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Relationship Between Family Functioning and Spiritual Health in Women Breast Cancer Survivors: An Analytical Cross-Sectional Study

Fatemeh Zolfaghary[1], Mohsen Vakili Sadeghi[2], Reza Mashaghitabari[3], Ali Bijani[4], Farzan Kheirkha[4], Mobina Dezhman[1], Hajar Adib-Rad[5*]

[1] Student Research Committee, Babol University of Medical Sciences, Babol, Iran.
[2] Cancer Research Center, Health Research Institute, Babol University of Medical Sciences, Babol, Iran.
[3] University of Belgrade, Faculty of Medicine, Belgrade, Serbia.
[4] Social Determinants of Health Research Center, Health Research Institute, Babol University of Medical Sciences, Babol, Iran.
[5] Infertility and Health Reproductive Research Center, Health Research Institute, Babol University of Medical Sciences, Babol, Iran.

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Abstract

Background: *Breast cancer (BC) incidence and mortality rates are on the rise, with a higher mortality rate reported in underdeveloped nations. The family practice and spiritual health have an impact on the mental well-being of BC patients. This study aimed to investigate the relationship between family practices and spiritual health among women breast cancer survivors.*

Methods: *This analytical cross-sectional study was carried out on a sample of 96 female breast cancer (BC) survivors. In this study, a non-random convenience sampling method was employed. Data were collected using demographic and fertility checklist, the Spiritual Well-Being Scale (SWBS), and the Family Assessment Device (FAD).*

Results: *The results of the study indicated that in the components of FAD, the general functioning subscale had the highest mean score, while the problem-solving subscale had the lowest mean score (31.26±2.14 and 12.64±1.66, respectively). The total spiritual health score was 66.27±9.62, and most women had a moderate spiritual health level (90.53%). A significant positive correlation was found between total spiritual health and age (r=0.227, P-value=0.027), along with a significant negative correlation with the roles dimension of family functioning (r=-0.233, P-value=0.023).*

Conclusions: *This study showed that the optimal level of family functioning leads to better spiritual health in women with BC. The impact of spirituality on human beings is significant, and spiritual crises can negatively affect their physical and mental health.*

Keywords: Breast cancer, Survivors, Family functioning, Spirituality, Health.
***Corresponding to:** H Adib-Rad, **Email:** AdibRad2015@gmail.com

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Introduction

Family functioning is the cornerstone of every individual's personality; the stronger this foundation, the more steadfast the person remains in life's storms. Family functioning reflects the overall quality of a family's operation and stems from the social support among family members. Good family functioning helps manage fear in cancer patients, providing them with emotional support and improving their physical health[1]. Family functioning not only provides for the healthy physiological, psychological, and social development of family members but also predicts their psychological well-being and mental health[2]. The family helps its members to gain an appropriate understanding and develop a positive perspective during critical situations. Consistent with the family's crucial role in helping individuals adapt to problems, individuals' spiritual tendencies also play a decisive role in accepting and adapting to difficulties[3]. One of the important dimensions of human beings is spirituality. Spiritual crises can have adverse effects on physical and mental health. Illnesses cause spiritual distress in patients[4].

Breast cancer (BC) is one of the most common types of cancer in women and can be dangerous if diagnosed late. In Iran, BC ranks among the leading causes of cancer-related mortality in women. National and global studies identify this cancer as one of the most common causes of cancer-related mortality in the country. Additionally, predictions indicate that the incidence and mortality rates of BC in Iran continue to rise[5]. Approximately 8,500 new cases of BC are reported annually in Iran. The disease tends to appear at least a decade earlier and in more advanced stages among Iranian women compared to those in Western countries[6].

The situation caused by BC disrupts the balance in family dynamics. The family's dysfunctional functioning increases the intensity of the fear of cancer recurrence[7]. The family system has been observed to impact health-related behaviors in individuals with cancer[8]. In the context of illness, family functioning is characterized by the capacity of its members to uphold positive relationships, fulfill their respective roles within the family, manage familial challenges, adjust to new routines and procedures, and communicate with one another effectively[9]. The family functioning and spiritual health have an impact on the mental well-being of women BC survivors, as well as their physical recuperation process[3]. The promotion of positive coping mechanisms by fostering a supportive family environment can enhance resilience directly[10]. Having an understanding of family functioning can promote family involvement in decision-making and facilitate daily care interventions for the patient[11]. Collaborative efforts from the point of diagnosis and throughout the treatment process can enhance clinical practices in oncology settings[12]. Family support affects all aspects of quality of life in BC patients, with the greatest impact seen on their overall health status[13]. There may be a connection between women's religious and spiritual beliefs and BC[14]. A noteworthy correlation exists between

spirituality and health, so that individuals who possess greater spirituality exhibit better health outcomes[15].

Spirituality is recognizable for all human beings across the world and is an internal, dynamic, and evolutionary process. Its impact becomes evident in the individual across all stages and domains of life, and even in their way of living. Spirituality encompasses all the internal resources of an individual, such as their religious beliefs, will to live, and dedication to life. Moreover, women with higher levels of spirituality may experience enhanced psychological resilience[16]. Individuals who hold religious beliefs tend to exhibit milder disease severity and improved performance[17]. The spiritual beliefs of women can influence their inclination towards BC screening. Therefore, it may be advantageous for women to have access to healthcare providers who share their gender, race, ethnicity, or religion[18]. BC treatment extends far beyond medical interventions—it demands a compassionate, multidimensional approach that addresses patients' physical, emotional, and psychological needs [19].

A woman's cancer diagnosis can negatively affect not only the patient's emotional and behavioral functioning but also the entire family's well-being. A thorough analysis of the existing research on BC reveals that the family functioning aspect has not been the primary focus of studies, with few studies dedicated to exploring the family index. A study reports that in BC patients, family functioning is an important factor that affects an individual's self-esteem and is their primary source of happiness[20]. On the other hand, the results of one study indicate that the components of problem-solving, communication, and roles in the family functioning variable were significantly lower in women with BC undergoing treatment compared to women who had completed treatment and healthy women[3]. Despite extensive research on the psychological and clinical aspects of BC, limited studies have directly examined the role of family functioning and spiritual health, particularly in the Iranian context. Therefore, this study was conducted to explore the relationship between family functioning and spiritual health among women BC survivors in the north of Iran.

Materials and Methods

This analytical cross-sectional study was conducted at Omid Clinic, Rouhani Teaching Hospital in Babol, northern Iran, involving a sample of 96 female BC survivors between August 2021 and October 2022. The study (ID: IR.MUBABOL HIR. REC.1400.055) received approval from the Ethics Committee of Babol University of Medical Sciences. A non-random, convenience sampling method was employed based on practical considerations (accessibility of patients, resource constraints). In accordance with the Declaration of Helsinki guidelines, participants were required to provide written informed consent prior to their involvement in the study.

The inclusion criteria for this study were female BC survivors aged 20 to 65 years with confirmation of patient status (medical records, pathology reports, and physician approval), Iranian nationality and residency in Babol, basic literacy sufficient to complete the questionnaires, willingness to sign the informed consent form, absence of drug addiction, and no speech or hearing impairments that would hinder communication with the researcher. Exclusion criteria included unwillingness to cooperate or incomplete questionnaire responses, hospitalization before the end of the follow-up period, a history or presence of mental illnesses.

The sample size was calculated with a 95% confidence level and a 10% margin of error (d=10%), assuming p=q=50%. This resulted in an estimated sample size of 96 participants. Initially, 110 women aged 20 to 65 years with BC were invited to participate; of these, 96 completed the questionnaires, while 14 were excluded due to incomplete responses. Consequently, the final analysis included 96 women with BC. The formula for sample size is as follows:

$$n = \frac{Z_{1-\alpha_n}{}^2 \; Pq}{d^2}$$

Demographic and fertility checklist: The data collected for the study consisted of various demographic information, such as the participant's age, job, husband age and job, body mass index (BMI), menarche age, relationship status with spouse, lactation, history of BC in the family, type of treatment undergone, residence, and satisfaction with income.

Family Assessment Device (FAD): The 60-item questionnaire utilized in this study was developed by Epstein, Baldwin, and Bishtab in 1983 to assess the organizational and structural characteristics of families and their ability to manage family tasks. It is a self-report scale that measures various aspects of family functioning. Each question is scored from 1 to 4 based on the response of completely agree: 1, agree: 2, disagree: 3, and completely disagree: 4. Questions that describe unhealthy performance are everse-scored, and lower scores indicate better family functioning. The questionnaire consists of seven subscales. The subscales of the questionnaire are problem-solving (6 items), communication (7 items), roles (9 items), affective involvement (8 items), behavioral control (13 items), and affective responsiveness (8 items). The FAD also includes an independent dimension of general functioning (9 items) to assess the overall functioning of the family[21]. An Iranian study by Zadeh Mohammadi and Malek Khosravi, titled "A Preliminary Investigation of the Psychometric Properties and Validation of the Family Assessment Device (FAD) Scale," was conducted on 494 women and underwent psychometric evaluation. The overall validity of the questionnaire, as measured by Cronbach's alpha, was 0.9, and for all domains, it was above 0.7. Its reliability was assessed through a test-retest method with 30 women, which showed high correlations across all domains, ranging from 0.5 to 0.8[22].

Spiritual Well-Being Scale (SWBS): The Paloutzian and Ellison spiritual health scale, which comprises 20 questions, 10 of which assess religious health and the remaining 10 evaluate existential health, was utilized to evaluate spiritual health. The questionnaire utilizes a 6-point Likert scale ranging from completely disagree to completely agree, and some questions are reverse-scored[23]. The tool's reliability was evaluated in a previous study, and the Cronbach's alpha coefficient was reported as 86%[24]. In the study by Dehshiri et al., the content validity of the questionnaire was confirmed after its Persian

translation. In addition, the reliability of the questionnaire was also confirmed, and its Cronbach's alpha was 0.82[25].

The statistical analysis was performed using SPSS version 25.0 (SPSS Inc., Chicago, IL). Assessment of data normality was performed by the Kolmogorov-Smirnov test. The descriptive statistics were presented as the mean (SD) for quantitative data and the frequency and percentage for categorical data. The data were analyzed using chisquare, and Pearson's correlation coefficient test was used to determine the two-way relationship (correlation). P-value<0.05 was considered statistically significant.

Results

Demographic characteristics are reported in Table 1. Most of the women had a Menarche age 12-13 year and BMI was <25. The majority of the women fell in the age group of 45-55 years, while their husbands mostly belonged to the age group of >55. Most women were satisfied with their relationship with their spouse and their income (45.2% and 44.0%, respectively). The majority of the women resided in urban areas, and a high proportion of them had a family history of BC (73.4% and 70.8%, respectively).

Table 1. Demographic characteristics in women breast cancer survivors

Variable	Number	Percent	Variable	Number	Percent
Age (year)			**Lactation**		
<45	31	32.3	**Yes**	53	75.7
45-55	44	45.8	**No**	17	24.3
>55	21	21.9			
Menarche age (year)			**Relationship with spouse**		
<12	27	28.1	**Very satisfactory**	21	33.9
12-13	53	55.2	**Satisfactory**	28	45.2
>13	16	16.7	**Unsatisfactory**	13	21.0
BMI* (kg/m2)			**Residence**		
<25	40	44.0	**Urban**	69	73.4
25-29.99	47	51.6	**Rural**	25	26.6
>=30	4	4.4			
Husband age (year)			**Satisfaction with income**		
<45	8	14.0	**High (very satisfactory)**	39	42.9
45-55	23	40.4	**Middle (satisfactory)**	40	44.0
>55	26	45.6	**Low (unsatisfactory)**	12	13.2
Job			**Family history of breast cancer**		
Employee	31	32.3	**Yes**	68	70.8
Housewife	65	67.7	**No**	28	29.2
			Type of treatment		
Husband job			**Surgery and chemotherapy**	23	24.2
Employee	31	53.4	**Surgery and radiotherapy**	45	47.4
Unemployed	27	46.5	**Chemotherapy**	24	25.3
			Radiotherapy and chemotherapy	3	3.2

*** Body mass index**

The components of FAD and spiritual health in women are presented in Table 2. The general functioning subscale had the highest mean score, while the problem-solving subscale had the lowest mean score (31.26±2.14 and 12.64±1.66, respectively). The average score for overall performance was 31.26±2.14. As lower scores indicate healthier family functioning, the results suggest that the family functioning in this study was good. The total spiritual health score was 66.27±9.62, and most women had a moderate spiritual health level (90.53%).

Table 2. Family functioning and spiritual health components in women breast cancer survivors

Components	Mean±SD	Possible lower values-upper values
Family functioning		
Problem-solving	12.64±1.66	1-24
Communication	16.36±1.36	1-28
Roles	23.17±1.54	1-36
Affective involvement	17.95±1.51	1-32
Behavior control	23.34±2.21	1-52
Affective responsiveness	25.03±2.92	1-32
General functioning	31.26±2.14	1-36
Total score	66.27±9.62	1-240
Spiritual health		

Religious health	33.07±5.16	10-60
Existential health	33.20±4.83	10-60
Total score	66.27±9.62	20-120

The relationship between family functioning and spiritual health in female is presented in Figure 1. Based on the interpretation of the family functioning questionnaire, a lower score is a sign of better functioning. As shown in Figure 1, lower family functioning is associated with greater spiritual health. The coefficient of determination (R^2=0.046) indicates that approximately 4.6% of the variation in family functioning can be explained by spiritual health. Although this value is relatively low, it suggests that better spiritual health is associated with better family functioning (Figure 1).

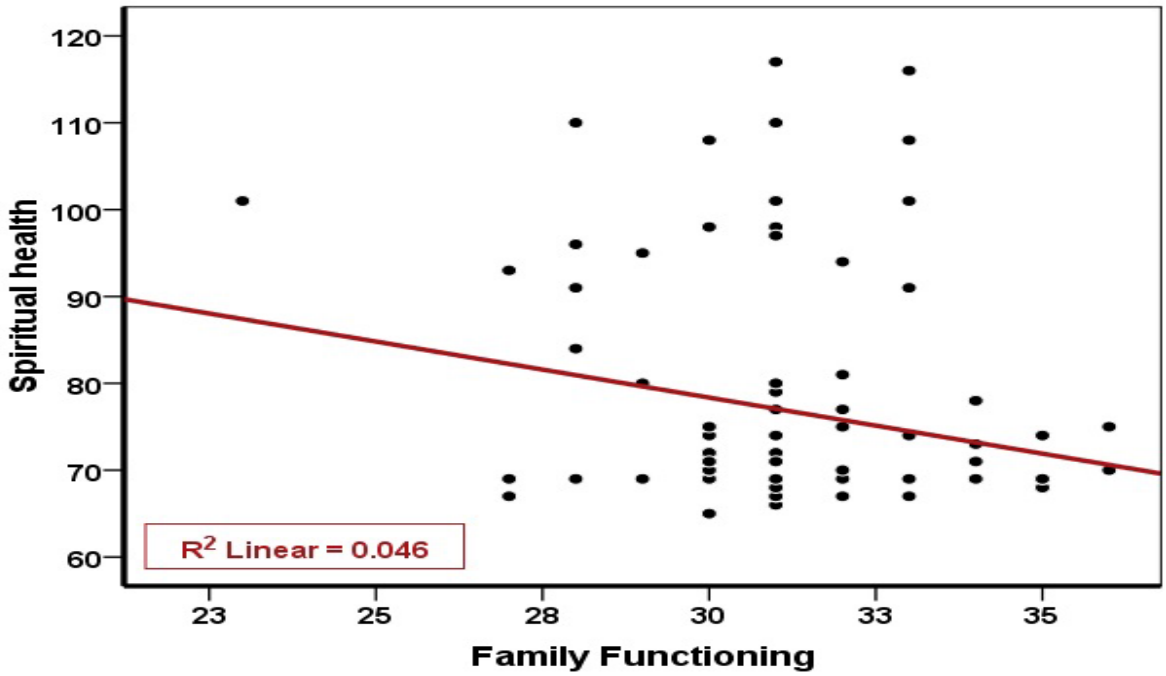

Figure 1. Relationship between family functioning and spiritual health in women breast cancer survivors

The correlation coefficient matrix between total spiritual health and other variables among women BC survivors is presented in Table 3. A significant positive correlation was found between total spiritual health and age (r=0.227, P-value=0.027), along with a significant negative correlation with the roles dimension of family functioning (r=-0.233, P-value=0.023). The findings indicated that with increasing age, women's total spiritual health also showed a significant increase. Conversely, poorer performance in the family roles domain was associated with a significant decrease in overall spiritual health. Also, the dimensions of family functioning, problem-solving, had a significant correlation with communication (r=0.269, P-value=0.008), and roles (r=-0.425, P-value=0.0001). Affective involvement had a significant correlation with problem-solving (r=-0.657, P-value=0.0001), communication (r=-0.270, P-value=0.008), and role (r=0.561, P-value=0.0001). Behavior control had a significant correlation with problem-solving (r=-0.355, P-value=0.0001), role (r=0.477, P-value=0.0001), and affective involvement (r=0.273, P-value=0.008). Affective responsiveness had a significant correlation with problem-solving (r=-0.275, P-value=0.007), communication (r=-0.214, P-value=0.037), role (r=0.249, P-value=0.015), and affective involvement (r=0.429, P-value=0.0001). General functioning had a significant correlation with problem-solving (r=0.374, P-value=0.0001), and affective involvement (r=-0.335, P-value=0.001) (Table 3).

Table 3. Correlation coefficient matrix between total spiritual health and other variables among women breast cancer survivors

Variable	Age	Problem-solving	Communication	Roles	Affective involvement	Behavior control	Affective responsiveness	General functioning	Total Spiritual health
Age	1								
Problem-solving	0.122 0.241	1							
Communication	0.029 0.779	0.269 0.008	1						
Roles	0.037 0.722	-0.425 0.0001	0.135 0.191	1					
Affective involvement	0.038 0.717	-0.657 0.0001	-0.270 0.008	0.561 0.0001	1				
Behavior control	-0.010 0.920	-0.355 0.0001	0.024 0.816	0.477 0.0001	0.273 0.008	1			
Affective responsiveness	0.049 0.634	-0.275 0.007	-0.214 0.037	0.249 0.015	0.429 0.0001	0.189 0.067	1		
General functioning	0.058 0.576	0.374 0.0001	0.171 0.098	-0.149 0.149	-0.335 0.001	0.052 0.615	0.046 0.658	1	
Total Spiritual health	0.227 0.027	-0.059 0.568	-0.121 0.244	-0.233 0.023	0.077 0.458	-0.073 0.479	0.124 0.231	-0.149 0.149	1

Note: Statistical significance was determined by calculating Pearson's correlational analysis.

Discussion

The results of our study showed that high spiritual health is associated with better family functioning. In our study line, the results of a study showed that some components of family functioning and spiritual health in women with BC undergoing treatment were significantly lower than in women who had completed treatment and their non-affected peers[3]. Spiritual health can contribute to better family functioning. A woman who possesses inner peace, forgiveness, and a sense of connection to a larger whole is likely to deal with family conflicts with greater calmness and tolerance. Spiritual health can be a source of patience, mutual understanding, and unconditional love, creating a positive cycle within the family[26].

In this study, the general functioning subscale had the highest FAD score, while the problem-solving subscale had the lowest mean score. Researchers state that the family system affects health-related behaviors in people with cancer[8]. The results of a study showed that problem-solving, communication, and roles subscales of family functioning were significantly lower in women with BC under treatment compared to two other groups of women who stopped treatment and non-afflicted counterparts[3]. In contrast, another study found that a decrease in family resilience among BC survivors can lead to a reduction in their care. Improving family resilience can also improve the resilience of survivors, and thus, enhancing both family and survivor resilience can help to alleviate the primary care burden experienced by caregivers of women BC survivors[27].

Optimal family functioning can guide individuals toward adopting intrinsically motivated prosocial behaviors and higher levels of moral reasoning by influencing and fostering the psychological maturity of its members[28]. The diagnosis of cancer can greatly shock and sadden the family of cancer patients, which can worsen emotional and communication issues among family members. Additionally, women BC survivors may experience problems related to assigned roles within the family. The concept of roles refers to the efficacy of the family in assigning duties and responsibilities to its members and ensuring that they are carried out. These roles can be assigned formally or informally, and may become habitual patterns for family members. This pattern helps to distinguish between necessary and unnecessary functions for the healthy functioning of the family[29]. According to Wittenberg et al, the communication patterns within a family have an impact on the communication patterns that children will adopt in their own families later on. Effective communication extends beyond verbal language and encompasses non-verbal cues such as listening, silence, eye contact, facial expressions, gestures, touching, body posture, and other symbols and codes used to convey and interpret meaning[30]. The findings of these studies were consistent with those of previous research, which indicate that the family functioning of the family is affected by BC. Therefore, interventions to improve the family functioning of women BC survivors should be considered.

In our study, the total spiritual health score of women was moderate. Another study reported that the majority of cancer patients have an average level of spiritual health, with a higher level of religious health compared to existential health[4]. One study reported that the majority of patients had an average level

of spiritual health, which accounted for 37.8% of the sample[31]. Another study has reported that women undergoing treatment for BC scored lower on the religious health component and the overall spiritual health score[3]. Researchers state that cancer patients experience an increase in self-efficacy with improved spiritual health[32]. The likelihood of Muslim American women obtaining BC screenings was found to be influenced by their spiritual attitudes in a study conducted by researchers[18]. Another study found that women BC survivors with lower income but a strong spiritual life and faith in God had a higher likelihood of life satisfaction[33].

Positive and hopeful communication within the family creates a psycho-spiritual environment filled with hope. When family members believe in recovery and a positive future, this attitude is transmitted to the survivor as well. Hope is a key component of spiritual health, empowering the individual to move forward and plan for their new life. Phenwan et al reported that among Thai women with BC, spirituality is primarily centered around their families and children, and those who have strong social support and positive family relationships tend to have better spiritual health. The study also revealed that BC patients with higher levels of spiritual well-being tend to experience a higher quality of life. Nevertheless, healthcare providers often overlook this aspect of care due to the absence of established practice guidelines[34]. Healthcare providers can assist women with BC in managing their emotions by providing coping strategies and identifying ways to manage this stressful situation. They can also encourage patients to seek emotional support and spiritual comfort[35].

According to the findings of our study, with increasing age, women's total spiritual health also showed a significant increase. Conversely, poorer performance in the family roles domain was associated with a significant decrease in overall spiritual health. Furthermore, some dimensions of family functioning were significantly correlated with each other.

One research reported a significant correlation between anxiety levels in BC patients and the dimensions of religious and existential health[36]. Another study found a significant negative correlation between family functioning and caregiver burden[37]. In contrast to our study, the results of another study indicated that there is no significant relationship between spiritual health and social adjustment[24]. As a result, health authorities need to pay special attention to this matter, which can be addressed by offering spiritual health education classes to these patients. The researchers reported that the treatment positively influenced global health status, physical, role, and social functioning, and body image, while also reducing fatigue, nausea and vomiting, shortness of breath, constipation, financial difficulties, and sexual dysfunction. They recommended adopting a healthy lifestyle, including the Mediterranean diet and regular exercise, to enhance quality of life[38]. The breast is often seen as a symbol of femininity, and its removal can cause many women to fear physical disfigurement, loss of beauty, and even death. Those affected by this cancer face a wide range of physical, cognitive, emotional, and social challenges due to medical treatments, including anxiety, fear, fatigue, pain, depression, and a decline in overall health. The impact of spirituality on human beings is significant, and spiritual crises can negatively affect their physical and mental health. Spirituality, religious beliefs, and practices help cancer patients cope with their situation by finding meaning in life. Enhancing the spiritual health of women BC survivors should be a top priority for healthcare and social workers, and interventions to improve their spiritual health should be implemented in the future.

The breast is viewed as a representation of femininity, and the removal of this body part can result in many women feeling afraid of physical disfigurement, loss of beauty, and the fear of death. Individuals affected by this type of cancer endure numerous physical, cognitive, emotional, and social consequences due to medical treatments, including feelings of anxiety, fear, exhaustion, discomfort, depression, and a decline in overall health. The impact of spirituality on human beings is significant, and spiritual crises can negatively affect their physical and mental health. Spirituality, religious beliefs, and practices help cancer patients cope with their situation by finding meaning in life. Enhancing the spiritual health of BC patients should be a top priority for healthcare and social workers, and interventions to improve their spiritual health should be implemented in the future.

Limitations and strengths: The study had limitations, including a lack of background information on family functioning and cultural differences that can be effective in the functioning of the family and the spiritual health of these women. Another limitation of the present study was that the samples were selected from only one hospital. Also, the questionnaires were self-reported, so the participants may not answer the questions accurately for reasons such as being in a hurry or having an inappropriate mental state. Despite these limitations, the study found that BC survivors had moderate spiritual health and good family functioning. It is recommended that future studies be conducted at the provincial level and with a larger sample size.

Conclusion: In conclusion, based on the results of the study showing favorable levels of family functioning and spiritual health in women BC survivors, it is recommended to implement family therapy and spiritual health therapy approaches to address any potential family issues and mental health concerns among this population.

Ethical Considerations

This study (ID: IR.MUBABOL HIR. REC. 1400. 055) was approved by the Ethics Committee of Babol University of Medical Sciences. Participants were required to sign a written informed consent form before taking part in the study, in accordance with the guidelines of the Declaration of Helsinki.

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Conflict of Interest

None declared.

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