

Predictors of perceived unsupportive behaviours by spouses in women with breast cancer

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Summary Background. Unsupportive responses from relatives and spouses play a significant role in the psychological adjustment of breast cancer patients and their spouses, about whom little is known about them and their unsupportive responses predictors.

Objectives. The aim of this study was to determine the predictors of perceived spouse unsupportive behaviours in women with breast cancer and their spouses.

Material and methods. This is a cross-sectional study, in which 220 couples, including women with breast cancer and their spouses, participated in random samples in chemotherapy and cancer hospitals in Iran in 2020. In the present study, data was collected using a demographic checklist and the Unsupportive Partner Behaviour scale. The Kolmogorov-Smirnov test, ANOVA, independent *t*-Test, Hochberg post-hoc test and Chi-square test were used for group comparison. Univariate and multivariate linear regression methods were also used to assess the effect size.

Results. Predictors of perceived unsupportive behaviours in women were: number of children ($p = 0.047$), life with relatives ($p = 0.051$), residence in suburbs ($p = 0.006$), marital status ($p = 0.001$), education and occupation of the spouse ($p = 0.026$), going to the hospital alone ($p = 0.001$), type of treatment received ($p = 0.242$), duration of diagnosis ($p = 0.018$) and type of residence ($p = 0.051$). Moreover, predictors of perceived unsupportive behaviours in men included: education and occupation of men ($p = 0.035$) and women ($p = 0.050$), type of treatment received ($p = 0.050$), employment of women ($p = 0.030$) and men ($p = 0.009$), residence in suburbs ($p = 0.014$), marital status ($p = 0.019$) and going to the hospital alone ($p = 0.006$).

Conclusions. The variety of socio-economic, demographic and therapeutic factors were shown to be predictors of perceived unsupportive behaviours by spouses with breast cancer that can be modified by healthcare professionals in order to increase a couple's mutual support.

Key words: breast neoplasms, spouses, women.

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Background

Breast cancer is one of the most common and distressing health problems affecting women worldwide [1], accounting for approximately 25.2% of newly diagnosed cancers and 30% of cancers in women [2]. It is the second and third leading cause of death in developed and less developed countries, respectively [3]. About 41,000 women die from breast cancer each year [4]. According to the World Health Organization, at least 3.2 million women will be diagnosed with breast cancer by 2050, while according to current statistics, 1 in 8 women (12.5%) is at risk of developing breast cancer [5].

One of the main reasons for the increasing mortality rate of breast cancer is the low rate of screening, which results in delayed diagnosis [6]. Some common cancers such as breast

cancer, in the case of early detection and treatment, have a high treatment rate [7]. Having an annual mammography and clinical breast exams are the most important steps to decrease the suffering and death from breast cancer among patients 40 years of age and older. In order to control the disease, persistent and increased attempts are necessary to offer high-quality screening, diagnosis and treatment to all women [8]. In Iran, however, due to the lack of comprehensive screening programmes to detect common cancers, advanced cases of cancer are common [9].

Over the past few decades, our understanding of the consequences of cancer has shifted, recognising not just the physical effects but also the psychological and social effects. Various supportive intervention strategies have been developed to alleviate the complications of cancer patients as the disease progresses. Cancer affects not only patients but also their immediate rela-



tives, which can cause various interactions between a patient and their spouse. The resulting tension affects both the woman and her spouse and can lead to a loss of emotional, social and economic support for the patient [10].

The best source of support for a cancer patient is the spouse [11]. However, support by a spouse can be challenging due to their anxiety levels or the impact breast cancer has on their relationship [12]. A supportive spouse can help the patient adjust psychologically to their illness. However, sub-optimal support can lead to dissatisfaction, anxiety and depression [13, 14]. Perceived unsupportive behaviours are extremely challenging, as they are strongly linked to anxiety in cancer patients [15]. Previous studies have shown that the experience of women and men who do not support each other indicates greater avoidance behaviour in breast cancer patients and their spouses, which has been associated with increased levels of anxiety in both [16].

Unsupportive behaviour is defined as overtly critical or explicit avoidance behaviour [17]. Women's expectations of a spouse includes emotional and practical support. This includes support with practical family work (including childcare and housework) and social roles including emotional and work interactions in society. Persistent avoidance behaviour has a negative effect on the psychological adjustment of women to breast cancer [18, 19]. The negative influence of the spouse's avoidance behaviours on the patient's psychological adjustment is greater than the positive effects of supportive behaviours [18]. However, patients are less afraid when they realise that their spouse is empathetic and also struggles [20].

According to Shiozaki et al., problem avoidance behaviour is defined as trying to hide worries and fears, avoiding illness-related problems and being sensitive to areas that have changed as a result of surgery. These authors found that avoidance behaviours had large and far-reaching effects on the mental health of women and spouses. Couple-centered interventions can be improved by focusing on reducing problem avoidance behaviours in both [19].

Marital satisfaction is associated with higher levels of mutual support, interdependence and the fulfilment of supportive needs [21]. In contrast, spouses from dissatisfied marriages are not dependent on each other as the primary source of support and are more interested in using other sources of support outside of marriage [22]. In addition, couples in a dysfunctional marriage can perceive each other's behaviour negatively. Women with recently diagnosed cancer who were dissatisfied with their marital relationships were more likely to experience a separation or divorce during the follow-up at 8 years than women who were satisfied with their life in the first 3 months after diagnosis [19].

Identifying and addressing avoidance behaviours is challenging because it can be latent. The spouse of a patient with breast cancer may prefer to avoid stress than to protect and support their spouse's mental health [21]. However, if patients found their spouse's behaviour supportive, their stress levels could be reduced [18]. The unsupportive behaviour of men is strongly related to the behaviour of their spouse, the severity of the illness, the symptoms experienced and the maladjustment, which also have an adverse effect on the patient [12]. Studies have shown that a spouse's perception of unsupportive behaviour predicts adverse effects in breast cancer patients, which is associated with increased levels of stress [14, 22]. The negative effects of a spouse's disapproving behaviour on a patient's mental balance are much greater than the positive effects of their beneficial behaviour [4].

Improving and promoting health behaviours is one of the primary goals of cancer treatment. Women play an important role in maintaining families and society. Improving the lives of women with breast cancer not only improves their survival but also leads to improved lifestyles and greater family cohesion [23]. Studies suggest that researchers should focus on the effects of unsupportive behaviour rather than just focusing on positive and social support when examining the psychological

consequences of cancer in people with cancer. A spouse's unsupportive behaviour has a greater impact on stress and mental health than supportive behaviour. Negative support from the spouse can increase a patient's negative feelings, such as fear or avoidance behaviour [24]. Finally, despite the various studies of marital satisfaction, changes in sexual relationships and intimacy after cancer treatment, the effects of cancer on the family, the spousal support given to women with breast cancer, unsupportive behaviour of a spouse to women with breast cancer and its description and predictors is little known [25]. The aim of this study was to determine the predictors of perceived unsupportive behaviour by spouses in women with breast cancer.

Objectives

The aim of this study was to determine the predictors of perceived unsupportive behaviours by a spouse in women with breast cancer.

Material and methods

Sources of data and study design

The present cross-sectional study was carried out in Iran (Tabriz) in 2020, in which 440 people over 27 years of age took part. In this study, based on the findings of Sharon Manne et al. [15] considering the partner unsupportive responses (16.95 ± 34.34) and confidence of 95%, the required minimum sample size was 171 participants, taking into account 20% of the sample attrition, the final sample size was 220 couples.

Sampling

Inclusion criteria were married women with breast cancer and their spouses. Participants with psychiatric disorders in their medical records were excluded. After explaining the purpose of the study, samples from two oncology centres that met the inclusion criteria were selected. The data was collected by the researcher, and the random sampling method was used. After receiving confirmation from the Tabriz University of Medical Sciences and receiving a list of women with breast cancer or recurrent cancer in treatment and their spouses, the samples were randomly selected so that the names were entered on the <https://www.randomizer.org/> website, and the number of breast cancer patients referred was randomly determined. If the selected participants did not accept participation in the study or were absent at the time the researchers were present, other participants were selected through the software.

The researcher contacted the selected participants and made an appointment to meet with them and complete the questionnaire. The response rate was 88%, and the questionnaires were obtained separately from the patient and her spouse at different locations. Incomplete questionnaires were excluded from the study. Written consent to participate in the study was obtained from 220 eligible couples to ensure the confidentiality of their information and to provide them the right to terminate the study at any time.

Data collection tools

Checklist of socio-demographic and disease-related characteristics (gender, age, level of education, place of residence, occupation, having a companion, marital status, residence status, duration of the marriage, stage of the disease, type of surgery, current treatment, duration of diagnosis).

The Unsupportive Partner Behaviour scale developed by Manne & Schnoll in 2001 [32], which consisted of 13 items on critical and avoidance responses by the couples with regard

to breast cancer and their spouses. The items were rated on a 4-point scale (1 = never responded this way, 4 = often responded this way). Scores ranged from 13 to 52. In this study, the internal stability for the patient and spouse was 0.91. The content and face validity of the Partner Unsupportive Behaviour scale was qualitatively evaluated and confirmed by 15 nursing education specialists and 10 oncologists after translation-re-translation was implemented. The reliability of this scale was determined through test–retest with a two-week interval on 30 subjects, and Cronbach’s alpha coefficient (internal consistency) and the intraclass coefficient (ICC = Intraclass Correlation Coefficient) were 0.96 (95% CI: 0.91–0.98) and 0.94 (95% CI: 0.89–0.96) for the perceived unsupportive behaviour of women and men, respectively.

SPSS version 16.0 (SPSS Inc. 16.0, Chicago, IL) was used for data analysis. We described qualitative variables using percentages, and mean and standard deviation was used to describe quantitative variables. The Kolmogorov-Smirnov test was used along with the skewness and kurtosis indices to assess variable normality. ANOVA (Hochberg post hoc test), independent *t*-Test, Pearson’s correlation coefficient and Chi-square test were used for group comparison. Univariate and multiple linear regression methods were also used to assess the effect size. A significance level was considered as 0.05.

Ethical approval

The Regional Ethics Committee at Tabriz University of Medical Sciences approved the present study (IR.TBZMED.REC.1398.991).

Results

Demographics information

The findings of the present study, with 220 couples, showed that the ages of the female and male participants were 45.65 ± 9.802 and 51.21 ± 10.703 years. 113 participants (51.4%) had 1 or 2 children, and 211 participants (95.9%) lived with their spouse. The majority of participants felt that their income (61.4%, 135 participants) was insufficient to receive treatment. 72 women (32.7%) and 61 men (27.7%) had completed elementary school. Most of the female participants (204 participants, 92.7%) were housewives, and 167 male participants (75.9%) were self-employed. 35.5% of the participants were married between 20 and 30 years. The most common type of surgery performed on the patients was mastectomy (119 individuals, 54.1%), and the highest percentage of the patients (125 individuals, 56.8%) had received chemotherapy (Table 1).

Table 1. Disease characters for women with breast cancer (n = 440)

Variables	Categories	Female (n = 220) n (%)
Type of surgery	preserve the breast	90 (40.9)
	mastectomy	119 (54.1)
	no surgery	11 (5.0)
Current treatment	chemotherapy	125 (56.8)
	radiotherapy	31 (14.1)
	both	8 (3.6)
	none	16 (7.3)
	control	39 (17.7)
Duration of diagnosis (Months)	< 6	55 (25.0)
	6–12	54 (24.5)
	12–24	48 (21.8)
	> 24	63 (28.6)
Disease stage	0	7 (3.2)
	1	27 (12.3)
	2	60 (27.3)
	3	91 (41.4)
	4	35 (15.15)

Perceived unsupportive behaviour in women

According to the results of the univariate regression test, participants with 3–4 children scored an average of 3.68 points more than those without children (*p* = 0.047) in unsupportive behaviour. Participants with 1–2 children scored an average of 3.79 points more than participants without children (*p* = 0.025). In addition, those who lived in the suburbs scored 8.05 points higher than those who lived in rural areas (*p* = 0.006). Divorced participants scored an average of 25.59 points more than participants who lived with their spouses (*p* = 0.001). Men with primary education averaged 4.06 points (*p* = 0.026) and illiterates 4.43 points (*p* = 0.026), with secondary education having 4.89 points more than men with higher education (*p* = 0.013).

In addition, participants with no companion mean score was 8.36 higher than participants with their spouse companionship (*p* = 0.001). Patients who received chemotherapy and radiation therapy scored an average of 9 (*p* = 0.242) and 9 (*p* = 0.417) higher than those who received no treatment. In addition, participants who lived with the disease for more than 24 months mean score was 3.69 more than patients who had lived less than 6 months with disease (*p* = 0.018), and participants who lived with relatives scored an average of 13.7 points more than the patients lived in the governmental house (*p* = 0.051).

Table 2. Relationship between perceived unsupportive behaviours of women and demographics

Variables	Categories	Univariate regression		Multiple regression	
		β (95% CI)	<i>p</i>	β (95% CI)	<i>p</i>
Women’s age in years	< 40	Reference category		Reference category	
	40–60	0.58 (-3.22–2.05)	0.660	0.06 (2.68– -2.82)	0.961
	> 60	-0.15 (-4.29–3.98)	0/940	-0.91 (4.05– -5.88)	0.716
Men’s age in years	< 40	Reference category		Reference category	
	40–60	-0.79 (-4.40–2.82)	0.667	3.02 (6.63– -0.59)	0.101
	> 60	-0.44 (-4.54–3.66)	0.832	2.95 (7.57– -1.65)	0.207
Number of children	0	Reference category		Reference category	
	1–2	3.79 (0.47–7.10)	0.025	0.02 (2.91– -2.86)	0.985
	3–4	3.68 (0.46–7.31)	0.047	-0.04 (4.44– -5.30)	0.862
	> 5	2.43 (-2.63–7.50)	0.344	-0.81 (2.39– -4.01)	0.618
Location	city	1.57 (-1.03–4.18)	0.235	0.57 (5.25– -3.94)	0.606
	rural	Reference category		Reference category	
	suburbs	8.05 (2.39–13.71)	0.006	0.65 (2.22–15.02)	0.779

Table 2. Relationship between perceived unsupportive behaviours of women and demographics

Variables	Categories	Univariate regression		Multiple regression	
		β (95% CI)	<i>p</i>	β (95% CI)	<i>p</i>
Marital status	married	Reference category		Reference category	
	single	3.16 (-2.97–9.30)	0.310	1.42 (6.66– -3.81)	0.591
	divorced	25.95 (14.24–36.95)	> 0.001	3.69 (15.02– -7.63)	0.521
Type of residential house	personal	2.93 (-63.14–76.08)	0.621	1.10 (10.26– -8.05)	0.812
	on rent	3.27 (-8.57–15.11)	0.587	0.34 (9.75–09.06)	0.943
	governmental	Reference category		Reference category	
	relatives' house	13.7 (-0.05–27.45)	0.051	2.52 (14.18– -9.12)	0.669
Sufficiency of monthly income	fully	Reference category		-3.60 (3.22–010.43)	0.300
	relatively	2.92 (5.59–11.44)	0.499	0.05 (1.99– -1.88)	0.956
	not at all	4.33 (-4.10–12.77)	0.313	Reference category	
Women's education	illiterate	1.33 (-2.83–4.49)	0.529	1.60 (7.26– -4.04)	0.575
	primary	2.66 (-1.14–6.48)	0.170	-0.22 (4.88– -5.33)	0.931
	secondary	3.88 (-0.98–7.55)	0.131	0.01 (4.90– -4.87)	0.995
	high school	1.86 (-2.28–6.01)	0.376	1.14 (5.61– -3.33)	0.616
	higher	Reference category		Reference category	
Men's education	illiterate	4.34 (-0.53–8.34)	0.026	-2.14 (3.17– -7.45)	0.428
	primary	4.06 (-0.49–7.62)	0.026	-0.33 (4.42– -5.10)	0.889
	secondary	4.89 (-1.05–8.73)	0.013	0.98 (5.47– -3.49)	0.663
	high school	3.60 (-0.17–7.38)	0.062	0.53 (3.38– -4.45)	0.787
	higher	Reference category		Reference category	
Women's occupation	unemployed	Reference category		Reference category	
	employed	0.73 (-3.86–5.34)	0.752	-3.17 (1.28– -7.62)	0.162
Men's occupation	employee	-3.24 (0.90– -7.39)	0.125	-3.75 (1.44– -8.94)	0.156
	unemployed	Reference category		Reference category	
	self-employed	0.36 (3.83– -3.10)	0.083	-0.38 (3.81– -4.58)	0.858
	retired	-1.76 (2.38– -5.91)	0.402	-1.92 (3.28– -7.13)	0.468
Companion	spouse	Reference category		Reference category	
	father	-4.15 (-12.18–3.87)	0.309	-3.00 (3.43– -9.44)	0.358
	mother	1.19 (-6.01–8.41)	0.744	3.91 (9.65– -1.81)	0.179
	child	2.07 (-1.41–5.56)	0.242	0.58 (3.83– -2.65)	0.723
	relatives	0.02 (-2.82–2.87)	0.986	-0.78 (1.45– -3.03)	0.490
	no companion	8.36 (5.12–11.60)	> 0.001	1.23 (3.92– -1.46)	0.367
Duration of marriage (year)	< 10	Reference category		Reference category	
	10–20	2.67 (-1.41–6.76)	0.198	1.53 (-2.94–6.01)	0.500
	20–30	0.44 (-2.64–5.26)	0.514	-0.40 (-5.48–4.46)	0.847
	> 30	0.44 (-3.21–4.98)	0.672	-1.50 (-7.71–4.70)	0.633
Type of surgery	preserve the breast	0.92 (-4.39–6.25)	0.731	-1.72 (-7.83–4.37)	0.576
	mastectomy	2.17 (-3.08–7.42)	0.416	-0.38 (-6.28–5.51)	0.989
	no surgery	Reference category		Reference category	
Current treatment	chemotherapy	2.59 (-1.76–6.96)	0.242	-0.33 (-5.08–4.40)	0.888
	radiotherapy	2.08 (-2.97–7.15)	0.417	0.85 (-4.64–6.36)	0.759
	both	9.00 (1.87–16.12)	0.014	6.41 (-1.12–13.95)	0.095
	none	Reference category		Reference category	
	control	4.94 (0.05–9.82)	0.047	3.39 (-8.76–1.97)	0.213
Duration of diagnosis (months)	< 6	Reference category		Reference category	
	6–12	1.22 (-1.94–4.38)	0.448	-0.02 (-3.53–3.49)	0.990
	12–24	2.07 (-1.19–5.33)	0.212	0.70 (-2.78–4.18)	0.691
	> 24	3.69 (0.64–6.74)	0.018	1.85 (-1.49–5.20)	0.276
Disease stage	0	Reference category		Reference category	
	1	3.30 (-3.79–10.41)	0.360	1.21 (-1.69–9.32)	0.860
	2	3.91 (2.77–10.60)	0.250	1.82 (-0.68–9.51)	0.750
	3	3.36 (-3.20–9.93)	0.314	1.27 (-1.11–8.84)	0.814
	4	3.68 (-3.24–10.61)	0.296	1.59 (-1.15–9.52)	0.796

Other variables did not significantly affect the women perceived partner support. According to the results of the multiple regression test, after controls for other variables in the model, the R2 and adjusted R2 of the multiple regression model for perceived

unsupportive female behaviour were 0.36 and 0.31, respectively. Therefore, the 36% of changes in unsupportive behaviour in men can be explained and predicted using the variables in the multiple regression model (Table 2).

Perceived unsupportive behaviours by men

According to the results of the univariate regression test, men with secondary education scored an average of 1.03 points more than men with higher education ($p = 0.035$), and women with higher education scored an average of 2.80 points more than women with higher education ($p = 0.050$). Employed women scored 3.42 points more than unemployed women ($p = 0.030$), and employed men scored 8.17 points ($p = 0.009$) and retirees 8.12 points ($p = 0.009$) lower than unemployed men ($p = 0.009$). Participants who received chemotherapy scored 2.92 points ($p = 0.050$), women who received chemotherapy and radiation therapy scored an average of 5.93 points ($p = 0.015$) and those who received control sessions scored 5.66 points higher than those who received no treatments ($p = 0.001$). Other variables did not have a significant impact on the average male score from the female perspective.

According to the results of the multiple regression test, participants who lived in the suburbs, after controlling for other variables in the model, scored an average of 7.92 points higher than participants who lived in the countryside ($p = 0.014$), and participants with consolidation therapy mean score was 4.02 higher than those who received no treatment ($p = 0.045$), divorced participants scored an average of 18.66 points more than participants who lived with their spouses ($p = 0.019$), and the participants who didn't companion their spouse mean score was 5.16 more than those who companioned their spouse going to hospital and treatment centers ($p = 0.006$). In addition, the R^2 and adjusted R^2 of the multiple regression model for perceived unsupportive behaviour in men were 0.25 and 0.22, respectively. Therefore, 25% of changes in non-supportive behaviour in women can be explained and predicted using the variables in the multiple regression model (Table 3).

The unsupportive behaviour perceived by women and men was significantly different. When examining the relationship

Table 3. Relationship between perceived unsupportive behaviours by men and demographics

Variables	Categories	Univariate regression		Multiple regression	
		β (95% CI)	p	β (95% CI)	p
Women's age in years	< 40	Reference category		Reference category	
	40–60	0.74 (-1.04–2.53)	0.413	-0.06 (3.71– -3.84)	0.974
	> 60	0.32 (-2.48–3.13)	0.820	-1.53 (5.28– -8.35)	0.658
Men's age in years	< 40	Reference category		Reference category	
	40–60	0.86 (-1.59–3.31)	0.490	0.54 (5.50– -4.41)	0.829
	> 60	0.97 (-1.81–3.76)	0.490	1.90 (8.23– -4.43)	0.555
Number of children	0	-1.02 (-3.30–1.24)	0.347	Reference category	
	1–2	Reference category		2.30 (6.27– -1.65)	0.252
	3–4	-1.33 (-4.37–1.69)	0.385	2.66 (7.06– -1.74)	0.234
	> 5	-0.26 (-2.08–1.55)	0.776	1.34 (8.03– -5.34)	0.692
Location	city	0.43 (-1.36–2.24)	0.663	0.81 (3.84– -2.20)	0.594
	rural	Reference category		Reference category	
	suburbs	0.00 (-3.91–3.91)	0.998	7.92 (14.24–1.61)	0.014
Marital status	married	Reference category		Reference category	
	single	1.83 (-2.50–6.16)	0.406	0.39 (-3.61–6.76)	0.914
	divorced	5.90 (-2.11–3.93)	0.148	18.66 (-7.60–15.06)	0.019
Type of residential house	personal	3.25 (-4.80–11.13)	0.427	3.00 (15.58– -9.58)	0.637
	on rent	2.89 (-5.26–11.05)	0.485	2.40 (15.31– -10.51)	0.714
	governmental	Reference category		Reference category	
	relatives' house	3.60 (-3.17–15.77)	0.192	3.81 (19.80– -12.18)	0.639
Sufficiency of monthly income	fully	Reference category		1.36 (10.74– -8.00)	0.774
	relatively	2.30 (-3.44–44.3)	0.424	-0.14 (2.51– -2.81)	0.914
	not at all	3.00 (-2.74–8.74)	0.304	Reference category	
Women's education	illiterate	2.10 (-0.71–4.92)	0.142	-2.68 (5.07– -10.45)	0.495
	primary	1.59 (-0.99–4.18)	0.226	-1.11 (5.89– -8.12)	0.755
	secondary	1.63 (-1.26–4.52)	0.268	0.18 (6.90– -6.53)	0.956
	high school	2.80 (-0.00–5.61)	0.050	-0.50 (5.64– -6.64)	0.872
	higher	Reference category		Reference category	
Men's education	illiterate	1.34 (-1.32–4.00)	0.322	6.11 (13.41– -1.18)	0.100
	primary	1.74 (-0.68–4.18)	0.158	4.56 (11.09– -1.97)	0.170
	secondary	2.82 (0.20–5.44)	0.035	4.81 (10.96– -1.33)	0.124
	high school	2.48 (-0.10–5.06)	0.060	2.33 (7.71– -3.04)	0.392
	higher	Reference category		Reference category	
Women's occupation	unemployed	Reference category		Reference category	
	employed	-3.42 (-3.86–5.34)	0.030	1.57 (7.68– -4.53)	0.611

Table 3. Relationship between perceived unsupportive behaviours by men and demographics

Variables	Categories	Univariate regression		Multiple regression	
		β (95% CI)	<i>p</i>	β (95% CI)	<i>p</i>
Men's occupation	employee	-8.17 (-2.10– -14.24)	0.009	-4.17 (2.96– -11.30)	0.250
	unemployed	Reference category		Reference category	
	self-employed	-3.92 (1.15– -9.00)	0.129	-1.57 (4.18– -7.34)	0.590
	retired	-8.12 (-2.06– -14.19)	0.009	-4.58 (2.56– -11.74)	0.207
Companion	spouse	Reference category		Reference category	
	father	-4.71 (-10.43– -1.00)	0.106	-4.09 (4.74– -12.93)	0.362
	mother	3.73 (-1.40– 8.87)	0.154	0.27 (8.14– -7.59)	0.946
	child	0.57 (-1.90– 3.05)	0.649	-0.62 (3.81– -5.07)	0.780
	relatives	-0.25 (-2.28– 1.87)	0.808	-0.32 (2.75– -3.40)	0.834
	no companion	1.66 (-0.64– 3.97)	0.156	5.16 (8.85– 1.46)	0.006
Duration of marriage (years)	< 10	Reference category		Reference category	
	10–20	0.54 (-2.42– 3.31)	0.702	0.23 (-3.03– 3.51)	0.886
	20–30	-0.18 (-2.88– 2.52)	0.892	-1.15 (-4.86– 2.55)	0.540
	> 30	0.06 (-2.72– 2.86)	0.961	-0.33 (-4.87– 4.20)	0.884
Type of surgery	preserve breast	-0.44 (-4.07– 3.18)	0.892	-0.5 (-4.96– 3.95)	0.822
	mastectomy	-0.20 (-3.87– 3.37)	0.912	-0.55 (-4.87– 3.95)	0.799
	no surgery	Reference category		Reference category	
Current treatment	chemotherapy	2.92 (0– 5.85)	0.050	1.69 (-1.77– 5.16)	0.335
	radiotherapy	2.65 (-0.73– 6.05)	0.124	1.56 (-2.45– 5.59)	0.443
	both	5.93 (1.16– 10.71)	0.015	5.17 (-0.34– 10.68)	0.066
	none	Reference category		Reference category	
	control	5.66 (2.39– 8.93)	0.001	4.02 (0.09– 7.94)	0.045
Duration of diagnosis (months)	< 6	Reference category		Reference category	
	6–12	23.0 (-1.92– 2.39)	0.829	-0.22 (-2.79– 2.34)	0.865
	12–24	97.1 (-0.25– 4.20)	0.082	1.24 (-1.29– 3.79)	0.335
	> 24	33.1 (-0.74– 3.42)	0.207	0.21 (-2.23– 2.66)	0.863
Disease stage	0	Reference category		Reference category	
	1	3.59 (-1.15– 8.32)	0.137	1.39 (-3.05– 8.32)	0.638
	2	1.31 (-3.155– 5.87)	0.562	0.11 (-1.14– 5.87)	0.963
	3	0.92 (-3.46– 5.31)	0.679	-0.72 (-1.86– 5.31)	0.970
	4	3.31 (-1.32– 7.95)	0.160	1.11 (-3.36– 7.95)	0.563

between unsupportive behaviour in men and women, it can be seen that there is a significant moderate direct relationship between unsupportive behaviour in men and women. In other words, as the mean unsupportive behaviour of men increases, so does the mean unsupportive behaviour of women (Table 4).

Table 4. Comparison of the perceived unsupportive behaviours of men and women

Perceived unsupportive behaviour (M \pm SD)	* <i>t</i> (<i>p</i>)	** <i>r</i> (<i>p</i>)
Women	2.95 (0.003)	0.55 (< 0.001)
Men		

*Independent *t*-Test, **Pearson's correlation coefficient.

Discussion

Previous studies have shown that perceived unsupportive responses from close relatives play a significant role in a patient's psychological adjustment to cancer, as well as in individual adjustment to other challenging life events. The average level of unsupportive responses from family and friends varies among patients. Most patients experience unsupportive re-

sponses that begin shortly after diagnosis [23]. Few studies suggest that other factors such as individual/social characteristics and disease status may influence the incidence of unsupportive behaviour [4]. The aim of this study was to find the factors that predict the occurrence of unsupportive behaviours in Iranian couples with breast cancer.

In the present study, it was found that the number of children is a predictor of the unsupportive behaviour perceived by women. In addition, age and gender were not identified as predictors. The results of an earlier study by Chae et al. show that single or childless patients have a greater need for support [24]. However, the present study found that as the number of children increases, so too does the unsupportive behaviour perceived by women. This outcome may be related to the increased cost of living due to higher numbers of family members and the doubling of treatment costs, all of which lead to more unsupportive behaviours.

Another factor is place of residence. In our study, living in the suburbs and living with relatives is one of the predictors of unsupportive behaviour perceived by women. However, somewhat unexpectedly, studies have found that rural and suburban women are less likely to report unmet needs for support 3 to 5 years after diagnosis. While women in rural areas have more limited and much more expensive access to health services than

women in large cities, their expectations for support appear to have decreased [25, 26]. Apparently, the differences may be due to differences in the study population.

The present study shows that divorce increases women's perceptions of the unsupportive behaviour of their spouses. This finding is similar to previous studies that report that colon cancer survivors living with spouses have a better quality of life [27]. Another study of the impact of marital status on cancer survival found that married patients with gastric cancer were more likely to survive for the first 5 years compared to unmarried, separated or divorced patients. In this study, the unmarried mortality rate was higher than that for married patients. In addition, the rate of cancer treatments, such as radiation therapy and chemotherapy, was higher in married people. Manne et al. also found that, on average, individual patients were treated for a longer period of time and that breast cancer survival rates increased when a partner served as the patient's source of emotional support [23].

Previous Iranian studies have reported that women are more stressed after being diagnosed with cancer, and most of them are at risk of marital problems and even divorce [28]. One interesting finding is that cancer diagnosis does not predict the need for support and has shown that cancer patients' needs for support may decrease over time [29].

Spouses could help cancer patients feel more comfortable by talking to each other, exchanging opinions and giving them the information they received during treatment, while individual patients have more unmet needs because they do not have that support. Separated or divorced participants exhibited less supportive behaviours, which is consistent with the study by Chae et al., who found that unmarried individuals may have more unmet needs in education, psychology and hospital services [24].

Other factors predicting unsupportive behaviour from the perspective of women were low levels of education in men. From the point of view of men, the factors were the low level of education of men and women, the employment of the woman and the fact that the man was an employee and retired. Previous Iranian studies have shown that cancer patients have high information needs [30, 31], and this need is higher for men [31]. Women with cancer were less willing to seek information. In addition, healthcare providers and family members are not interested in providing information to women, suggesting that women should be helped with their information needs about their disease and treatments. In the current study, the lower educational level of women was identified as a predictor of unsupportive behaviour, which is in line with other studies in Iran [32, 33]. The results of a similar study from Mexico found that marital status and education were significantly associated with the women with breast cancer perceived supportive behaviour [34].

For cancer survivors, employment creates emotional stability through building interpersonal relationships and a good social life, as well as the economic benefits of income. In fact, most cancer survivors tend to return to work when they are fully recovered and ready [35]. In this regard, the results of one study show that the unemployed group had higher levels of unmet needs in all areas, except from health workers and religious support teams. These results align with the results of other studies [36]. In contrast to other studies, in our study, the employment of women and men was given as a predictor of unsupportive behaviour by women and men. However, the differences may be due to differences in race and the cultural aspects of societies. Studies show that differences in cultures and clinical care centres influence the support needs of cancer patients. Therefore, it is important to consider these differences before an ideal care plan can be developed and implemented. The type and extent of supportive care needs of cancer patients are influenced by their cultures [33, 37].

In the present study, a 24-month diagnosis duration was a predictor of perceived unsupportive behaviour in women. In one study, avoidance behaviour was higher in men who had pre-

viously had cancer themselves, when their spouse had a recurrence of cancer or when the spouse received cancer treatment. These were not related to the couple's age, length of marriage or time to diagnosis. In addition, these behaviours were more common in mastectomy patients. Individuals whose spouses displayed unsupportive behaviour felt that they had a more difficult marital relationship. In addition, the incidence of unsupportive behaviour was higher among the spouses who were concerned about the impact of their words and behaviours on the woman and who felt more distressed and limited in what they could do for their spouse [19]. Most cancer survivors, including those with breast cancer, have a high level of fear of cancer recurrence, which is closely related to unmet needs and quality of life [38, 39]. In this regard, the results of previous studies are in agreement with those of the present study; the longer the time to diagnosis, the more stress and anxiety and the greater the likelihood of perceived unsupportive behaviours.

Other predictors in the present study include chemotherapy, radiation therapy and consolidation therapy. The results of studies on spouse support show that perceived unsupportive behaviour by the spouse is accompanied by stress, particularly regarding consolidation therapies [40]. Women who participated in a study by Shirzadi et al. reported having certain fears, such as fear of chemotherapy and changes in the body that take place after examinations and treatment, fear of pain and fear of death [41]. However, in the present study, it was shown that the unsupportive behaviour of the spouse is stronger in women who receive chemotherapy, radiation therapy and consolidation therapy than in women who do not receive any of the above treatments. It should be noted, however, that the reviewed study was based on a portion of the social support questionnaire that related to perceived supportive and unsupportive behaviours of the spouse [40]. Therefore, this result may be acceptable in terms of differences in data collection tools, as well as cultural and contextual differences in the conduct of the study. In addition, in the aforementioned study, it was found that frequent check-ups reduced the fear of the future of the disease in couples, leading to supportive behaviours. However, in our study, the presence of more frequent controls indicated stress and fear of the existence of diseases and their recurrence, which actually led to the appearance of couples showing unsupportive behaviours. Patients who received chemotherapy and radiation therapy had lower quality of life and more health problems, which could affect the quality of life of family members and lead to unsupportive behaviours by the spouse.

In a study by Manne et al., the gender difference showed that female patients reported more avoidance and unsupportive responses compared to their spouses. Women are also predicted to show negative interactions and be more responsive to lack of spousal support, and women perceive their spouses to be less supportive compared to men [42, 43].

As a result, public health professionals and healthcare providers should provide coherent information about the benefits of mammography and the importance of early diagnosis of breast cancer. This may help women overcome their fear of breast cancer and make informed decisions regarding undergoing mammography [41].

Limitations of the study

There were several limitations in this study, including the difficulty of sampling due to the prevalence of COVID-19 and the accuracy of the participants' responses to the self-reported questionnaire.

Conclusions

The variety of socio-economic, demographic and therapeutic factors were found to be predictors of unsupportive behaviour by spouses with breast cancer, including level of education,

employment status, number of children, marital status, place of residence, duration of the diagnosis and companionship. Healthcare providers should particularly consider the modifiable socio-economic, demographic and therapeutic factors to increase a couple's mutual support.

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