anxiety

**APPENDIX E:
PART II QUESTIONNAIRE**

ID# _____

MAMMOGRAM STUDY

PART II

PAIN/DISCOMFORT SCALES

Make a mark on the lines below to tell us how much discomfort and pain you had during your mammogram.

No discomfort _____ Discomfort as bad as you can imagine

No pain _____ Pain as bad as you can imagine

MCGILL PAIN RATING INDEX (PRI)

Some of the words below may describe your *discomfort* during the mammogram. Circle only one in each of the 20 groups *if* the group contains a word that describes your pain. Leave out any group that is not suitable.

1	2	3	4	5
Flickering Quivering Pulsing Throbbing Beating Pounding	Jumping Flashing Shooting	Pricking Boring Drilling Stabbing Lancinating	Sharp Cutting Lacerating	Pinching Pressing Gnawing Cramping Crushing
6	7	8	9	10
Tugging Pulling Wrenching	Hot Burning Scalding Searing	Tingling Itchy Smarting Stinging	Dull Sore Hurting Aching Heavy	Tender Taut Rasping Splitting
11	12	13	14	15
Tiring Exhausting	Sickening Suffocating	Fearful Frightful Terrifying	Punishing Grueling Cruel Vicious Killing	Wretched Blinding
16	17	18	19	20
Annoying Troublesome Miserable Intense Unbearable	Spreading Radiating Penetrating Piercing	Tight Numb Drawing Squeezing Tearing	Cool Cold Freezing	Nagging Nauseating Agonizing Dreadful Torturing

INSTRUCTIONS:

Please circle the words listed below that best describes the amount of pain you had during the mammogram.

no pain

very mild pain

mild pain

moderate pain

severe pain

extreme pain

INSTRUCTIONS:

Please circle the words listed below that best describes the amount of discomfort you had during the mammogram.

very comfortable

comfortable

mildly uncomfortable

uncomfortable but tolerable

very uncomfortable

extremely uncomfortable

EVALUATION QUESTIONNAIRE

When do you plan on returning for your next mammogram?

6 Months
 1 Year
 2 Years

5 Years
 Never
 Other (specify) _____

If you are planning to ~~never~~ have a mammogram again, would you please tell us why?

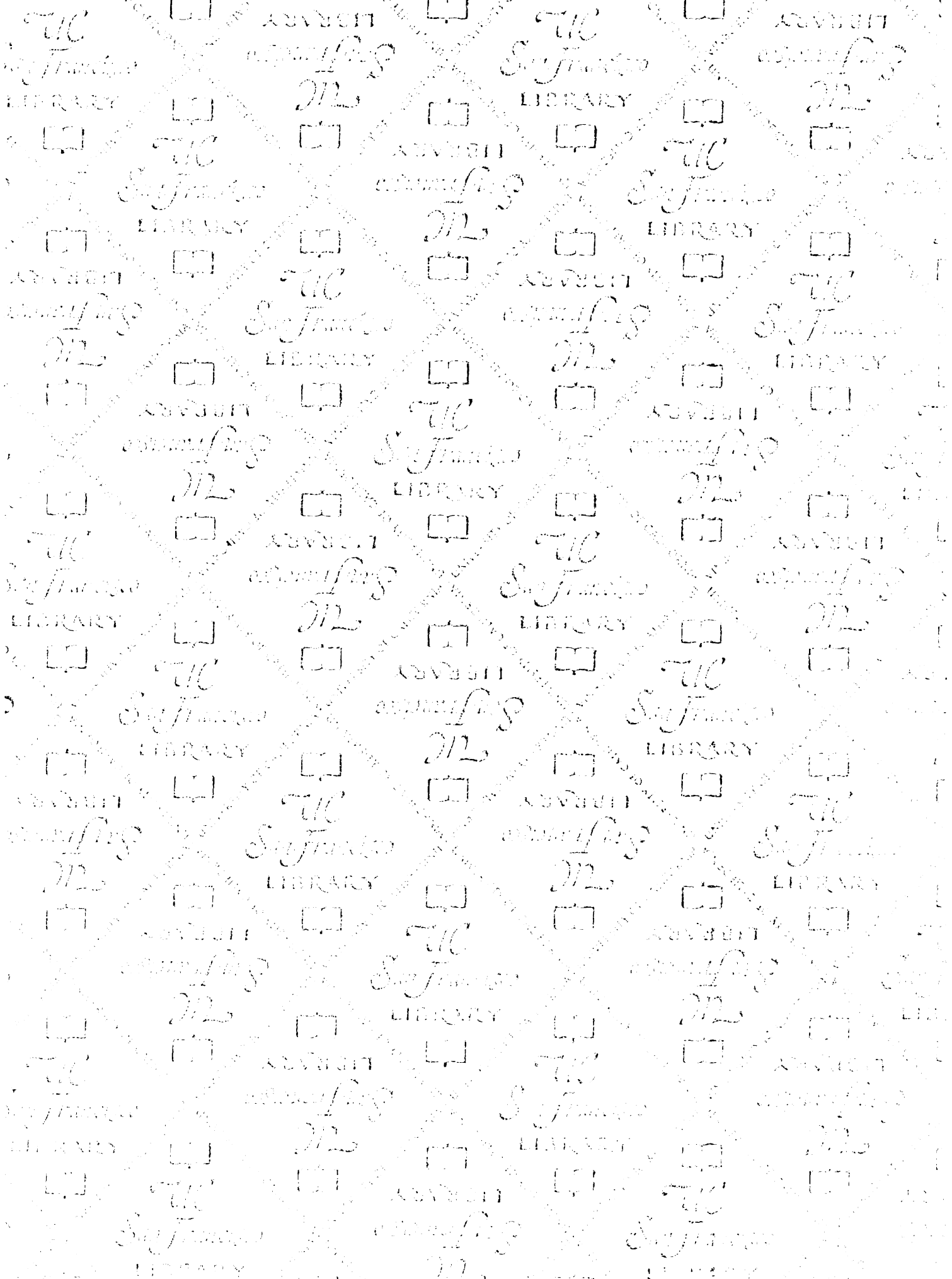
THANK YOU

ATTITUDES ABOUT HAVING A MAMMOGRAM

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	Strongly Agree		Don't Know		Strongly Disagree
1. I was looking forward to having the mammogram.	1	2	3	4	5
2. I feel embarrassed when a doctor examines my breasts	1	2	3	4	5
3. I have been worried about my breasts lately.	1	2	3	4	5
4. The pain I felt during this mammogram will stop me from having another mammogram.	1	2	3	4	5
5. I worry about the amount of radiation I get when I have a mammogram.	1	2	3	4	5
6. The cost of the mammogram will stop me from having another mammogram.	1	2	3	4	5
7. I found the mammogram to be more painful than I imagined.	1	2	3	4	5
8. Things I heard or read made me afraid to have a mammogram.	1	2	3	4	5
9. I felt embarrassed during the mammogram.	1	2	3	4	5
10. I was dreading the mammogram.	1	2	3	4	5
11. My fear of radiation will stop me from having another mammogram.	1	2	3	4	5
12. I am afraid of what the mammogram will show.	1	2	3	4	5
13. I believe I am more likely than other women to get breast cancer.	1	2	3	4	5
14. I believe that the amount of radiation I receive when I have a mammogram is harmful to me.	1	2	3	4	5
15. I had this mammogram to make sure that nothing is wrong with my breasts.	1	2	3	4	5
16. Having this mammogram made me feel so embarrassed, I will never have another mammogram.	1	2	3	4	5

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For reference

Not to be taken from the room.

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