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The moderating effect of perceived partner empathy on body image and depression among breast cancer survivors

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Abstract

***Purpose*: The aims of the study were the following: (1) to understand the relationship between women's perceptions of empathy from their partners and their depressive symptoms and body image and (2) to examine the moderating effects of women's perceptions of empathy from their partners on the relationship between body image and depressive symptoms.**

***Methods*: A cross-sectional and correlational design was used, in which a convenience sample of 151 women who completed surgery and the necessary chemotherapy/radiotherapy were recruited from southern Taiwan. A structured questionnaire including the Other Dyadic Perspective-Taking Scale, the Body Image Scale, and the Center for Epidemiologic Studies Depression scale were administered. Hierarchical regression was used to examine the moderating effects of empathy from partners between the women's body image and their level of depressive symptoms.**

***Results*: The results showed significant relationships between empathy from a partner and depressive symptoms ($p < 0.001$). However, there was no significant relationship between empathy from a partner and body image ($p > 0.05$). The moderating effect of empathy from a partner on the relationship between body image and depressive symptoms was also significant ($p < 0.01$).**

***Conclusion*: The more empathy women perceived from partners, the fewer depressive symptoms women reported. Empathy from a partner could moderate the impact of body image changes on depressive symptoms. Women's depressive symptoms, resulting from a change in body image after breast cancer surgery, might be minimized if they perceived greater empathy from their partners.**

Introduction

Breast cancer is the most commonly occurring malignancy in women. According to the World Health Organization, approximately 1.67 million women worldwide are newly diagnosed with breast cancer each year [1]. Breast cancer is also the most common female cancer in Taiwan [2]. Although advances in the early detection and treatment of breast cancer have increased survival rates in women, these gains are often accompanied by increased rates of mental health problems among breast cancer survivors [3]. Studies have shown that 50% of women experience depression or anxiety 1 year after receiving a breast cancer diagnosis, and 25% of women indicate such problems 2 years after receiving a breast cancer diagnosis [3]. One study in Asia found that approximately 26% of Chinese women with breast cancer had severe depression at 18 months post-diagnosis [4]. Compared with other gynecological cancers, women with breast cancer were more vulnerable to psychological distress [5]. As a result, women with breast cancer are at risk for suffering from mental health problems.

Breast cancer treatments, such as modified radical mastectomy and breast-conserving surgery, can detrimentally affect a woman's body image. The association between body image and depression has been revealed in several studies that have found that female breast cancer survivors with poor body image were likely to report more depressive symptoms [6,7]. However, disease or/and treatment factors were found to have limited influences on women's body images a fixed period of time after treatment [3,8]. One study found that some women may experience body image recovery, and others may experience a decline [9]. Understanding the protective factors would be beneficial for decreasing the impact of treatment on changes in body image and related depression.

The experience of body is related to a person's sense of self, which is essential to his sense of psychological self. As a result, body image is defined as a sense of self that reflects the mental representation of one's body and includes one's thoughts, feelings, and attitudes toward or perception of one's physical appearance [10]. The feminine beauty construct of contemporary society also influences how women evaluate their bodies. Thus, women are concerned with how they appear to others, and they compare the ideal standards of the feminine body with their real body experiences, which may threaten their sense of self. This body experience negatively impacts a woman's body image and may result in more depressive symptoms [7]. This causal association was also validated in previous longitudinal studies [11].

Studies have shown that partners provide essential support among women with breast cancer [12,13]. Furthermore, the presence of support that women valued from partners was linked to less psychological distress [13]. Talley and colleagues (2010) examined mediators of the relationship between partner support and depressive symptoms and found that the fulfillment of women's needs by partner support can decrease their reported depressive symptoms [14]. Manne *et al.* (2004) observed and investigated couples' communication to understand the association between couples' communication and women's psychological distress and also revealed that support tied to women's expectations of their partner had a better effect on women's psychological well-being [15]. This effect existed during the treatment phase and lasted to the survivorship phase [12,14,16,17] as well as being present in a different cultural context and across varied ages [16].

Empathy may be a unique component of partner support that women appreciate. In one old, frequently cited study, Pistrang *et al.* (1995) did a survey to understand the relationship between several types of help that women perceived from their partners and psychological health among women first diagnosed with breast cancer within recent years. This study revealed that a high empathy response from a partner during the couple's communication was considered more helpful for women with breast cancer [12]. Ming (2002) used a similar 'perspective-taking' concept to evaluate the perception of women with breast cancer of their partners' action. This study also revealed that perceived greater levels of 'perspective taking' from their husbands could lessen their distress [18]. Another study from Maly *et al.* (2005) found that partners' reactions that included a higher tendency to listen to women's worries or concerns could predict lower depressive symptoms [16]. Empathy is the ability to experience, comprehend, and respond to the inner state of another person [19]. The reaction of listening to women's worries or concerns that Maly *et al.* (2005) measured was similar to the concept of empathy. In sum, findings from the aforementioned studies underscored the behavior of partners' empathy. Women's perceptions of partner empathy allow them to feel understood and valued, which could be important for their mental health [20]. The role of empathy in body image was also implied in previous studies. Women are concerned with their appearances and with how they appear to others in contemporary society [21]. Women with breast cancer are concerned about their partners' reactions to their post-surgery bodies [22]. As a result, the perception of greater empathy from a partner could minimize their concerns about changes to their body image. In sum, women's perceptions of empathy from their partners were potentially related to their body image and depressive symptoms. The quality of a dyadic relationship created a 'buffering' against cancer patients' maladaptive responses to their moods [23]. It is also possible that dyadic interactions, such as empathy from a partner, could constitute moderators between body image and depressive symptoms.

In the Chinese culture, the husband has greater power than the wife in the traditional Chinese family structure [24]. Women usually do not fight for their own rights, and they typically hide their feelings. Their opinions are ignored and not valued even when they try to express them. Additionally, 'Yuan' is a belief in predestination and fatalism in Chinese culture [25]. People believe that the marital relationship is related to 'Yuan' between the couple, in terms of Chinese culture. Getting married, which connects couples to each other, is predestined and unalterable. In terms of this belief, Chinese women habitually tolerate almost anything to maintain their marital relationships, whether they feel attraction or repulsion for their partner [25]. This culture shapes Chinese women's interactions with their partners, making it more difficult to perceive empathy from their partners and making women more vulnerable to mental health problems. As a result, understanding facilitating factors would be beneficial for developing strategies to help Taiwanese women improve their mental health.

This study had the following specific aims: (1) to understand the relationship between women's perceptions of empathy from their partners and their depressive symptoms and body image and (2) to examine the moderating effects of women's perceptions of empathy from their partners on the relationship between body image discomfort and depressive symptoms. A conceptual framework of this study is shown in Figure 1. We suggest that a woman's body image problem could potentially be minimized if her partner provides sufficient empathy, and a woman's perception of greater empathy from her partner could minimize the impact of body image changes on her depressive symptoms.

Methods

Participants and study procedures

Participants included 151 female breast cancer survivors, who were part of a larger sample in a study that examined the causal relationships among objectified body consciousness (the degree to which women think about or

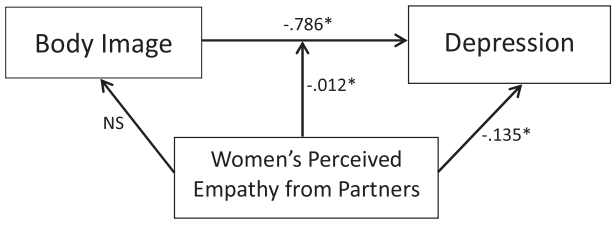

Figure 1. Conceptual framework and unstandardized coefficients between variables

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treat their bodies as objects), body image discomfort and depressive symptoms in breast cancer survivors ($n = 193$) [7]. Because a different study purpose was evaluated herein, only women who had intimate partners were selected. Women from the larger sample who were not involved in an intimate relationship ($n = 42$) (i.e., married or cohabitating) were excluded. Eligible participants were women who were as follows: (1) diagnosed with breast cancer (stage 0 to stage III), (2) completed surgery and the necessary chemotherapy/radiotherapy, and (3) had no recurrence and reported no psychiatric disorders before diagnosis. *Post hoc* power was analyzed in terms of correlations between each independent variable and dependent variable. This revealed a power of over 0.9, which indicated that the sample size was adequate.

The participants were recruited from two hospitals. Women who matched the inclusion criteria were approached in outpatient clinics and were invited to participate in the study. A questionnaire was administered after the participants provided written informed consent. This study was approved by the institutional review boards of two teaching hospitals in southern Taiwan.

Measurements

Self-reported patient demographics and medical data were assessed or recorded from the participants' medical charts. Another confounding factor 'fear of recurrence' was also measured by one item that asked about participants' degree of fear of recurrence by using a 10-point visual analogous scale in which '10' indicated having 'very much' fear of recurrence. Additional portions of the questionnaire consisted of three scales, including the following: (1) a body image scale (BIS), (2) the Other Dyadic Perspective-Taking scale (ODPT), and (3) the Center for Epidemiologic Studies Depression scale (CES-D).

Body image scale

The BIS was designed to capture feelings of discomfort with body image in cancer survivors [26]. The participants were asked to rate the frequency of their perceptions of their appearance over the past week for 10 items, using a scale that ranged from 'very often' to 'never'. Higher BIS scores indicated having more body image discomfort.

The BIS demonstrated high reliability and good clinical validity and has distinguished differences in terms of surgery types and time factors in a previous study [26]. The original version was in English. Standard procedures, including forward and backward translations of the scale into Chinese, were used. The scale developer was then invited to examine the back-translated version. The validity of this scale was supported by factor analysis, in which one factor, body image discomfort, was revealed. This factor could explain 53.24% of the variance [7]. The Cronbach's α for the BIS in this study was 0.90.

Other Dyadic Perspective-Taking scale

Because this study focused on dyadic interactions from the women's perspectives, ODPT was selected to evaluate women's perception about their partners' empathetic behaviors. The ODPT scale consists of 20 items and was developed by Long [27]. It was designed to focus on the cognitive dimension of empathetic sensitivity and to assess how well an empathetic behavior or action described the partner's actions toward the participant. Respondents rated items that captured the efforts made to understand the point of view of partner and a universal understanding and cognizance of a partner. Examples include 'before criticizing me, my partner tries to imagine how I feel' and 'my partner does not sense or realize what I am feeling'. The participants were asked to select the number that best described their partner's actions toward them, using a scale from 0 to 4. Higher ODPT scores indicated that the participants perceived greater empathy from their partners. The original scale was in English, but it was previously used and validated in female Hong Kong Chinese breast cancer survivors [18]. Bilingual professionals were invited to perform forward and backward translations. A native English-speaking professor was then invited to evaluate the differences between the original and back-translated versions. Nine female breast cancer survivors were asked to pilot test the scales for the ease of reading and clarity. The Cronbach's α for the ODPT in this study was 0.94.

Center for Epidemiologic Studies Depression scale

The CES-D scale was designed to measure depressive symptoms in the general population [28]. The instrument has also been found to predict depressive symptoms. The participants were asked to rate 20 items for the frequency of each symptom over the past week, using a four-point scale. The original CES-D scale was in English but has been well validated in the Chinese population. This CES-D Chinese version had good sensitivity and specificity (92.0% and 91.0%, respectively) [30] as well as an acceptable positive predictive value (67.7%) [29]. The Cronbach's α in this study was 0.91.

Statistics

Statistical analyses were performed using SPSS for Windows, version 17.0 (SPSS Inc., Chicago, Illinois, USA). Demographic and medical profiles were analyzed with descriptive statistics. A test of normality was performed and validated by skewness, and a test of kurtosis was performed and a Q–Q plot generated. Then, Pearson's correlation analysis was conducted to examine the relationships among body image, depressive symptoms, partner empathy, and possible confounding variables. Finally, a hierarchical regression was used to examine the moderating effects of

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partner empathy on the participant's body image and her level of depressive symptoms.

Results

Social demographic characteristics of participants

The participants' demographic characteristics are shown in Table 1. The mean age of the participants was 48 years old. Approximately half of the participants reported having senior secondary school educations, including academic high schools or vocational high schools. More than half of the participants were employed outside of the home, and approximately 60% of the participants had monthly incomes between 1000 and 3300 US dollars (Table 1).

The treatment characteristics are shown in Table 2. Seventy-three participants (48.3%) underwent modified radical mastectomy, 46 participants (30.5%) underwent breast conservation surgery, and 32 (21.2%) participants underwent breast reconstruction. Approximately 57% of the participants were diagnosed as having breast cancer stages II and III. Nearly 70% of the participants were treated with chemotherapy and 50% with radiotherapy. The average time frame from breast cancer surgery to the data collection in this study was approximately 19 months (Table 2).

The relationship between women's perceptions of empathy from their partners and their depressive symptoms and body image

A correlation analysis was conducted to examine the relationships among body image, depressive symptoms, and the perception of empathy from partners. The analysis revealed significant relationships between body image and depressive symptoms ($r = 0.602$, $p < 0.001$) and between depressive symptoms and empathy from a partner ($r = -0.36$, $p < 0.001$). However, there was no significant relationship between body image and empathy from a partner ($r = -0.112$, $p > 0.05$) (Table 3).

Table 1. Demographic characteristics of the participants ($n = 151$)

	Total (number (%))
Age (mean (standard deviation [SD]))	48.05 (7.61)
Education	
Compulsory education	33 (21.9)
Senior secondary school	81 (53.6)
College or university	37 (24.5)
Religious	
Yes	115 (76.2)
No	36 (23.8)
Employment status	
No	49 (32.5)
Part-time	17 (11.3)
Full-time	85 (56.3)
Monthly household income (US dollars)	
<1000	35 (23.3)
1001–1800	35 (23.3)
1801–3300	54 (36.0)
>3300	26 (17.3)
Others	1
Other major disease [a]	
Yes	5 (3.3)
No	146 (96.7)

[a]Systemic lupus erythematosus, myasthenia gravis, and cervical carcinoma *in situ* were included.

Table 2. Treatment characteristics of the participants ($n = 151$)

	Total (number (%))
Surgery type	
Mastectomy	73 (48.3)
BCS	46 (30.5)
Breast reconstruction	32 (21.2)
Pathology stage after surgery	
0–I	64 (42.7)
II–III	86 (57.3)
Others	1
Chemotherapy	
Yes	101 (66.9)
No	50 (33.1)
Radiotherapy	
Yes	76 (50.3)
No	75 (49.7)
Combined C/T and R/T	
Both	53 (35.1)
Only C/T	48 (31.8)
Only R/T	23 (15.2)
None	27 (17.9)
Time since breast cancer diagnosis (months) (mean (SD))	19.89 (8.47)
Time since breast cancer surgery (months) (mean (SD))	18.87 (8.63)

BCS, breast conservation surgery; C/T, chemotherapy; R/T, radiotherapy; SD, standard deviation.

The moderating effects of partner empathy

An analysis of the moderating effects of partner empathy on the relationship between body image and depressive symptoms was conducted using hierarchical regression analysis. Prior to the regression analysis, those confounding variables mentioned in previous studies [4,30] that might have influenced depressive symptoms in women with breast cancer were examined. These factors included age, cancer stage, employment status, time since breast cancer surgery, having/not having adjuvant therapy, and the degree of concern about disease recurrence [4,30].

Table 3. Summary of statistics and partial correlations between the variables ($n = 151$)

	Possible range	Sample range	Mean	SD	1	2	3
1. ODPT	0–80	4–80	54.14	18.55	$\alpha = .94$		
2. Body image	0–30	0–30	5.50	5.70	−.112	$\alpha = .90$	
3. Depression	0–60	0–48	10.02	8.29	−.361*	.602*	$\alpha = .91$

ODPT, Other Dyadic Perspective-Taking Scale; SD, standard deviation.
*$p < .01$ (two-tailed).

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Additionally, a significant correlation was found only between concern about disease recurrence and depressive symptoms ($r = 0.27$, $p < 0.01$). This factor (concern about disease recurrence) was then controlled to examine the moderating effects of partner empathy on the women's body images and depressive symptoms.

As an initial step, the confounding variable 'fear of recurrence' was first controlled. Next, the predictive variables body image and empathy from partners were added to the regression. Finally, the interaction term 'BIS*ODPT' was added to the regression to observe whether the interaction term had a significant effect. In Model 3 from Table 3, the interaction term BIS*ODPT was significant, and this variable added 2.5% of the variance compared with Model 2. Furthermore, this model explained 46.9% of the variance in predicting depressive symptoms. The moderating effect of empathy from a partner on the relationship between body image and depressive symptoms was significant ($p < 0.01$). This result is summarized in Table 4 and is illustrated in Figure 2. The ODPT scores were separated into groups of low, medium, and high in terms of mean score plus/minus 1 standard deviation. The slope decreased as the ODPT scores increased. These findings indicated that the more empathy the women perceived from their partners, the more their depressive symptoms arising from body image discomforts tended to decrease.

Table 4. Hierarchical regression analyses for the moderating effect of ODPT on the relationship between body image and depression ($n = 151$)

Step	Explanatory variables	Model 1 β (SE)	Model 2 β (SE)	Model 3 β (SE)
1	Control variables			
	The degree of concern about disease recurrence	.265*(.24)	.094 (.19)	.072 (.19)
2	Predictive variables			
	Body image score		.543* (.09)	.540 (.09)*
	ODPT score		−.295* (.03)	−.302 (.03)*
3	Interaction term			
	BIS × ODPT			−.161 (.004)*
	Adjusted R^2	.064*	.447*	.469*
	ΔR^2		.388*	.025*
	Overall model F	11.27*	41.45*	34.17*
	F change		52.63*	7.15*

ODPT, Other Dyadic Perspective-Taking scale; SE, standard error; BIS, body image score.
*$p < .01$ (two-tailed).

Discussion

This study addressed the significance of empathy from partners on women's body images and depressive symptoms. The study results supported the hypothesis that empathy from partners, which was measured by the ODPT, moderated the impact of women's body image on depressive symptoms. However, even though there was a significant relationship between empathy from a partner and depressive symptoms, there was no significant relationship between partner empathy and body image.

The significant moderating effect of partner empathy on the relationship between body image and depressive symptoms supported the hypothesis of this study. One study conducted by Manne and colleagues [31] found that

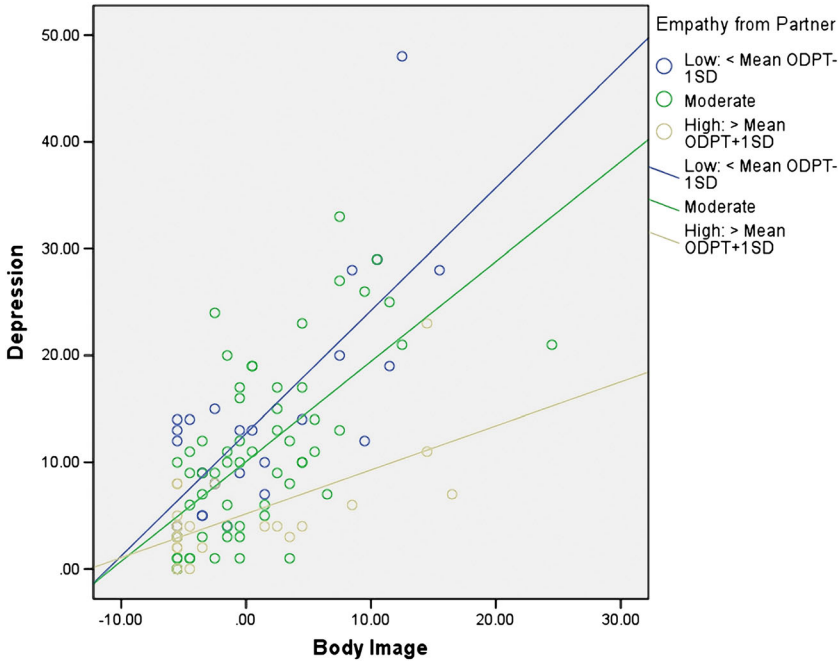

Figure 2. Depression as a function of partner empathy and body image. ODPT, Other Dyadic Perspective-Taking scale; SD, standard deviation

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constructive communication played an important role in reducing women's distress, particularly among patients who were coping with the physical side effects of cancer treatment. In Manne's study [31], the concept of constructive communication emphasized the mutual discussion of feelings and expressing and understanding those feelings. This concept was similar to the scale used in this study that measured the partner's empathy. As a result, women's depressive symptoms resulting from body image problems after breast cancer surgery might benefit from increased partner empathy. Furthermore, partners' empathetic skills could be improved by communication training. This result demonstrated again that the ability of the partners to empathize played a significant role in reducing the women's distress.

The significant correlation between partner empathy and depressive symptoms indicated that women receiving greater empathy from their partners would report less depressive symptoms. This finding was consistent with those of previous studies [18,32]. Partners who participated in 'Helping Her Heal' interventions were trained to boost listening and elicitation skills to elaborate women's feelings, such as their empathy skills, and were able to reduce women's depressive symptoms [33]. Perceived empathy by women resulting in a feeling of reciprocal reliance is important for women [34]. Women's experience of connectedness to their significant others contributes to the development of their selves. When women perceive another's empathy in the context of their important relationships, they feel an increased sense of self-clarity and empowerment as relational individuals. Furthermore, they will also recognize themselves or capitalize on changes and have lower potentials for reporting depressive symptoms [20].

The finding in this study of a non-significant relationship between partner empathy and body image was unexpected. Previous studies have found that women's perception of how their partners responded to their disease influenced women's acceptance of their appearances and sense of femininity [22]. Another study revealed that the influence of a couple's relationship on a woman's body image was particularly significant during the treatment period [35]. The participants in this study were recruited after all active treatments had been completed. The relationship between couple's interactions, indicated here as empathy from partners, and body image during this survivorship period might have decreased. This unexpected result may also be due to cultural difference. One systematic review focused on the effects of couple-based interventions on body image found that not only providing strategies for women to come to terms with body changes but also fostering their feelings of connectedness and closeness with their partners were important for improving women's self-acceptance of their bodies [36]. Chinese women feel uncomfortable about openly expressing their concerns about their femininity [37]. A partner's empathy regarding this private issue (concern about body image) could be difficult to express in the context of Chinese culture. As a result, improving couples' communication, to enable them to openly discuss their private concerns within the bounds of Chinese culture, may be helpful for the partners in understanding the concerns of these women; then, the partners could use empathy regarding specific issues to help reduce the women's body image discomforts.

Health care providers examining psychological distress among women with breast cancer should consider how much empathy women receive from their partners. The interventions used to improve women's mental health should encourage their partners to participate [38]. Mutual and open communication about cancer-related feelings between patients and their partners had substantial protective effects on women's psychological well-being [31].

In terms of belief in 'Yuan' and less power for women in the Chinese family structure, health care for women with breast cancer in Chinese culture must endeavor to better understand how dyads cope with breast cancer. Building mutual communication within dyads and increasing partners' empathy skills could improve the psychological well-being of women in Chinese culture. This finding could provide health care professionals with relevant cultural information: improving Chinese women's mental health needs involves enabling their partners to behave empathetically to help these women recover from the impact of breast cancer treatment.

Study limitations

Because of its cross-sectional, correlational design, the causal relationship was only speculative rather than confirmed. The cross-sectional study design limited the ability to distinguish whether there was a causal effect between body image and depressive symptoms. A study focused on women who are newly diagnosed with breast cancer has suggested that depression might contribute to women's body image discomforts [39]. Recruiting women who were finishing active treatment at least 6 months after receiving a cancer diagnosis in this study might have decreased the bias of the impact of emotional distress on women's body images. Women's body image concerns could contribute to their depression levels [6]. Moreover, although the findings suggest that greater empathy may diminish the impact of body image change on women's depressive symptoms, in this study, only the self-reported perception of partner empathy but not partners' self-rated empathy was measured. Further studies may be conducted to distinguish the impact of these two different measurements on the moderating effect.

The strength of this study was that previous studies have examined the relationships among body image and

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mental health with partner support separately; however, an innovation of this study was the finding that a partner's support could minimize the impact of changes in a woman's body image on their depressive symptoms. There are numerous directions for future research. As a result of finding a non-significant relationship between partner empathy and women's body images, a scale combining the affective and cognitive dimensions of empathy would be helpful in validating this relationship. Future work should also apply longitudinal designs to better understand the links between variables over time.

Conclusion

This study offered an important contribution to the literature: The more empathy women perceived from partners, the fewer depressive symptoms women reported. Empathy from a partner could moderate the impact of body image changes on depressive symptoms. Women's depression symptoms, resulting from a change in body image after breast cancer surgery, might be minimized if they perceived greater empathy from their partners.

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