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Original Article

Factors Related to Breast Cancer Preventive Behaviors in Middle-aged Women: An Application of Protection Motivation Theory

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Abstract

Introduction: Screening behaviors along with a healthy lifestyle and regular physical activity play an essential role in reducing mortality from breast cancer. The present study aimed to determine the factors associated with breast cancer-preventive behaviors based on the theory of protection motivation in women in Neyshabur city.

Methods: In this cross-sectional study, 325 women aged 30 to 69 years referred to Neyshabur health service centers were studied after enrolment through cluster sampling. The data collection tool was a researcher-made self-report questionnaire that had acceptable validity (face and content) and reliability (Cronbach's alpha = 0.83). Data were analyzed using descriptive and analytical statistics with SPSS v19.

Results: Fifty-two percent of participants never had a breast self-examination before, and 72.6% had never been to a health center for a clinical breast examination. Only 6.8% of the participants had regular physical activity. All constructs of conservation motivation theory, except fear, were correlated with breast cancer-preventive behaviors. Perceived self-efficacy had the highest score, and perceived cost had the lowest score among protection motivation theory constructs. Regression analysis reflected that protection motivation, perceived severity, perceived rewards, and awareness were predictors of the adoption of breast cancer-preventive behaviors. Overall, these variables could predict 15.4% of behavioral change.

Conclusion: Theory-based educational planning to encourage women to adopt breast cancer-preventive behaviors, including a healthy lifestyle and screening behaviors, is essential.

Keywords: Prevention, Breast Cancer, Women, Motivation, Theory

Introduction

The annual incidence of breast cancer is increasing by 5.9% (1). Lifestyle modification through a healthy diet and increasing regular physical activity plays an important role in preventing breast cancer (2). Evidence shows that participation in breast cancer screening programs can reduce the incidence of this disease by up to 40% (3). The theory of protective motivation focuses on the factors affecting motivation and, ultimately, the protective behavior of the individual (4). Because of the importance of primary and secondary prevention for breast cancer, we aimed to determine factors affecting the adoption of breast cancer prevention behaviors based on the theory of protection motivation in women visiting comprehensive health service centers in Neyshabur.

Materials & Methods

This cross-sectional study was conducted on 325 women visiting comprehensive health service centers. The data collection tool was a researcher-made self-report questionnaire including demographic variables, preventive behaviors, and theories of protection motivation theory. The content validity of the questionnaire was examined qualitatively and quantitatively and the Cronbach's alpha

value was 0.83. Data analysis was performed on SPSS 19.

Results

The mean age of women participating in the study was 37.31 ± 7.32 years. Among the participants, 52% had never performed a breast self-examination, and 72.6% had never been to a health center for a clinical breast examination. Only 6.8% of participants had regular physical activity, 49.8% consumed less than 2 servings of fruit per day, 66.8% consumed less than 3 servings of vegetables per day, and 39.7% consumed a combination of solid and liquid oils in their diet. Among the theoretical constructs, the highest score was related to perceived self-efficacy.

Based on the findings, breast cancer prevention behaviors, perceived cost, perceived sensitivity, and perceived reward had a statistically significant relationship with women's education level ($P < 0.05$). All of the constructs of protection motivation theory, except for fear, were correlated with breast cancer prevention behaviors.

According to the results of the multiple linear regression analysis, protection motivation theory constructs predicted a total of 15% of the variance in breast cancer prevention behaviors, among which perceived reward, protection motivation, perceived severity, and awareness were the strongest determinants of behavior.

Table 1: Multiple Linear Regression Analysis of the Contribution of Protective Motivation Theory Constructs to Adopting Breast Cancer-Preventive Behaviors

Variable	Line Slope	Standard Error	P-value	Coefficient R2
Perceived Reward	-0/169	0/056	0/003	0/154
Protection Motivation	0/170	0/051	0/001	
Perceived Severity	-0/098	0/037	0/008	
Awareness	0/258	0/104	0/01	

Discussion

In the present study, more than half of the participants had never had a breast self-examination before, and most of them had never been to a health center for a clinical breast examination. More than half of the

participants ate less than 3 servings of vegetables a day. And nearly half of women had less than 2 servings per day of fruit in their food basket. Steinberg et al. reported in their meta-analysis on the effective role of fruits and vegetables in cancer prevention in women (5). Given the importance of a

healthy diet in the prevention of breast cancer, it seems necessary to develop supportive economic policies for low-income households.

In our study, less than 10% of women had regular physical activity. It seems that providing the necessary infrastructure for women's physical activity and educational programs to improve women's motivation and skills in this field will be effective.

The findings of the present study showed that the level of women's education was significantly correlated with breast cancer prevention behaviors and perceived cost, perceived rewards, and perceived sensitivity. These are consistent with the findings of Al Arawi et al (6). Also, Curtin et al. found that women with lower levels of education were less likely to believe that regular physical activity and a healthy diet were associated with cancer (7). It seems that women with higher levels of education are more aware of breast cancer prevention behaviors; therefore, in planning educational interventions, the educational content should

be adjusted to the level of education of the audience.

Based on the findings of our study, the constructs of protective motivation, perceived reward, perceived severity, and awareness were the most important determinants of breast cancer prevention behaviors among women, which accounted for a total of 15% of the variance in behavior change. Educational programs will be effective in promoting women's skills in achieving protective behaviors.

Conclusion

Cancer prevention behaviors in women are less than the recommended values. It is necessary to provide theory-based educational programs to improve the self-efficacy and motivation of women along with developing their skills and creating the necessary infrastructure in this field.

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