
Preparing African American Women for Breast Biopsy

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Introduction

Breast cancer, the second leading cause of cancer deaths among African American women,¹⁻³ is commonly diagnosed as a result of a biopsy procedure performed as follow-up to an abnormal mammography result.^{4,5} Lack of knowledge, anxiety about undergoing breast biopsy, and inadequate social support have been associated with delay in screening and follow-up.^{6,9} There have been a number of calls for interventions that would help to address psychosocial issues related to breast biopsy and to minimize delay in diagnosis.¹⁰⁻¹³ However, little research has been reported on the development of effective, theory-based methods for addressing these issues. In this paper we present results of a pilot study, Breast Biopsy Education Study, which was intended to develop and test methods to prepare African American women for the breast biopsy experience.

Specific aims of the Breast Biopsy Education Study were (1) to test the feasibility of enrolling African American women in an educational counseling intervention, (2) to develop a brief educational counseling intervention that involves a trained nurse educator and an African American woman who has been recommended to have a breast biopsy, and (3) to assess intervention effects on biopsy-related knowledge, affective moods, and perceived social support among participating women.

The pilot study was designed as a one-group, pretest/posttest study. Eligibility criteria for participation included being an African American woman aged 40 to 74 years with no personal history of breast cancer and having a recommendation to undergo a breast biopsy to follow up an abnormal mammography result. Study participants were patients identified at the Breast Imaging Center of a university hospital located in an urban area of the north-eastern United States.

The educational intervention was developed using the preventive health model, which is based on self-

regulation theory.¹⁴ Self-regulation theory asserts that cognitive and psychological representations (ie, mental images) affect personal anticipatory reactions to a pending experience.^{15,16} Intervention materials developed and pretested for acceptability, relevancy, usefulness, understandability, and ease of administration¹⁷ included a 20-page informational booklet, *Having a Breast Biopsy: Plain Talk for Women Who Have Been Advised to Have a Breast Biopsy*, and a brief in-person educational counseling session conducted by a nurse educator. Consistent with self-regulation theory, the booklet, written at an 8th-grade reading level, provides concrete objective information about steps involved in preparing for a breast biopsy experience. It also includes descriptions of major types of breast biopsy procedures and information intended to acknowledge and address affective representations about the breast biopsy experience. The counseling session engaged patients in considering how to manage personal informational, emotional, and support needs.

Survey Measures

Baseline and endpoint surveys were administered to participants. The surveys contained measures of knowledge, affective mood states, and perceived social support related to breast biopsy. Specifically, the measures included the following:

Knowledge, Attitudes, and Beliefs About Breast Biopsy: Investigator-developed scales based on the preventive health model,^{18,19} designed to measure salience and coherence (2 items), worry (6 items), response efficacy (2 items) and spiritual efficacy (2 items). Each item was formulated as a 4-point Likert-type scale with a response set of *strongly disagree*, *somewhat disagree*, *somewhat agree*, and *strongly agree*.

Emotional Responses to Breast Biopsy: The 26-item Profile of Mood States (POMS) Short Version²⁰ identified and assessed transient, fluctuating self-report affective mood states using an adjective checklist. Six subscales were used (anger, confusion, depression, fatigue, tension, and vigor). The total POMS score, which is calculated with the vigor subscale scores subtracted from the total of the other items, offers an index of total negative mood disturbance. Each item was formulated as a 5-point Likert-type scale with a response set of *not at all*, *a little bit*, *somewhat*, *quite a bit*, and *very much*. The Cronbach alpha for this study was .97.

Perceptions of Social Support: The 15-item Weinart's Personal Resource Questionnaire (PRQ2000)²¹ was used to tap the level of perceived social support. Each item was formulated as a 7-point Likert-type scale with a response set of *strongly disagree*, *disagree*, *somewhat disagree*, *neutral*, *somewhat agree*, *agree*, and *strongly agree*. A sum score is calculated. Higher scores

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Table 1. — Sociodemographic Characteristics of Study Participants (N = 23)

Characteristic	No. of Participants
Age (years)	
<50	9 (39%)
50–59	10 (44%)
60–69	4 (17%)
Education	
< High school	6 (26%)
High school graduate	8 (35%)
> High school	9 (39%)
Marital status	
Married/living together	9 (39%)
Not married	14 (61%)
Employment	
Full time	14 (61%)
Unemployed	9 (39%)

indicate higher levels of perceived social support. The Cronbach alpha for this study was .96.

Support From Others: Ten items adapted from the Family Relationship Inventory²² were used to clarify the participant's individual feelings and interpersonal behavior relating to her family. Participants were asked to rate the availability of someone and their plans to ask for assistance to help them get information, get to an appointment, provide emotional support, discuss a breast biopsy, and provide spiritual support. Each item was formulated as a 5-point Likert-type scale with a response set of *strongly disagree, somewhat disagree, somewhat agree, and strongly agree*. The Cronbach alpha for this study was .92.

Concerns About Breast Biopsy: Two investigator-developed items were used. The first measured the degree of concern about having a breast biopsy. This item was formulated as a 5-point Likert-type scale with a response set of *not at all, a little bit, somewhat, quite a bit, and very much*. The second item was an open-ended question asking the participant to identify what she was most concerned about regarding breast biopsy.

Perceptions of the Intervention (Obtained on Endpoint Survey)

Booklet: Five questions were developed to ascertain participant's perception of the booklet. Participants were

asked if the information in the booklet *Having a Breast Biopsy* was helpful, useful, informative, easy to read, and relevant to them. Each response was formulated as a 5-point Likert-type scale with a response set of *not at all, a little bit, somewhat, quite a bit, and very much*. Participants were also asked if they would recommend the booklet to a family member or friend and if they had any additional comments.

Educational Session: Five questions were asked to ascertain participant's perception of educational counseling session. Participants were asked: if the information in the education session was helpful, useful, informative, too basic, and relevant to them. Each response was formulated as a 5-point Likert-type scale with a response set of *not at all, a little bit, somewhat, quite a bit, and very much*. Participants were also asked if they would recommend the educational counseling session to a family member or friend and if they had any additional comments.

Survey Results

Data analysis involved computing descriptive and inferential statistics. Item frequencies were tabulated for the sociodemographic, baseline and endpoint variables. Participant pre- and post-intervention scores on preventive health model variables, including biopsy-related knowledge, affective mood states, and perceived level of social support, were compared. The nonparametric Wilcoxon test for paired data was used to assess pre/post differences. Participants' perceptions about the booklet and counseling session were also tabulated.

Twenty-three African American women enrolled and participated in the study. The mean age of the participants was 51 and ranged from 31 to 72 years. Seventy-four percent of the women had a high school education or greater, and 39% were married (Table 1).

Two major categories of concerns regarding the breast biopsy were identified on the baseline survey — fear of pain and anesthesia and fear of being diagnosed with breast cancer and losing a breast. After exposure to the intervention, a trend toward significance was noted in a stronger belief that breast cancer can be cured ($P=.06$) and decreased worry about scarring from the breast biopsy procedure ($P=.11$). There was a significant increase in perceived social support ($P=.05$), as shown in Table 2.

Table 2. — Change in Representations Related to Breast Cancer and Breast Biopsy Among Study Participants (N = 23)

Variable	Baseline		Endpoint		Difference	
	n	Mean (SD)	n	Mean (SD)	Mean (SD)	P Value
Belief that breast cancer can be cured	23	3.78 (0.42)	22	4.00 (0.00)	0.23 (0.43)	.0625
Worry about scarring from the breast biopsy procedure	22	2.91 (0.87)	21	2.62 (0.86)	-0.29 (0.64)	.1094
Perceived social support	23	3.35 (0.93)	22	3.82 (0.39)	0.45 (0.91)	.0469
<i>P</i> value = Wilcoxon signed rank						

Finally, participants perceived the educational counseling session as being informative (89%), useful (85%), and relevant (84%). Perceptions of the booklet obtained on the endpoint survey were also highly favorable. The booklet was perceived as being informative (86%), helpful (95%), and readable (90%).

A remarkable finding of this study was that following breast biopsy, 95% of women stated they were interested in participating in future clinical research, demonstrating that women who undergo breast biopsy education are receptive to participating in future clinical studies. Historically, African Americans have been underrepresented in clinical trials.²³ In an extensive review of the literature, Shavers-Hornaday et al²⁴ identified multiple factors as possible impediments to African American participation in research studies. These factors included distrust of the medical/scientific community, poor access to primary medical care, the failure of researchers to actively recruit African Americans, lack of knowledge about clinical trials, and language and cultural barriers. However, several studies have found that African Americans would be willing to participate in research studies if they were asked, were given adequate information, and were encouraged directly by their physicians.^{23,25,26} Findings from the current study are consistent with this view.

Conclusions

The purpose of this pilot study was to develop and test a theory-based intervention to prepare African American women for the breast biopsy experience. Psychosocial issues were identified and addressed by a nurse educator in the context of a breast biopsy educational counseling session. Findings from this study suggest that African American women are receptive to breast biopsy education and can benefit from receiving this service. Research is needed to assess the effectiveness of the intervention in diverse populations and settings.

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