Theoretical perspectives relevant to breast self-examination

The disparity between women's knowledge and performance of breast self-examination (BSE) remains an unresolved clinical problem. As a screening behavior, BSE raises interesting issues about motivation. Adequate and useful theoretical perspectives are needed to guide research and to explain BSE performance. This article compares three perspectives of relevance to BSE—the health belief model, self-efficacy theory, and self-regulation theory—and cites empirical support in BSE research for each. A useful theoretical perspective to guide research on BSE is identified. Assumptions within each perspective are also addressed. Finally, future directions for BSE research are proposed.

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BREAST SELF-EXAMINATION (BSE) is a screening behavior of relevance to nursing and women's health. BSE is recommended for the early detection of breast cancer to facilitate early treatment and to reduce the morbidity and mortality from the disease. Although 96% to 99% of women have heard of BSE,[1,2] only an estimated 14% to 40% of women report doing it monthly.[3-5] The disparity between the knowledge of BSE and its infrequent performance remains an unresolved clinical problem.

Because screening behaviors pertain directly to the prevention of advanced disease and dysfunction, it is important to understand them more fully. Baric[6] emphasized that the motivations for screening behaviors are characteristically different from those for other preventive behaviors. Screening behaviors involve a unique, "at risk" role because they necessitate the subjection of oneself to the risk or possibility of receiving an undesirable diagnosis. The psychological stress associated with

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this possibility is inherent in all screening behaviors but not in most preventive health behaviors.

In particular, the possibility of discovering an abnormal lump through BSE—whether it be benign or malignant—is associated with a degree of psychological stress.

BSE is a unique screening behavior in some dimensions. It is inexpensive and noninvasive, involves little time or physical energy, and is performed monthly rather than daily or only once. Furthermore, BSE is a self-care procedure; it is not dependent on professional help. Because normal breast tissue may be "lumpy" or granular, it may be difficult to discriminate normal from abnormal breast tissue. In contrast to other screening behaviors, the standard of comparison for normal and abnormal with regard to BSE is less clear or definitive.

Because screening behaviors can differ in certain dimensions, a greater understanding of them may be best gained by focusing inquiry on one screening behavior at a time. An in-depth understanding of one behavior could be relevant to a set of screening behaviors that share common characteristics. Subsequently, one could indentify aspects of other screening behaviors that are similar in certain dimensions to those of the behavior previously studied, test theoretical ideas in relation to these other behaviors, and gain knowledge about a set of similar screening behaviors. Following this approach, BSE has been selected as a screening behavior on which to focus.

Although there are notable exceptions, much research on BSE has been atheoretical. It is desirable to identify a theoretical perspective to guide research on BSE. From a theoretical perspective, central constructs, ideas, and interrelationships relevant to the problem of interest may be identified. Theoretically based research sets the stage for testing contrasting explanations of phenomena. The findings from theory-based research may be readily applied to situations that are theoretically similar to the one studied.

This article compares three theoretical perspectives of relevance to BSE, citing empirical support for each, for the purposes of identifying a theoretical perspective with utility for guiding BSE research and proposing directions for future research on BSE. The central assumptions behind the perspectives are also discussed. The three perspectives are the health belief model, self-efficacy theory, and self-regulation theory.

HEALTH BELIEF MODEL

The health belief model has guided much research on BSE. Developed to explain health behaviors, the model is based on the assumptions that behavior is influenced most directly by cognitions and perceptions rather than objective reality and by the present environment rather than the past.[7]

The central constructs of the health belief model are perceived susceptibility to and severity of a disease, as well as perceived benefits and barriers to preventive action.[8,9] The perceptions of susceptibility and severity provide the energy to act, while the difference between perceived benefits and barriers provides the direction for action. Cues (internal or external triggers to action) and health motivation

(one's degree of interest and concern about health matters) are also proposed to influence health behavior. Selected demographic constructs are thought to modify perceptions rather than behaviors. From the model, it is proposed that if persons perceive their own susceptibility to a disease, believe that the disease is severe, recognize many benefits and few barriers to preventive action, receive facilitative cues, and are generally motivated in health matters, there is a high likelihood of these persons engaging in preventive behavior for that disease.[8,9] Because the model focuses on perceptions and subjective probability estimates of benefits and barriers to action, it has been described as a cognitively based, decision-making model. The perceived barriers to BSE—eg, forgetting, lacking confidence in one's examination abilities, and, less so, being fearful of finding a lump—have been consistently negatively associated with the frequency of performing BSE.[1,10-13]

The perceived benefits of BSE have been inconsistently related to BSE frequency. Some studies have found a modest positive relationship[13-16] while others have found no relationship.[5,17] In testing the combined effect of several variables of the health belief model on BSE, no relationship was found between the perceived benefits and BSE frequency.[10,11]

General health motivation, as measured by health-related behaviors such as exercising and eating well, has been positively, but inconsistently, related to BSE frequency. Health motivation has discriminated between groups rated low, medium, and high on the frequency of performing BSE.[18] When tested in relation to other variables, health motivation was the second strongest variable explaining the variance in BSE frequency in one study[10] but not in another.[15] Two studies did not find an overall relationship between reported health behaviors and BSE, but did find a relationship between selected health behaviors and BSE for subgroups of women.[19,20]

A variety of cues (such as media messages, professional examinations, and knowing others with breast cancer) have been positively associated with BSE frequency.[11,13,15,21] Cues that serve as external reminders appear to be important to the maintenance of BSE; internal cues that support the maintenance of BSE have not been consistently identified.

Research has shown that the perceived susceptibility to breast cancer,[1,10,11,13,15,17,19,22] perceived seriousness of the impact of breast cancer,[10,15,19,22] and sociodemographic variables (such as age, education, and socioeconomic and marital status)[10,19,23] have not been found to be associated with the frequency of performing BSE.

In summary, the relevance of many constructs of the health belief model to BSE frequency has not been well supported empirically. Because of the lack of strong empirical support for the health belief model in BSE research, its adequacy and utility for explaining BSE is questioned. An alternative theoretical perspective to guide BSE research is self-efficacy theory.

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SELF-EFFICACY THEORY

Self-efficacy theory incorporates two ideas that are important to BSE: stress and self-efficacy, both of which are relevant to the threat of a breast abnormality and one's confidence or lack thereof in one's own breast examination. In self-efficacy theory, it is assumed that persons have a salient risk or threat with which to cope and that cognitive processes determine behavior by mediating the relationship between knowledge and action.[24]

Derived from a social learning perspective, self-efficacy theory[25,26] suggests that, given a threatening situation, one engages in coping behavior primarily because of expected reinforcements for doing so. The capacity to expect future consequences or reinforcements serves to motivate behavior rather than strengthen or condition it.[25] Because of its emphasis on cognitions, ie, anticipated consequences, and reinforcement, this theory has been described as a cognitive-behaviorist perspective.[27]

The central construct of this theory, self-efficacy, is defined as the judgment of how well one can act in a stressful situation. Another construct, perceived competence, is defined similarly. However, whereas self-efficacy implies that the motivation for action is the expected reinforcement for completing the task, perceived competence is not conceptualized in relation to reinforcement. These constructs may capture much of what is measured by the construct of perceived barriers in the health belief model, ie, the dimensions of perceived competence or incompetence in one's own examination. It is most likely that perceived competence and incompetence in performing BSE are on two ends of one conceptual continuum, reflecting one construct.

Because the constructs of self-efficacy and perceived competence are similar, findings from the research on perceived competence in performing BSE could be relevant to the construct of self-efficacy and to self-efficacy theory. In several studies that were not based on self-efficacy theory, a positive relationship was found between perceived competence and BSE frequency. This relationship was found within samples that varied in character[14,19,23,28,29] and when different dimensions of perceived competence were measured (eg, one's ability to do BSE correctly and one's confidence in noticing abnormal signs during BSE).[14,23,28-31] One experimental study found an increase in both perceived competence in BSE and frequency of BSE after BSE teaching.[28] Two studies found moderate but significant correlations between perceived competence and frequency of BSE after teaching.[14,32]

In laboratory research based on self-efficacy theory, modeling of coping behaviors, both with and without subject participation, has been found to be positively associated with both perceived self-efficacy and engaging in coping behavior.[25,26] In two experimental studies on BSE that were derived from self-efficacy theory, interventions offering modeling and guided practice were compared with those that did not. In contrast to the expectation that modeling and guided practice would have stronger effects on BSE frequency than other interventions, in neither study were differences between interventions demonstrated.[28,33]

In summary, there has been limited BSE research based on self-efficacy theory. The

empirical work derived from the theory has not found a differential effect of modeling on BSE frequency. Conceptually similar to self-efficacy, perceived competence in performing BSE has been strongly associated with BSE frequency. Because of the lack of strong empirical support for self-efficacy theory in explaining BSE, its adequacy and utility for guiding research on BSE are questioned. An alternative perspective, self-regulation theory, is considered next.

SELF-REGULATION THEORY

Developed from an information processing perspective, the theory of self-regulation specifically addresses how people cope in stressful situations. Because this theory has guided research on coping with stressful health care situations, it has potential utility in guiding research on BSE. The stress inherent in BSE—the threat of a possible abnormality—has been previously discussed.

In self-regulation theory, it is assumed that perceived stress stimulates a process of self-regulation. Also, it is assumed that goals motivate behavior; goals provide the direction and energy to act. Because persons choose goals toward which to act, they are assumed to be somewhat active participants in, rather than passive respondents to, their environment.

The central components of self-regulation theory include a schema, or a generalized, cognitive representation; coping responses, or techniques to deal with a stressful situation; and regulation criteria, or the means with which to evaluate the impact of one's behavior in the situation. According to the theory, in order to cope with a given situation, one must have (1) an adequate schema to guide behavior, (2) a set of coping techniques perceived as efficacious to deal with the stress, and (3) a feedback process as a means to regulate or monitor one's behavior.[34] Also, a sense of effectance, or the expectation that one will be able to meet a goal, is proposed to increase one's perceptions of a situation as manageable and to promote one's actions to deal with the situation.

Empirical support for a process of self-regulation has been demonstrated in both stressful laboratory and clinical settings.[35,36] This suggests that the ideas in self-regulation theory may be generalized to other similar stressful situations. Much of the research derived from the theory has used an experimental design, affording a high degree of control over the study variables and confidence in the results.

Although there has been no BSE research based on self-regulation theory, the ideas from this theory are applicable to BSE. The immediate threat most relevant to BSE is the possibility of a breast abnormality, rather than the more abstract threat of breast cancer. A goal relevant to BSE is the early detection of cancer.

As a brief but important aside, instruction in BSE has been found to be consistently and positively associated with BSE frequency. This finding has been observed in descriptive studies[13,19,23,29,31] and quasiexperiments or experiments.[12,14,21,28,30,32,33,37] However, the components of information in BSE instruction that are essential to promote BSE have not been identified through past research.

Objective preparatory information that has been designed to provide an adequate schema of a stressful situation for interpretation of the situation and guidance of

one's actions in the situation has been demonstrated to have a positive effect on coping with impending health care situations.[38,39] More specifically, sensory information, or neutral descriptions of specific sensations to be experienced, has been found to improve outcomes of coping, as indicated by both goal-directed and emotional responses.[34,39] Given descriptive information about the breast, women might have a standard of comparison to facilitate the interpretation of their findings and might practice BSE more frequently. From self-regulation theory, it is suggested that objective, descriptive information of normal and abnormal breast tissue is essential to the composition of a schema of what one could expect to feel during a breast examination.

Having both an awareness of a health threat and effective ways to deal with a threat has been demonstrated as necessary to taking action or gaining knowledge to reduce the health threat.[40–42] Given coping techniques that are designed to minimize the threat of the possibility of an abnormality (eg, examining the breasts when normal hormonal variations are unlikely), women might increase their practice of BSE because the threat associated with BSE would be reduced. From self-regulation theory it is proposed that coping techniques for when and how to do BSE are essential components of instruction to increase the practice of BSE.

With regard to BSE, perceived effectance could be indicated by two related constructs: the perceived competence in performing BSE and the perceived competence in dealing with the possibility of an abnormality. BSE instruction that offers descriptive information about the breast could increase BSE frequency indirectly through increasing perceived competence in performing BSE. BSE instruction that offers coping techniques for when and how to do BSE could increase BSE frequency indirectly through increasing perceived competence at dealing with the possibility of abnormality.

Because the empirical support for the process of self-regulation is strong and because the ideas incorporated in self-regulation theory are applicable to BSE, it is concluded that this theory offers a conceptually adequate and useful perspective to guide BSE research. Multiple constructs of relevance to BSE are incorporated in self-regulation theory whereas self-efficacy theory is limited by the emphasis on one construct, self-efficacy. A mediating process to support coping behaviors is suggested in the context of self-regulation theory whereas mediating processes are not addressed in the health belief model.

ASSUMPTIONS

Although empirical support is fundamental to the selection of a theoretical perspective to guide research, it is also desirable to identify the assumptions of theoretical perspectives. Being aware of such assumptions may highlight the degree of logical consistency between the theoretical perspective and other world beliefs and may better inform the choice of a theoretical perspective to guide research.

In the health belief model, it is assumed that persons act on the basis of rational, probabilistic decision making.[43] In self-efficacy theory, self-efficacy is assumed to be the primary motive to act. Motives for

practicing BSE may be independent of rational thought processes and immediate, positive self-reinforcement. For example, persons may engage in a preventive action because of valued goals, attitudinal factors, personal interactions, or cultural norms. Although not all such motives are incorporated in self-regulation theory, those associated with perceived stress and valued goals are.

Because of the emphasis on perceptions of risk and cues in the health belief model and because of the emphasis on expected reinforcements and environmental contingencies in self-efficacy theory, the ideas in both of these perspectives are consistent with a view of persons as responsive to, rather than active in, their environment. If it is assumed that persons play a somewhat active role in their environment, which is implicit in self-regulation theory, using self-regulation theory to guide research would be consistent with this assumption.

In self-efficacy theory, it is assumed that the stress of a given situation is constant for selected samples; the effect of varying perceptions of a potentially stressful situation is not well integrated into the theory. With BSE, the degree of stress associated with finding an abnormality is likely to vary among individuals. Only one acceptable outcome, the preventive behavior in question, is identified in the health belief model[44,45]; alternative ways of responding to the risk of disease are not recognized. In self-regulation theory, alternative outcomes of coping and varying perceptions of stress are incorporated. Because the assumptions in self-regulation theory are less limiting than those in other perspectives considered (eg, persons are influenced not only by cognitions but also by emotions and are somewhat active rather than passive in their environment), it may be more satisfying to use self-regulation theory to guide BSE research.

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FUTURE RESEARCH

A primary objective for future research could be to test the effect of specific information, as suggested by self-regulation theory, on increasing BSE frequency. The effects of objective, descriptive information about the breast and coping techniques for when and how to do BSE on BSE frequency could be assessed. With empirical support, ideas from self-regulation theory could direct informational nursing interventions to promote BSE.

Although perceived competence has been suggested as important to the coping process and dealing with health risks,[38,46,47] the mechanisms by which it supports coping behaviors remain to be better clarified. An objective of BSE research could be to test the effect of type of information on BSE frequency as mediated by dimensions of perceived competence.

Studying perceived competence as a mediator between information and BSE frequency could offer a greater understanding of BSE and could be clinically relevant. A major barrier to BSE is the lack of perceived competence in performing it.

If specific information was found to promote BSE by overcoming this barrier, the variables of information and competence could be influenced through nursing interventions.

Future research could also focus on the threat of BSE and goals for doing BSE. Observing the relationship of these variables to BSE practice could further the understanding of BSE and could suggest implications for nursing practice. For example, if certain goals for doing BSE were found to be positively related to frequent BSE, nurses could emphasize the salience of such motivating goals to promote BSE.

Applying ideas from self-regulation theory to BSE could build on past research. The experimental research derived from self-regulation theory has focused on acute and relatively unavoidable stressful situations. Whether self-regulation theory is applicable to a less acute and more easily avoidable threat, the possibility of a breast abnormality, remains to be tested. Self-regulation theory has helped explain coping with medical procedures that are performed on patients. Whether it could likewise help explain coping with the threat of a screening procedure that is performed by the woman herself is not known.

Future research on BSE could build on past research by being theoretically based and employing an experimental design. An experimental design could be used to evaluate the importance of specific interventions to BSE practice, to measure and manipulate hypothesized mediating variables, to assess the direction of relationships, and to examine the relationship of several variables simultaneously. If future research incorporated some of the suggestions proposed here, BSE and other similar screening behaviors could be better understood.

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