

Direct Effects of Marital Empathy, Body Image, and Perceived Social Support on Quality of Life of Married Women with Breast Cancer and the Mediating Role of Perceived Marital Quality

Zabihollah KavehFarsani^{1*}, Everett L. Worthington Jr².

Abstract

Objective: Breast cancer is the most commonly diagnosed cancer in women worldwide, and its incidence has increased recently. Diagnosing cancer can create many challenges, especially for married women. The aim of the present study was thus to evaluate the effect of the relationships among marital empathy, body image, and perceived social support on quality of life (QoL) and the mediating role of perceived marital quality.

Method: Married women with breast cancer (N = 160) were selected through purposive accessible sampling. Measures included body image scale, Batson empathy adjectives, multidimensional scale of perceived social support, perceived marital quality, and QoL. The research method was descriptive-correlational and using structural equation modeling.

Results: The best model obtained showed that all predictors directly predicted QoL: marital empathy, body image, and perceived social support (P < 0.001). Predictors (except for perceived social support by family, friends, and others) also worked indirectly through perceived marital quality to predict QoL (P < 0.001).

Conclusion: Several variables predicted QoL for women with breast cancer, including body image and marital empathy. Most of such variables had both a direct effect and an indirect effect, working through perceived marital quality to affect QoL. Social support, however, had only a direct effect on QoL.

Key words: *Body Image; Breast Cancer; Empathy; Marriage; Perceived Social Support; Quality of Life (QoL)*

1. Department of Counseling, Shahrekord University, Shahrekord, Iran.
2. Department of Psychology, Virginia Commonwealth University, Virginia.

*Corresponding Author:

Address: Department of Counseling, Shahrekord University, Shahrekord, Iran, Postal Code: 64165478
Tel: 0913-2831403, Fax: 038-32324401, Email: KavehFarsani@sku.ac.ir

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Breast cancer is the most commonly diagnosed cancer in women across the world. Globally, more than two million patients are diagnosed with invasive breast cancer per year (1). The outcomes of the disease, following medical diagnosis and treatment, are not limited to physical health. Sources of stress may affect the social, mental, and emotional lives of these women (2, 3). Breast cancer as a chronic disease involves several stages, including diagnosis, treatment, and re-entry or recovery. Each stage can be described in terms of medical, emotional, and psychosocial aspects (4). Therefore, it is challenging to adjust to the disease. This adjustment depends on the specific experiences, needs, and threats posed to women during treatment (5). Marital and family factors appear to affect married women's adjustment to cancer because cancer diagnosis influences the entire family system (6, 7). Poor marriages can add stress and impair adjustment, while good marriages can provide perceived social support and enhance adjustment (7). Thus, the course of the disease and effectiveness of the treatment can depend on and affect their quality of life (QoL). The family is a major source of support for married women with breast cancer, and perceived marital quality is of paramount importance to the patients (8). Few studies have investigated the effects of marriage relationship aspects on the QoL for married breast cancer women. In this research, we have emphasized the effects of marital variables such as marital empathy, perceived marital quality, perceived social support, and also body image on women's QoL.

Empathy for the partner is associated with QoL. A high level of the spouse's empathy was also a strong predictor of the patients' QoL (9). In this regard, it can be said that marital empathy is the couples' ability to feel empathy for each other's emotions and thoughts, and to respond to them with right emotions (10). Marital empathy significantly contributes to the improvement of the quality of marriage. Marital empathy and perceived marital quality were found to be positively and significantly related (11, 12). Increasing empathy in emotional relationships increases the partners' ability to comprehensively understand each other's feelings. It results in their active participation in calmer decision-making and problem-solving, and it can improve their intimate relationships (13). The results of research on patients with breast cancer has demonstrated that marital empathy is a strong and direct predictor of marital quality (e.g., research study No (14)). In other studies, married women with breast cancer described empathy for their husbands as a feature of good communication with their spouses (15, 16), suggesting that empathy could positively affect marital quality. The existence of and an increase in marital empathy between couples seem to lead to increased understanding by the partner concerning these negative behaviors and feelings of his wife caused by the existing condition (breast cancer),

creating a sense of relaxation and causing women to express their feelings about their circumstances.

Breast cancer can cause disturbing changes in body image. Hair loss and surgery to women's breast can negatively affect their body image, femininity, and sexuality (17). Such a disturbed body image might be accompanied by negative psychological consequences (18) and thus can affect women's QoL, increasing the risk of depression and anxiety (19, 20). Hence, numerous studies have found body image and QoL to be negatively related among breast cancer patients (21, 22). Social support contributes significantly to the way people cope with life crises, such as breast cancer (23). It has often been suggested as a factor that protects one against stress (24), which can affect the physical (25) as well as the mental health of individuals. Because patients with breast cancer may experience problems such as depression, anxiety, and psychological distress during their treatment (26, 27), they need social support from family, friends, and certain individuals or groups. It is vital for them since these supports reduce their stress and help them cope with this situation. This leads to an improvement in their QoL (28). Thus, the findings of various studies, especially those on cancer patients, have indicated that higher levels of perceived social support are associated with enhanced QoL and reduced depression (29, 30).

Another variable examined in this study is the perception of marital quality. The results of some studies have shown that married individuals have a lower mortality rate in some diseases, such as cancer, compared to unmarried ones (31); however, the quality of marital relationships seems to be a stronger predictor of health than the presence of a partner (32). Therefore, perceived marital quality is an important intermediary variable that connects a woman's empathy, body image, and perceived total social support with her QoL when she has breast cancer. The direct effects are well established (21, 30), but the reason for the hypothesized indirect effect is that empathy, body image, and perceived total social support for the partner can increase perceived marital quality and that provides sources of increased QoL.

Considering the relationship between social support and marital quality, social support is defined as the perception indicating that one is part of a supportive social network (e.g., spouse, friends, family, and colleagues) and can receive love, help and obligation from this network (33). Social support in married life is of paramount importance and necessity, especially for women with breast cancer because the lives of these people are replete with stress and anxiety due to this illness, and one of the important aspects of social context is satisfaction with social support, especially with emotional support from close and intimate persons (34). Several studies have shown that social support can improve mental strength and provide other resources to overcome stress (35). It can also be considered as a

protective factor against the negative effects of stress, anxiety, and marital conflict on marital quality (36, 37). Thus, this study aims to investigate marital empathy, body image, perceived social support, as direct predictors of QoL in married breast cancer women. Moreover, the present study seeks to investigate whether perceived marital quality yields indirect effects between predictors and QoL.

Thus, we test the following hypotheses.

1. There is a direct path between marital empathy, body image, perceived social support and QoL.
3. Marital empathy has an indirect path on QoL through perceived marital quality.
3. Body image has an indirect path on QoL through perceived marital quality.
4. Perceived social support—from partner, family members, and friends—has an indirect path on QoL through perceived marital quality.

Materials and Methods

Study Design and Population

In this study a cross-sectional research design was utilized. The required data were collected by the use of questionnaires. The suitability of the proposed model was tested using structural equation modeling. The participants of the study consisted of 160 married breast cancer women who referred to the main hospitals of the Medical Sciences University in Isfahan province, Iran. Additionally, the inclusion criteria include being married, being able to read and write in Persian, not suffering from other medical conditions, and having complete consent to participate in the study. These patients were receiving chemotherapy or radiotherapy intervention during the study.

Study Tools

Batson's Empathy Adjectives

It is an 8-item scale developed by Batson, *et al.* (1983) consisting of empathic emotions (i.e., empathetic, sympathetic, softhearted, compassionate, warm, tender, concerned, and moved). Participants expressed their current empathic feelings toward their spouses using a response format ranging from 1 (“not at all”) to 6 (“severely”). The participants scored 8 - 48 on this scale. In a study by Batson *et al.* (1988), Cronbach's alpha was 0.93 (38). Cronbach's alpha of this subscale was 0.75 in this research.

Body Image

The 10-item Body Image Scale developed by Hopwood *et al.* measures emotional (e.g., self-awareness), behavioral (e.g., having difficulty looking at naked bodies), and cognitive (e.g., being satisfied with appearance) personal evaluation of a woman's body image in a brief and comprehensive way. Items are scored on a 4-point scale ranging from “never” (0) to “very high” (3). Thus, the scale score ranged from 0 to 30. High scores indicate more distress or higher concerns about body image. Hopwood *et al.* reported the

estimated reliability of this scale to be 0.93 (39). Cronbach's alpha reliability in this research was 0.91.

Multidimensional Scale of Perceived Social Support

This 12-item questionnaire developed by Zemen, *et al.* (1988) measures perceived social support from family, friends, and important individuals. Items are scored on a 7-point scale (with 1 indicating complete disagreement and 7 indicating complete agreement). In Canty-Mitchell and Zimet (2002), Cronbach's alpha coefficient for friends, family, and spouse or significant individuals was 0.89, 0.91, and 0.91, respectively. In addition, alpha was 0.93 for the whole scale (40). Moreover, Cronbach's alpha values for these sub-scales in the present study are 0.87, 0.65, and 0.77 for the significant other, family, and friends, respectively.

Perceived Marital Quality

In order to measure perceived marital quality, the single item “How do you rate the quality of your relationship?” was developed for this research. The 10-point Likert scale offering 10 options to choose from is between 1 and 10 with 1 indicating “extremely bad” and 10 “extremely good.” The total score is between 1 and 10.

Quality of Life

The participants' psychological QoL was assessed using the World Health Organization QoL-brief (WHOQOL-Brief) subscale. This scale was validated in the context of Iran by Nejat, *et al.* (2007). Using a 5-point response options, Cronbach's alpha of this 6-item subscale was calculated to be 0.70 (41). Moreover, the Cronbach's alpha reliability of this subscale was 0.81 in the current research.

Ethical Consideration

The present study was conducted in accordance with the 1964 Helsinki declaration and later amendments or ethical standards comparable to it and approved by the Ethics Committee of Shahrekord University in Iran (Ethics Code: IR.SKU.REC.1398.007). The objectives of this research were fully explained to the participants. Confidentiality of the participants' responses was emphasized. Identities of the participants were not collected, and each participant was free to leave the experiment whenever he or she desired.

Statistical Analysis

The data were analyzed using descriptive statistics (mean and standard deviation) and structural equation modeling. The bivariate relationship between the variables was then analyzed via Pearson correlations (see Table 1). Finally, to test the hypothesized model, Structural Equation Modeling was conducted through Amos 24.

Results

Descriptive Analysis

The mean age and standard deviation of the sample were 42.74 and 6.92, respectively. Participants' educational level varied from diploma (35%) to Ph.D. (17%). The

majority of participants held a bachelor's degree (48%). In addition, patients had 1 to 5 children; most of them had 2 children (40.6%). Furthermore, the duration of marriage ranged from 2 to 30 years ($M = 26.57$; $SD = 12.88$). Finally, 60% of them lived in urban regions and 40% in rural regions of Iran.

Table 1 shows the mean values, standard deviations, and correlations among the study variables. The correlation coefficients indicate that body image has a negative and

significant relationship with other variables (i.e., perceived marital quality, marital empathy, perceived social support, and QoL). The other variables have a positive and significant relationship with each other. Therefore, our first hypothesis was supported (see Table 1).

Table 1. Descriptive Indicators and the Correlation among Marital Empathy, Body Image, and Perceived Social Support, Quality of Life and Perceived Marital Quality of Married Women with Breast Cancer

Descriptive Statistics			Correlations among Variables						
Variables	Mean	Std. Deviation	1	2	3	4	5	6	7
1. Marital empathy	35.96	10.02	$\alpha = 0.75$						
2. Body image	9.97	7.77	-0.21**	$\alpha = 0.91$					
3. Family	23.47	5.42	0.33**	-0.32**	$\alpha = 0.65$				
4. Friends	20.66	6.61	0.12	-0.25**	0.66**	$\alpha = 0.77$			
5. Significant other	22.73	5.79	0.29**	-0.27**	0.77**	0.61**	$\alpha = 0.87$		
6. Marital quality	6.83	2.69	0.50**	-0.44**	0.31**	0.23**	0.31**	-	
7. Quality of life	19.39	4.16	0.48**	-0.53**	0.39**	0.31**	0.40**	0.60**	$\alpha = 0.81$

Structural Equation Modeling

The proposed model fit the data well. Initially, Model A was fitted in which marital empathy, body image, and social support as a latent variable were associated with both the intermediary variable (i.e., perceived marital quality) and the criterion variable (i.e., QoL). The results of this analysis yielded $\chi^2 (N = 160) = 9.745$, $P < 0.283$; $CFI = 0.99$, $RMSEA = 0.03$ (95% $CI = 0.00, 0.010$), $SRMR = 0.02$.

However, as shown in Table 2, no direct significant relationship is observed between perceived social support and perceived marital quality ($P < 0.178$). The relationship between perceived marital quality and perceived social support as the latent variable was eliminated in Model B. The following results are examined using the final model. The results of the final model are $\chi^2 (N = 160) = 11.54$, $P < 0.240$; $CFI = 0.99$, $RMSEA = 0.04$ (95% $CI = 0.00, 0.0104$), $SRMR = 0.03$.

Table 2. Appropriateness Indicators of the Research Model

χ^2	Df	(χ^2/df)	CFI	SRMR	RMSEA
11.54	9	1.28	0.99	0.03	0.04

The final model for this research as well as the standard path coefficients are shown in Figure 1. The proposed model hypothesized that social support also affected QoL by working indirectly through perceived marital quality, but that path was not significant in the final model.

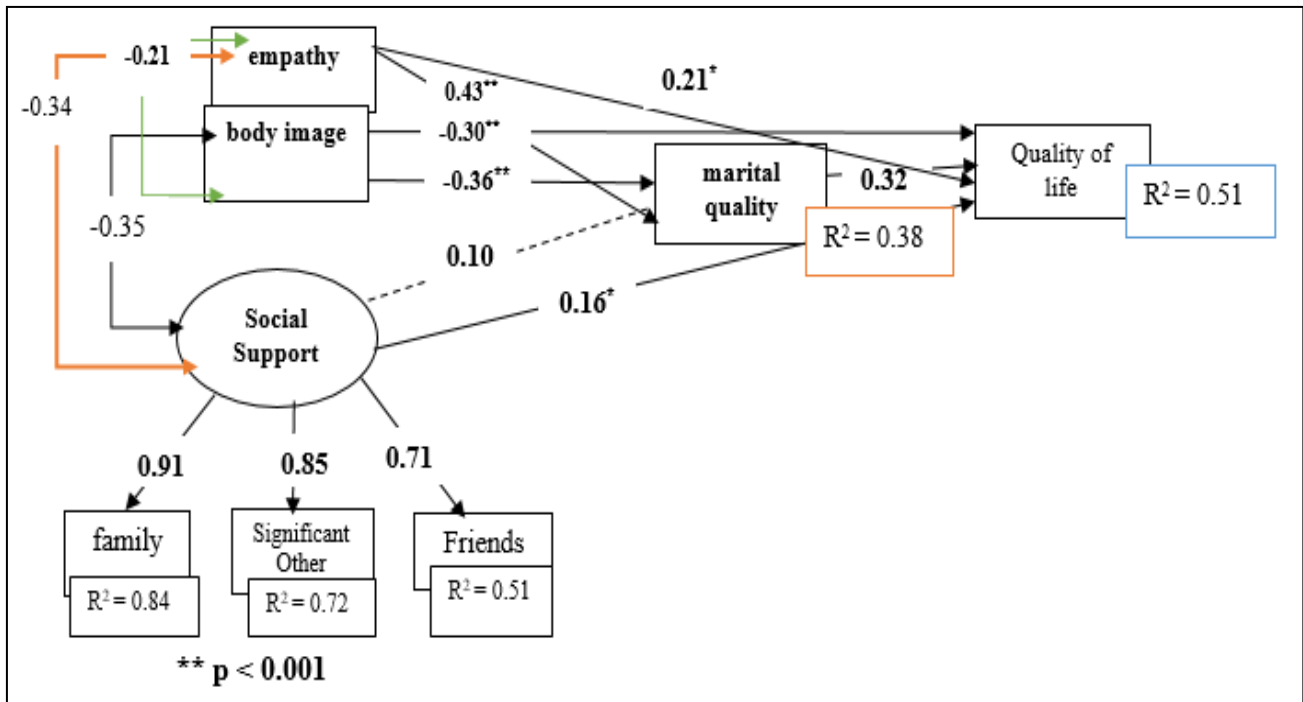


Figure 1. Final Model of Standard Estimation Coefficients for Quality of Life Based on Marital Empathy, Body Image, and Perceived Social Support with the Mediating Role of Perceived Marital Quality of Married Women with Breast Cancer

Table 3 illustrates the bootstrap results for the indirect or mediated paths of the proposed model. Depending on the bootstrap data interpretation, it is determined whether the 95% bias-corrected and accelerated confidence intervals (BCa 95% CI) contain zero or not. The analyses and bootstrap estimates were conducted using 5000 bootstrap samples. As it is evident in Table 3, the 2nd and 3rd hypotheses are confirmed. In fact, all paths of marital empathy and body

image to QoL through perceived marital quality are statistically significant (see Table 3). However, the 4th hypothesis is rejected. Additionally, no significant relationship is observed between perceived social support and QoL through perceived marital quality as there is no direct relationship between QoL and perceived social support. However, there is a direct relationship between the latent variable of social support and QoL.

Table 3. Bootstrap Results Regarding the Mediating Role of Perceived Marital Quality in the Relationship between Marital Empathy, Body Image, and Perceived Social Support and Quality of Life of Married Women with Breast Cancer

	Standardized Estimate	Unstandardized Estimate	Lower	Upper	P value
Marital Empathy ⇒ Marital Quality ⇒ Quality of Life	0.248***	0.103	0.071	0.138	0.001
Body Image ⇒ Marital Quality ⇒ Quality of Life	-0.206***	-0.111	-0.161	-0.073	0.001
Perceived Social Support ⇒ Marital Quality ⇒ Quality of Life	0.181***	0.615	0.380	0.946	0.001

Discussion

Marital empathy and body image were both directly and indirectly (i.e., through perceived marital quality) associated with QoL. However, perceived social support

was only directly related to QoL. Our findings suggest that QoL for breast cancer patients is related to women’s perceptions. It depends on their marital empathy for their partners, their perceived body image, and their perceived

social support from their partners, family members, and friends.

Marital empathy was one of the variables in the study which was related to QoL both directly and through perceived marital quality. Understanding one's partner's points of view is an important predictor of marital adjustment as well as perceived marital quality (42). Empathy is especially important when people are in difficult stages of their lives (e.g., at the stage of diagnosis or treatment of breast cancer) or are experiencing severe stress since empathy is an important component of the care system. Therefore, empathy acts as an important mechanism through which individuals can identify and respond to their partners' distress. Then, if couples are able to experience and express empathy in their marital relationships, the closeness and support of their spouses, especially in times of distress, will be enhanced. In addition, as previous research results have indicated, empathy predicts the relationship quality and role function in the family (e.g., (43)). It also affects the satisfaction with their relationship when couples face negative situations and adversarial events in life (44) and is considered a strong predictor of QoL for these patients (45). One possible reason for this prediction is that those with marital empathy understand their spouses well. They might even see the world through the eyes of their partners. When couples understand each other, they would realize that the possibility of marital conflicts would greatly reduce; this leads to the reduction of the stresses and the discomforts of married life. Then, the level of perceived marital quality would increase. Therefore, this study results are consistent with those obtained by the previous ones.

Body image disorder due to breast cancer can affect the mood, as well as the interpersonal relationships of women with this disease; it might also lead to their social isolation (46). Body image disorder may significantly affect the QoL of these individuals (through anxiety, psychological distress, etc.) (47). Therefore, this variable can be considered an important and determining variable in the QoL of breast cancer women because even after successful treatment, they must be able to tolerate the changes in their appearance (48). As women deal with these problems for many years, they may experience hopelessness, despair, and depression. Therefore, some studies' results have indicated a negative relationship between body image and the QoL (21, 22) which are consistent with the results of this research. Furthermore, the present study supported the indirect relationship between body image and QoL through marital quality. In this regard, it can be stated that studies on body image in breast cancer women have rarely discussed the perception of marital quality, while the perception of marital quality is one of the most important variables in the lives of married people. In fact, intimate relationships are a very important potential source of coping with various life events (e.g., breast cancer) (49). It seems that diagnosing women's breast

cancer can affect their intimate relationships with their partners. In fact, the results of some studies on body image have shown that body image can have a negative impact on the intimate relationships of young breast cancer women and their partners (45, 50). With increasing dissatisfaction with body image, there is a possibility of impaired sexual function (51) and impaired quality of relationships. Because sexual function and intimate relationships are the components of marital quality, there is a possibility of reduced marital quality. Therefore, in the present study, body image perception was related to the quality of marital life.

Another finding of the current research was the direct association between perceived social support and QoL. According to the existing texts, cancer patients receive high social support. They are highly regarded, encouraged, and cared for by their friends, family, and colleagues. It is likely that social support would help such patients realize others' affection, which can reduce their anxiety (trauma). In addition, social support can have positive effects on the treatment outcomes of cancer patients. Findings from various studies, especially those on cancer patients, have shown that if they perceive more social support, they will report higher QoL and lower depression (29, 30). The results obtained by this research were in agreement with those of the literature.

The marital relationship quality is crucial for the QoL of women with breast cancer both at the stage of cancer diagnosis and treatment (52). This is because studies have shown that marital dissatisfaction in these patients is related to social-psychological factors, including emotional distress or depression (53), which affect QoL. In this regard, it is important to note that it is not enough for couples to be together; the quality of their relationship and their interaction with one another is essential since this quality can be related to physical and mental health (54), both of which affect QoL.

If women with breast cancer have a disturbed marital relationship, their stress would increase. In addition to the effect on their QoL, this stress can likely affect the treatment of and recovery from breast cancer.

Limitation

First, this study was a cross-sectional research. Thus, it is not possible to deduce causal relationships between the variables; future research should be conducted longitudinally. Second, the sample size in this research was small; a larger sample size is required to be used in future studies to evaluate the effects of the mediating and moderating variables. Finally, self-report questionnaires with certain limitations were employed as the research instrument in this study. Therefore, future research studies should use semi-structured interviews as well. Despite these weaknesses, this study has some strengths. It adds to the scientific literature on breast cancer patients. Moreover, in the context of Iran, it is the first study which used these variables in a structural

equation model. Moreover, family variables were highlighted to improve psychological quality, which is the least researched area. Ultimately, it is one of the few studies conducted among married women with the disease.

Conclusion

In the present study, perceptions of marital empathy and body image acted indirectly through perceived marital quality to affect QoL. In fact, ignoring them may adversely affect the whole family and especially the patient involved in treatment. Although this research study is cross-sectional and the findings do not establish causality, they can be used in planning to help the health and the QoL of this group of patients. Based on the findings of this study, we conclude that along with medical adjuncts, which are often long-term, paying attention to the factors affecting perceived marital quality (e.g., marital empathy and body image), as well as teaching these family variables to the patients' spouses can positively affect patients' QoL.

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Conflict of Interest

None.

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