

Effects of Verbal Communications on Experiences of Discomfort in Women Undergoing Mammography Examination

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Background

Mammography is an important radiologic modality using ionizing and non-ionizing radiation in medical imaging of the breast as well as for breast examination, screening and detection of breast cancers. The procedure is however known to be associated with discomfort and pain which could otherwise impact adversely on patient participation. Hence, several management strategies including verbal communication which is given prior to examination have been adopted to alleviate associated pains and discomfort.

Aim: The study aimed at evaluating the effect of verbal communication on patients' anticipated discomfort and on actual discomfort experienced during mammography.

Methodology: The study was conducted at the Radiology Department of Korle-Bu Teaching Hospital involving 100 women present for mammography examination. Fifty percent of the study population was established as control while the remaining 50% constituted the experimental group. Data was collected using appropriate questionnaires and indices such as demographics, knowledge on mammography, expectations of discomfort before the procedure and actual discomfort felt during the procedure. In particular, the experimental group received prior information via verbal communication about the procedure while the control group was denied.

Results: The results indicated that most of the participants were aged over 50 years and about 66% of them indicated expectations on discomfort. The actual discomfort experienced was found to be reduced in the experimental group as compared to the

control group showing that verbal communication had significant effects of minimizing expected discomfort in women undergoing mammography examinations ($p = 0.003$).

Conclusion: The results of the study showed that verbal communication given prior to the procedure is very effective in minimizing patient expected discomforts during mammography.

Keywords: Medical imaging, Pain, Breast examination, Breast screening, Cancers.

Introduction

Mammography is currently the most effective tool for early detection of breast cancer and the key components of patients' satisfaction with this imaging modality include professional competence, safety and comfort, patient care and communication (information transfer). Additional to these, studies indicate that convenience and acceptability of physical surroundings, staff interpersonal skills are other factors.^{1,2}

According to Kerlikowske and others, the early detection of breast cancer has been found to reduce mortality rate by approximately 30%.³ The work of Ferro and colleagues also showed sufficient evidence that annual mammography examinations performed on women aged ≥ 40 years was effective in reducing the mortality rate from breast cancer.⁴ However, the apparent controversies regarding mammography have heightened emotional intensity surrounding breast cancer leading to many women presenting with emotional concerns during mammography screening. Some sources of emotional concern include family history or perceived high risk breast cancer, personal experiences with friends or relatives, inadequate or too much information or misinformation, ongoing controversies and changing recommendations and other life stresses.

Discomfort

Aside from these concerns, the modality is also known to be associated with discomfort and pain which further induces fear in women. Previous studies have

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indicated that women's expectation of discomfort have been found to be related to actual experiences of discomfort reported by friends and family⁵ while another study reported that higher expectations of discomfort were related to actual discomforts experienced during the procedure.⁶ Another reason that promotes expectations of discomfort in women is the associated fear or false notion that breast compression procedures during the examination results in changes in breast tissue as affirmed by.^{7,8}

Indeed, breast compression is necessary to even out and also reduce the amount of breast thickness in order to allow visualization of the tissues. Physics of imaging the breast shows that a thinner amount of breast tissue imaged reduces the amount of x-ray scatter produced which in turn increases image contrast and quality.⁹ Compression of the breast therefore results in maximization of image quality and minimization of radiation dose which are important for achieving occupational radiation safety, and medical radiation protection in accordance with the ALARA principle. Despite the excellent physics, breast compression also increases the probability of inducing pain and discomfort during mammography.

Expectedly, the pain and discomfort experienced in women present potential hindrances to the performance of the mammography procedure and hence express reasons for preventing and deterring women from participating in scheduled breast screening examinations (BSE). This in turn can lead to delayed breast cancer diagnoses and worsen prognoses for some women. Consequently, discomfort experienced during mammography is a clearly established factor associated with non-participation of women in the procedure, since women's expectations of discomfort have been found to be related to actual experiences of discomfort.⁵

Verbal Communication

For these reasons, it is imperative that discomfort experienced by women undergoing mammography examination is addressed for purposes of realizing more satisfactory procedures since the abstinence or non-participation of women in breast screening programs could lead to increases in the mortality rate from breast cancers

in women.¹⁰ In addressing this, several management strategies, including verbal communication given prior to the examination, have been adopted to alleviate discomfort and associated pains. Communication is an important facet of quality health care and is particularly essential and effective in reducing or abating anxiety for both the radiographer (radiologic technologist) and the patient as well as fostering radiographer-patient relationship.^{11,12} It requires identification of the most suitable and appropriate communication methods incorporating good communication skills and good customer service practices crucial to patient care during the procedure. Patients who express emotional concerns may not process required information well until their concerns are attended to. Verbal communication provides important information explaining the procedure, patients' feelings as well as their expectations and is therefore central to patient education prior to and during the examination.

In particular, it has been suggested that expectations of discomfort can be moderated by providing information prior to the procedure, and that provision of prior information via verbal communication about discomfort and associated pain can help women perceive less discomfort during the mammography procedure.¹³ A report from another study on discomfort and pain during the mammography procedure emphasized that provision of prior information to patients through verbal communication had considerable impact on coping abilities and adherence with physician recommendations.¹⁴ In particular, the importance of the verbal communication is to abate or eliminate, where possible, any notions or forms of fear that could lead to discomfort and consequently increase women participation of mammographic screening and cancer detection examinations and simultaneously reduce mortality rates arising from breast cancer and related diseases.

Despite increased advocacy and awareness on the need for regular BSE, early detection of breast cancer in women, the overwhelming benefits of early and successful treatment, reduction in mortality rate and knowing about one's health status, mammography is still poorly patronized in Ghana. In particular, although considerable work has been done on perceptions of mammography by women, which could be the cause of low patronization in mammography, not much has been

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done on the discomfort and pain associated with the procedure. The study was therefore conducted to investigate the level of discomfort among women undergoing mammography, assess the importance of verbal communication on mammography, evaluate the effect of verbal information on actual discomfort experienced during mammography, and find out if discomfort experienced was a contributory factor in preventing women from further mammography procedures.

Verbal Communication and Minimization of Discomfort

Verbal communication is one of the effective approaches or strategies in minimizing discomfort in women undergoing mammography examinations. Verbal communication generally involves relaying relevant and appropriate information to the patient about the procedure and the resulting discomfort and physical pain associated with the modality which can be experienced by the patient during the procedure. This is professionally done by the radiographer at the interpersonal level prior to the procedure and employs excellent communication strategies and skills to make the examination less painful achieve its set goals or objectives. According to Kornguth and others, verbal communication is helpful in reducing the levels of discomfort during the procedure and hence makes the procedure more accommodating and comfortable.¹³ This is affirmed by other researchers that good interpersonal communication serves both as practical and social functions that enable the completion of many of life's activities as well as achieving a social belonging and are implemented via verbal and non-verbal communications.¹⁵ A previous study further affirms that patients are comfortable and hence express less anxiety with courteous radiographers who communicate effectively.¹⁶

Methodology

The study was conducted at the Korle-Bu Teaching Hospital (KBTH) in Ghana, where both diagnostic and screening mammography examinations were performed. A non-probability convenient sampling method using experimental case control design approach was adopted. A sample size of 100 patients was determined via the expression

$$N = \left(\frac{Z}{E}\right)^2 PQ \dots\dots\dots (1)$$

Where

- P* = 0.5 proportion of population attending mammography
- Q* = 0.5 proportion of population not booked for mammography
- E* = 10% allowable error

The sampling population consisted of a control group (50 patients) who received no information prior to the procedure and an experimental group (50 patients) who received prior information via verbal communication.

Results and Discussion

A 100% response rate was achieved. About 96% of the patients were examined for breast cancer diagnostic purposes. The demographics showed that 50% of the respondents were aged over 50years of which over 31% received prior information via verbal communication before the procedure. As indicated earlier, the modality is associated with discomfort and the study showed that about 66% of patients expressed expectations of discomfort and while 58% manifested the discomfort in the form of pain (Table 1).

Table 1: Expectations and Forms of Discomfort

Response	Control Group	Experimental Group	% Total
Expectations of Discomfort			
Yes	32	34	66
No	18	16	34
Total	50	50	100
Forms of Discomfort			
Pain	30	28	58
Masectomy	2	6	8
No response	18	16	34

The patients attributed their sources of expectations of discomfort to self, friends and relatives, physicians and in some cases no response as illustrated in Table 2. The study showed that the expectations of discomfort were derived mostly by patients themselves (44%) contrary to research findings where the expectations were derived from friends and family.⁵ Among the patients who identified areas of discomfort, 40%

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of them attributed it to breast compression during the procedure. Of this lot, 35% of them had received information prior to the procedure.

Table 2: Sources of Expectations and Areas of Discomfort

Response	Control Group	Experimental Group	% Total
Sources of Expectations of Discomfort			
No response	14	12	26
Friends and relatives	6	20	26
Physicians	2	2	4
Self	28	16	44
Areas of Discomfort			
Undressing	4	0	4
Positioning	6	10	16
Compression	26	14	40
No response	14	26	40

The effects of verbal communication on the expected and experienced discomforts were demonstrated via its importance prior to the procedure and the associated reasons assigned for its importance (Table 3).

Table 3: Importance of Verbal Communication on Reduction of Discomfort

Response	Control Group	Experimental Group	% Total
Importance of Verbal Communication Prior to the Procedure			
Yes	46	48	94
No	4	2	6
Total	50	50	100
Reasons for Importance of Verbal Communication			
Removes misconception	0	4	4
Removes anxiety	4	6	10
Knowledge of expectation	42	30	72
No response	4	10	14

Clearly an overwhelming majority of 96% of patients from both control and experimental groups affirmed the importance of verbal communications offered prior to the procedure while 72% indicated knowledge of expectations of discomfort as

their main reason. A test of significant difference in the number of patients who experienced discomfort between the control and experimental groups showed that a majority (64%) of patients in the experimental group experienced no discomfort during the procedure and indicated that prior education via verbal communication was helpful in reducing discomfort. Indeed, a chi square test with a p value = 0.0003 < 0.05 showed that there was a significant difference in the experience of actual discomfort between the two groups with the experimental group experiencing less expected discomfort and established the effects of verbal communication on the experience of discomfort during mammography (Table 4).

Table 4: Test of Significance Difference between Control and Experimental Groups

Response	No discomfort	Discomfort	Total
Control group	14	36	50
Experimental Group	32	18	50
Total	46	54	100

$$\chi^2 = 13.02$$

$$p - \text{Value} = 0.003$$

This supports findings that verbal communication professionally administered to patients prior to the procedure had an effect on reducing actual discomfort.¹³ In particular, the patients indicated that such a professional practice was effective in removing or as it were taken away any form of anxiety or stress-induced experiences prior to undergoing the examination. The patients further indicated that friendliness of the radiographer was critical in alleviating discomfort.¹⁶

Discomfort and further examination

This study revealed that discomfort experienced by patients from both control and experimental groups (Figure.1) did not prevent them from having further mammograms in future contrary to the report of Flavo (2001). However, this assertion was made taking into consideration the fact that most of the patients

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reported for purposes of diagnostic mammography rather than for screening purposes (Table 5).

Table 5: Purpose of Undertaking Mammography Procedure

Purpose	Control Group	Experimental Group	Total
Pathological screening	2	6	8
Diagnostic screening	48	42	90
Routine check-up	0	2	2
Total	50	50	100

Conclusions

Although this study was limited to one hospital, it however underscored the importance of verbal communication as a key component in mammography imaging modality for effective healthcare delivery. The study also firmly established the need to provide quality breast screening and diagnostic programmes by improved effectiveness in patient education through verbal communication. Its practice is necessary and important and a timely execution prior to the mammography procedure is significantly effective in minimizing or abating the actual discomfort experienced in patients undergoing the examination. The results of the study showed that there was a significant difference in the experience of actual discomfort between the patients who received no verbal information prior to the procedure and those who received. In particular, patients who received information via verbal communication prior to the examination experienced less expectations of discomfort. The study results further established the effects of verbal communication on the experience of discomfort during mammography.

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References

1. Dolan NC, Feinglass J, Priyanath A, Haviley C, Sorensen AV, and Venta, LA. Measuring Satisfaction with Mammography Results Reporting. *J. Gen. Intern. Med.* 2001; 16:157-162.
2. Loeken K, Steinne S, Sandvik L. A New Instrument to Measure Patient Satisfaction with Mammography. Validity, Reliability, and Discriminatory Power. *Med Care.* 1997; 35:731-741.
3. Kerlikowske K, Grady D, Rubin SM, Sandrock C, and Ernster VL Efficacy of Screening Mammography: A Meta-Analysis. *J. Am. Med. Assoc.* 1995; 273: 149–154.
4. Ferro S, Caroli A., Nanni O, Biggeri A and Gambi A. Across Sectional Survey on Breast Self Examination Practice, Utilization of Breast Professional Examination, Mammography And Associated Factors in Romanga, Italy. *Tumour* 1992; 78:98-105.
5. Shreastha S, Poulos A. The Effect of Verbal Information on the Experience of Discomfort in Mammography. *Radiography* 2001; 7: 271–277.
6. Rutter DR, Calnan M, Vaile MSB, Field S and Wade KA. Discomfort and Pain During Mammography: Description, Prediction, and Prevention, *Br. Med. J.* 1992; 305(6851): 443–445.
7. Rickard M, Poulos A. Compression in Mammography and the Perception of Discomfort. *Australas Radiol* 1997; 41: 247-252.

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8. Elwood M, McNoe B, Smith T, Bandaranayake M and Doyle C. Once is Enough – Why Some Women Do Not Continue to Participate in a Breast Cancer Screening Program. *New Zealand Med. J.* 1998; 111(1066): 180–183.
9. Barnes G. Mammography Equipment: Compression, Scatter Control, and Automatic Exposure Control. In: Haus A, Yaffe M Editor. *Syllabus: A Categorical Course in Physics*. Oak Brook: RSNA Publications; 1993.
10. Poulos A, Gwynnyth L. Mammography Discomfort: A Holistic Perspective Derived From Women's Experiences. *Radiography* 2005; 11(1): 17-25
11. Teutsch C. Patient-doctor Communication. *Med Clin of North Am* 2003; 87(5):1115-1145.
12. Carney PA, Kettler M, Cook AJ, Geller BM, Karliner L, Miglioretti DL, *et al.*, An Assessment of the Likelihood, Frequency, and Content of Verbal Communication Between Radiologists and Women Receiving Screening and Diagnostic Mammography. *Acad Radiol.* 2009; 16(9):1056-1063.
13. Kornguth PJ, Keefe FJ, Conaway MR. Pain during Mammography: Characteristics and Relationship to Demographic and Medical Variables. *Pain* 1996; 66 (2-3): 187–94.
14. Andrews FJ. Pain during Mammography: Implications for Breast Screening Programs. *Australas Radiol* 2001; 45: 113–117.
15. Redmond MVA. *Communication: Theories and Applications*: Boston: Houghton Mifflin Co; 2000.
16. Doyle CA, Stanton MT. Significant Factors in Patient Satisfaction Ratings of Screening Mammography. *Radiography* (2002; 8: 159–172.

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