

# Body Image and Quality of Life Among Breast Cancer Survivors: A Literature Review

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**Abstract:** *Background:* Breast cancer patients tend to suffer from severe body image disturbance which has a great impact on their quality of life. The effects can be permanent as cancer survivorship is a lifelong process.

*Objectives:* The objectives of this literature review are to identify, summarise and critically appraise the current literature investigating the body image and quality of life of breast cancer survivors.

*Design:* A critical literature review on the body image and quality of life of breast cancer survivors.

*Date sources:* MEDLINE, the British Nursing Index, CINAHL Plus, PsycI NFO and Google Scholar.

*Review methods:* A comprehensive search was carried out in the five databases from the period 2005 to 2016 to identify relevant articles with the following terms and their combinations: "body image", "quality of life" and "breast cancer".

*Results:* A total of 13 studies were included in the literature review, six investigated the impacts of the disease and its related treatment on body image and seven examined the quality of life among breast cancer survivors. Body image was found to be disturbed after treatment and associated with the type of surgery a patient had undergone, but the impact seemed to diminish within two years following surgery. The cosmetic differences caused by different surgical approaches were found to have no significant impact on body image. Young breast cancer survivors suffered from worse body image when compared with older women. Regarding the quality of life of breast cancer survivors, this was also found to be associated with the type of surgery undergone. Patients who received breast-conserving therapy perceived that they had a better quality of life than those who underwent mastectomy. Age is also identified as a determinant of quality of life, with younger patients reported to have poorer outcomes. In the long run, an improvement in quality of life among breast cancer survivors over time was noted. The relevant literature was unable to produce enough evidence of the correlation between body image and quality of life.

*Conclusion:* Breast cancer survivors were reported as having a poorer body image and deterioration in their quality of life after related treatment. Specialist nursing care and appropriate interventions should be developed to address patient needs. As most of the studies investigating the body image of breast cancer survivors were carried out in Western countries, implications for research on this issue in different cultural background is suggested.

**Keywords:** Body image, Quality of life, Breast cancer, Survivorship, Literature review.

## INTRODUCTION

Breast cancer is defined as the uncontrollable growth of abnormal breast cells that can invade surrounding tissues and spread to other organs through blood vessels or lymph nodes. It can occur in both sexes but is uncommon in men [1].

According to the World Health Organization (2014), breast cancer is the second most prevalent cancer worldwide and the most common cancer among females [2]. In 2012, there were 1.67 million newly diagnosed cases throughout the world. Moreover, it is the fifth leading cause of cancer death globally, with about 0.5 million people dying of it [2]. In Hong Kong, as the most common cancer and the third leading cause of cancer deaths in females, breast cancer was newly identified in 3,508 women and caused 601 deaths in 2012 [3].

Breast cancer patients tend to suffer from severe body image disturbance. Treatment for breast cancer including both medical and surgical intervention can cause severe disfigurement of patients [4], in particular, those who have undertaken mastectomy tend to experience disfigurement and an impaired body image [5]. The disruption of body integrity can lead to patients feeling unattractive and incomplete. They may also be embarrassed by their appearance during social interactions [6]. The more visible the disfigurement, the greater the probability that the body image will be affected [7]. Furthermore, the change in physical features may give them a sense of losing their identity, which in turn alters their self-concept and also leads to social stigma, and hence isolation [4, 8].

Disturbed body image has a great impact on the patient's quality of life. Patients with a disfigurement and poor body image are likely to encounter psychosocial, physical and functional problems in their daily lives and the resultant low self-esteem and depression further challenge their quality of life [9, 10].

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Begovic-Juhant *et al.* also indicated that changes in body image among female breast cancer survivors influenced their well-being and quality of life as it altered their own perception of femininity and attractiveness [11]. In addition, the disruption of body image and quality of life can cause severe psychological distress in breast cancer survivors. The impact can be permanent as cancer survivorship is a lifelong process [12].

In order to improve patient outcome, we need to have a full picture of body image and its association with the quality of life among breast cancer survivors. The aim of this study is to identify, summarise and critically appraise current literature investigating the body image and quality of life of breast cancer survivors, as well as identifying the inter-relationships of these two aspects among the patients.

## MATERIALS AND METHODS

A comprehensive search was carried out using five databases – MEDLINE, the British Nursing Index, CINAHL, PsycINFO and Google Scholar from the period 2005 to 2016 – to identify relevant articles. The following terms and their combinations were used: “body image”, “quality of life” and “breast cancer”. Inclusion criteria were studies having primary outcomes of body image or quality of life in breast cancer survivors. Additionally, only studies targeting female breast cancer survivors were included. The age of the study participants was not restricted so as to broaden the search and allow more relevant studies to be identified so as to prevent some important work from being overlooked. Studies examining outcomes other than body image or quality of life and those which were not available in English or Chinese were excluded. Two authors assessed all identified articles independently for inclusion in the review.

A total of 1,347 potentially relevant articles were identified from the search. After examining their titles and abstracts, 32 duplicated studies and 1,276 irrelevant articles were removed. Full texts of the remaining 39 were retrieved and assessed for eligibility. In accordance with the inclusion and exclusion criteria, 26 articles were excluded, leaving the remaining 13 to be included in the review.

## RESULTS

Of the 13 studies included, 12 were cross-sectional studies and one was a systematic review. Six of the

included studies investigated the impacts of the disease and its related treatment on body image and seven on quality of life among breast cancer survivors. Characteristics of the included studies are presented in Table 1.

## Body Image

In general, breast cancer survivors reported to have a disturbed body image after the diagnosis of the disease and early in the survivorship period, but the degree of disturbance varied in different types of surgery. Rosenberg *et al.* conducted a prospective cohort study to explore body image concerns among young female breast cancer patients in the United States. A total of 419 women aged 40 or below who were surgically treated for breast cancer were recruited to the study. The result indicated that body image was significantly associated with the type of surgical treatment ( $p < 0.0001$ ). Patients, who had undergone mastectomy, whether or not receiving reconstructive surgery, had greater body image concerns than those who had had lumpectomy. Body image was also found to be adversely affected by radiation treatment, anxiety, depression, fatigue, musculoskeletal pain, and weight change [13]. A cross-sectional and correlational study conducted in Taiwan also reported similar findings on body image in breast cancer survivors. One hundred and ten patients were recruited from the in-patient general surgery wards of a medical centre in Northern Taiwan. Surgical procedure, especially mastectomy, and younger age were found to be associated with greater body image concerns. Disease impact, anxiety and depression were significantly related to body image distress among the patients [14]. Age is identified as a determinant of body image in a systematic review. Younger breast cancer survivors experienced significantly worse body image when compared with older ones [15].

As surgical techniques for breast cancer have advanced, more emphasis has been placed on cosmetic appearance and body image. For the early stages of breast cancer, conservative treatment would be performed instead of radical surgery. Wide local excision is one of the more popular conservative approaches to small breast tumours. Lee *et al.* conducted a retrospective survey to compare the differences of body image resulting from anterior and lateral approaches of wide local excision of breast tumours. It was found that no significant difference in body image between the two groups, regardless of the cosmetic differences resulting from the type of surgery,

Table 1: Characteristics of the Included Studies

Author(s)	N Sample	Study Design	Data Collection	Results
Lee et al. [16]	267 breast cancer patients who had undergone wide local excision in the United Kingdom	A retrospective survey	Body Image Scale (BIS) to assess body image	- No significant difference in body image between anterior and lateral approaches of wide local excision despite concerns about scars and appearance of breasts.
Collins et al. [17]	549 breast cancer patients who had undergone surgical treatment in the United States	A prospective longitudinal study	Self-developed questionnaire using modified items from the Cancer Rehabilitation Evaluation System (CARES) to assess body image	- Patients who underwent mastectomy with reconstruction reported poorer body image than those underwent breast-conserving surgery at 4-6 weeks, 6 and 12 months after surgery ( $p < 0.02$ ), but not at 24 months. - Patients who underwent mastectomy with reconstruction also reported poorer body image than those underwent mastectomy alone at 6 months after treatment ( $p = 0.011$ ). - Patients who received mastectomy alone reported similar body image as breast-conserving surgery patients across all 4 time points. - The impact of surgery type in body image was affected by surgical side-effects severity within the first year of surgery. - After 2 years, surgery type did not have a strong relationship with body image problems.
Falk Dahl et al. [18]	248 female breast cancer survivors in the United States	A cross-sectional and longitudinal study	BIS to assess body image	- In the cross-sectional analysis, body image in breast cancer survivors was associated with the types of surgery, radiotherapy, mental state, health status and quality of life. - In the longitudinal analysis, body image was found to be relatively stable over time. - There was no significant difference in body image dissatisfaction between breast cancer survivors and age-matched group.
Chen et al. [14]	110 women who were surgically treated for breast cancer in Taiwan	A cross-sectional and correlational design	Chinese version of BIS to assess body image	- The type of surgery and age were found to be important factors relating to body image concerns, with mastectomy and young age associated with poor body image.
Rosenberg et al. [13]	419 women who were surgically treated for stage 0-III breast cancer in the United States	A prospective cohort study	CARES to assess body image	- Radical surgery, mastectomy with or without reconstruction, was associated with greater body image concerns. - Multiple factors were associated with more body image concerns, including radiation ( $p = 0.01$ ), anxiety ( $p = 0.0001$ ), depression ( $p < 0.0001$ ), fatigue ( $p = 0.04$ ), musculoskeletal pain ( $p < 0.0001$ ), weight gain and loss ( $p = 0.01$ , $p = 0.02$ ), and surgical type ( $p < 0.0001$ ).
Paterson et al. [15]	Inclusion of 36 articles with 9,343 breast cancer survivors	A systematic review	A number of measurement tools including BIS, European Organization for Research and Treatment of Cancer Breast Cancer-Specific Quality-of-Life Module (EORTC-QLQ-BR23), EORTC Core Quality of Life Questionnaire (EORTC-QLQ-C30), Cancer Rehabilitation Evaluation System, and self-developed instruments to assess body image	- Age and treatment type had a significant impact on body image. - Poorer body image was related to physical and psychological distress, sex and intimacy, and the partnered relationship in young breast cancer survivors.
Peuckmann et al. [23]	1,783 breast cancer survivors in Denmark	A nationwide postal survey	Short-form 36 (SF-36) to assess quality of life	- Breast cancer survivors tended to rate better quality of life than the general population. - They reported statistically less bodily pain, better general health but worse mental health (all $p < 0.0001$ ). - Younger breast cancer survivors reported worse quality of life than equally aged women of the general population, while older breast cancer survivors reported better quality of life.

Arndt <i>et al.</i> [25]	315 breast cancer survivors in Germany	A population-based cohort study	EORTC-QLQ-C30 and EORTC-QLQ-BR23 to assess quality of life	<ul style="list-style-type: none"> <li>- Patients who were treated with breast-conserving therapy reported to have better quality of life than those who had a mastectomy.</li> <li>- Differences in overall quality of life between women with breast-conserving therapy and mastectomy gradually increased over time and became statistically significant only at 5 years.</li> </ul>
Montazeri <i>et al.</i> [21]	167 breast cancer survivors in Iran	A prospective study	EORTC QLQ-C30 and EORTC-QLQ-BR23 to assess quality of life	<ul style="list-style-type: none"> <li>- Breast cancer patients perceived improvement of quality of life in the long run while some aspects such as body image and sexual functioning deteriorated over time.</li> </ul>
Han <i>et al.</i> [19]	112 breast cancer patients surgically treated for breast cancer in Germany	A retrospective study	EORTC QLQ-C30 and EORTC-QLQ-BR23 to assess quality of life	<ul style="list-style-type: none"> <li>- Patients with breast-conserving therapy had a much better body image compared with the mastectomy and reconstruction group (<math>p = 0.004</math>, <math>p = 0.003</math>).</li> <li>- There was no significant difference in most domains of quality of life between patients with breast-conserving therapy, and mastectomy with or without breast reconstruction, except financial difficulties. The reconstruction group had more financial difficulties when compared with the breast-conserving therapy (<math>p = 0.0006</math>).</li> </ul>
Costa-Requena <i>et al.</i> [20]	62 women treated for breast cancer in Spain	A longitudinal study	Functional Assessment of Cancer Therapy-Breast (FACT-B) scale version 4 to assess quality of life	<ul style="list-style-type: none"> <li>- The mean scores of quality of life were found to be lower before and during treatment, which improved after completion of treatment.</li> <li>- Psychological distress was found to be associated with quality of life.</li> </ul>
Hsu <i>et al.</i> [22]	285 long-term breast cancer survivors in Canada	A longitudinal study	EORTC-QLQ-C30 to assess quality of life	<ul style="list-style-type: none"> <li>- Long-term breast cancer survivors reported to have improvement in many domains of quality of life over time.</li> <li>- They had similar quality of life as age-matched non-cancer controls.</li> </ul>
Koch <i>et al.</i> [24]	458 women treated for breast cancer in Germany	A longitudinal population-based study	EORTC-QLQ-C30 to assess quality of life	<ul style="list-style-type: none"> <li>- Breast cancer survivors reported comparable overall quality of life as the general population, but significantly more functioning restrictions and more symptoms (<math>p &lt; 0.05</math>).</li> <li>- Restrictions were larger for the youngest survivors.</li> </ul>

although the formation of scars and the appearance of breasts after surgery were still the main concerns of the survivors [16]. This seems to indicate that the cancer stage and its corresponding treatment are the determinants of the body image disturbance. The cosmetic factors and physical appearance are only minor issues for consideration which operation approach is selected.

For cosmetic effect, reconstructive surgery tends to be offered to mastectomy patients to improve their body image. Collins *et al.* conducted a longitudinal cohort study to explore the effect of reconstructive surgery on body image in breast cancer patients who had undergone a mastectomy. The participants were followed up for two years after surgery. It is expected that patients with reconstructive surgery after mastectomy would have a better body image than those without. It is surprising that after considering the additional surgical side-effects resulting from reconstructive surgery, patients receiving mastectomy and reconstruction suffered from significantly more body image problems than those with mastectomy alone at six months after surgery. There was no significant difference in body image after two years [17].

The duration of body image disturbance was also investigated in the study of Falk Dahl *et al.* The study was cross-sectional and longitudinal designs, aimed at examining body image in long-term breast cancer survivors. A total of 248 participants were recruited, and it stated that body image was negatively associated with mental distress, poor health and an impaired quality of life, but was relatively stable over time. When compared with the control group consisting of women of a similar age who were free of the disease, there was no significant difference in body image dissatisfaction between breast cancer survivors and the control group at three years after treatment [18]. This indicates that body image disturbance in breast cancer survivors might dissipate over time.

### Quality of Life

Apart from body image, quality of life is an important concern in making surgical decisions for treating breast cancer. A retrospective study on breast cancer survivors' quality of life after operative treatment was conducted. A total of 112 participants treated with breast-conserving therapy or mastectomy, with or without breast reconstruction after these treatments,

were recruited. Compared with the mastectomy group and reconstruction group, the patients with breast-conserving therapy reported to have a better body image. This might be due to fewer postoperative side-effects, a faster recovery as well as the smaller tumour size indicated for this type of treatment [19].

The impact of the disease and related treatment on short-term and long-run quality of life was also investigated in previous studies, but the results were inconsistent. A longitudinal study was conducted in Spain to evaluate quality of life in the early stages of breast cancer treatment, with 62 breast cancer patients assessed at three time-points: one week before treatment, during active treatment and one month after its completion. It was found that quality of life was poorer before and during treatment but improved after its completion. There was no significant difference in the total quality of life score over three time points. Moreover, psychological distress adversely affected quality of life [20]. However, breast cancer patients reported to have a lowered quality of life at one year after completion of treatment in the study of Montazeri *et al.* Body image and sexual functioning were also found to deteriorate over time, from pre-diagnosis to one year post-treatment [21]. Long-term survivors, more than five to 10-year post-diagnosis, also reported comparable overall quality of life as the general female population [22-24]. However, certain aspects of quality of life including physical and social functioning, pain, and financial difficulties declined over time. This might be due to aging rather than the disease or treatment [24]. The inconsistent results reported by Costa-Requena *et al.* and Montazeri *et al.* might be due to the duration after treatment completion and mean age of the participants. The participants in the Costa-Requena *et al.*'s study had completed treatment for one month with a mean age of 52.8, while those in the study of Montazeri *et al.* had completed treatment for one year with a mean age of 47.2 [20, 21]. This can postulate that late side-effects after treatment and a younger age would lead to a poorer quality of life.

Long-term quality of life of breast cancer survivors was examined in a population-based cohort study in Germany. A total of 315 breast cancer survivors who had had breast-conserving therapy or mastectomy were followed up for five years. The findings indicated that patients treated with breast-conserving therapy experienced a better quality of life than those who had undergone mastectomy, but this was only significant at five years. It is possible that late side-effects from mastectomy affect quality of life in long run [25].

## Correlation between Body Image and Quality of Life

The correlation between body image and quality of life has been investigated in the study of Falk Dahl *et al.*, which stated that poor body image among breast cancer survivors is associated with a lower quality of life [18]. Although breast cancer patients who had received breast-conserving therapy demonstrated a better body image and achieved a higher quality of life than those who had undergone mastectomy in the studies of Arndt *et al.* and Han *et al.*, no correlational analysis was conducted to illustrate the strength of this [19, 25]. To conclude, the relevant literature produced limited evidence on the correlation between body image and quality of life.

## CRITICAL APPRAISAL OF THE INCLUDED STUDIES

The quality of the 13 studies included in the review was appraised critically by appraisal tools from the Centre for Evidence-Based Management [26]. All 12 quantitative studies and the systematic review addressed clearly focused research questions. For the 12 included quantitative studies, the study designs were appropriate and the methods of participant selection were clearly described in all cases. Selection bias was not obvious and the samples in all studies were highly representative of the targeted populations. None of them, except Chen *et al.* [14] described whether their sample sizes had been based on considerations of statistical power before the studies began. Chen *et al.* [14], Rosenberg *et al.* [13], Costa-Requena *et al.* [20] and Arndt *et al.* [25] had a satisfactory response rate. All studies, except Collins *et al.* [16], used valid and reliable instruments, and all assessed statistical significance properly. Only Collins *et al.* [16] and Falk Dahl *et al.* [18] mentioned confidence intervals while none of the other 10 did. The only study that did not clearly describe measures to control confounders was Lee *et al.* [15], while such control measures were clearly discernible in the others. All these results were potentially able to be freely applied to local organisations. A critical appraisal of the quantitative studies is presented in Table 2.

For the included systematic review study, the search databases were not comprehensive and publication bias has not been prevented as only published literatures were included. However, the inclusion and exclusion criteria for the studies included were clearly defined, and the search was systematic and reproducible. The methodological quality of the included studies was not assessed using a critical appraisal tool. Meta-analysis was not conducted, but

**Table 2: Critical Appraisal of the Quantitative Studies**

Appraisal Questions	Lee <i>et al.</i> [15]	Collins <i>et al.</i> [16]	Falk Dahl <i>et al.</i> [17]	Chen <i>et al.</i> [14]	Rosenberg <i>et al.</i> [13]	Peuckmann <i>et al.</i> [23]
Did the study address a clearly focused question / issue?	Yes	Yes	Yes	Yes	Yes	Yes
Is the research method (study design) appropriate for answering the research question?	Yes	Yes	Yes	Yes	Yes	Yes
Is the method of selection of the subjects (employees, teams, divisions, organizations) clearly described?	Yes	Yes	Yes	Yes	Yes	Yes
Could the way the sample was obtained introduce (selection) bias?	No	No	No	No	No	No
Was the sample of subjects representative with regard to the population to which the findings will be referred?	Yes	Yes	Yes	Yes	Yes	Yes
Was the sample size based on pre-study considerations of statistical power?	No	No	No	Yes	No	No
Was a satisfactory response rate achieved?	No	No	No	Yes	Yes	No
Are the measurements (questionnaires) likely to be valid and reliable?	Yes	No	Yes	Yes	Yes	Yes
Was the statistical significance assessed?	Yes	Yes	Yes	Yes	Yes	Yes
Are confidence intervals given for the main results?	No	Yes	Yes	No	No	No
Could there be confounding factors that haven't been accounted for?	Yes	No	No	No	No	No
Can the results be applied to your organization?	Yes	Yes	Yes	Yes	Yes	Yes

**Table 2 (Cont'd): Critical Appraisal of the Quantitative Studies**

Appraisal Questions	Arndt <i>et al.</i> [21]	Montazeri <i>et al.</i> [20]	Han <i>et al.</i> [18]	Costa-Requena <i>et al.</i> [18]	Hsu <i>et al.</i> [22]	Koch <i>et al.</i> [24]
Did the study address a clearly focused question / issue?	Yes	Yes	Yes	Yes	Yes	Yes
Is the research method (study design) appropriate for answering the research question?	Yes	Yes	Yes	Yes	Yes	Yes
Is the method of selection of the subjects (employees, teams, divisions, organizations) clearly described?	Yes	Yes	Yes	Yes	Yes	Yes
Could the way the sample was obtained introduce (selection) bias?	No	No	No	No	No	No
Was the sample of subjects representative with regard to the population to which the findings will be referred?	Yes	Yes	Yes	Yes	Yes	Yes
Was the sample size based on pre-study considerations of statistical power?	No	No	No	No	No	No
Was a satisfactory response rate achieved?	Yes	No	No	Yes	No	No
Are the measurements (questionnaires) likely to be valid and reliable?	Yes	Yes	Yes	Yes	Yes	Yes
Was the statistical significance assessed?	Yes	Yes	Yes	Yes	Yes	Yes
Are confidence intervals given for the main results?	No	No	No	No	No	No
Could there be confounding factors that haven't been accounted for?	No	No	No	No	No	No
Can the results be applied to your organization?	Yes	Yes	Yes	Yes	Yes	yes

the results of the review can be applied to local organizations. The critical appraisal of the systematic review is presented in Table 3.

## DISCUSSION

This is a comprehensive review of the literature on the impact of breast cancer on body image and quality

**Table 3: Critical Appraisal of the Systematic Review**

Appraisal Questions	Paterson et al. [15]
Did the study address a clearly focused question?	Yes
Was a comprehensive literature search conducted using relevant research databases (i.e. ABI/INFORM, Business Source Premier, PsycI NFO, Web of Science, etc.)?	No
Is the search systematic and reproducible (e.g. were searched information sources listed, were search terms provided)?	Yes
Has publication bias been prevented as far as possible (e.g. were attempts made at collecting unpublished data)?	No
Are the inclusion and exclusion criteria clearly defined (e.g. population, outcomes of interest, study design)?	Yes
Was the methodological quality of each study assessed using predetermined quality criteria?	No
Are the key features (population, sample size, study design, outcome measures, effect sizes, limitations) of the included studies described?	Yes
Has the meta-analysis been conducted correctly?	No applicable
Were the results similar from study to study?	Yes
Is the effect size practical relevant?	No applicable
How precise is the estimate of the effect? Were confidence intervals given?	No
Can the results be applied to your organization?	Yes

of life. It was believed that the disruption of body image and quality of life could cause psychological distress to breast cancer survivors. Body image was found to be associated with the type of surgery a patient had undergone. Mastectomy, which caused greater disfigurement than other forms of surgery, including lumpectomy, would lead to a poorer body image. The type of the surgery received implied the stage of the disease would have an impact on body image. Other multiple factors, including adjunctive treatment, psychological distress, physical symptoms, and weight change were also found to be associated with body image. Younger age was found to have poorer body image, but the impact on body image might diminish in two years after surgery. On the other hand, the cosmetic differences caused by different surgical approaches were found to have no significant impact on body image.

The quality of life of breast cancer patients also found to be associated with the type of surgery. Patients who received breast-conserving therapy perceived that they had a better quality of life than those who underwent mastectomy. This might be due to fewer postoperative side-effects, early cancer stage and a faster recovery time. In the long run, an improvement in quality of life among breast cancer patients over time was noted. However, late side-effects from cancer treatment seem to adversely influence quality of life. Those of a younger age also reported they had a poorer quality of life.

As a limited amount of evidence was available after studying the relevant literature, further studies are required to achieve a complete picture of body image and quality of life and to examine the associations between these two aspects in breast cancer survivors. In addition, the review findings were limited, as all included studies, except for one from Taiwan, were conducted in Western countries. Patients' values would greatly affect their perceptions of body image and quality of life. Chinese people are generally less willing to express their emotions and tend to keep psychological distress to themselves, in the belief that the expression of negative emotions may destroy the harmonious equilibrium with others, but a high level of emotional control is associated with psychological distress [27]. In addition, the Chinese tend to believe that cancer is a punishment for such 'misbehaviour' as smoking and alcoholism, which further challenges their self-concept [28]. In order to develop appropriate interventions to address the needs of survivors with different cultural backgrounds, it is important to conduct research studies to assess body image and quality of life among breast cancer survivors and to examine the associations between these two aspects in different countries.

#### Implications for Nursing Practice and Future Research

Being the most common cancer in female worldwide, breast cancer affects a large population. This study provides a basic understanding of body

image and quality of life, and the correlation between them among breast cancer survivors. Breast cancer survivors suffer from severe body image disturbances, which have negative impacts on their quality of life [9, 10]. Cancer survivors with certain cultural beliefs, for example the Chinese, may suffer from greater impacts than other ethnic groups, as they are prone to suffer from more psychological distress due to the high emotional control that Chinese values impose [23]. In view of the limited work on this aspect in breast cancer survivors, it is important to conduct research studies to assess their body image and quality of life to provide new and culturally specific information, helping to explore the severity of body image disturbance, impairment of quality of life and some associated factors, as well as the relationships between the two variables among different ethnic groups of survivors. A longitudinal study should also be carried out to examine long-term changes in body image and quality of life. In addition, a study should be conducted to develop appropriate interventions and evaluate their effects on improving these patient outcomes.

As an understanding of patients' needs is essential in nursing care, the results of the study will help to develop appropriate interventions to address those needs. Holistic and specific nursing care can be developed to improve body image and quality of life among breast cancer patients and assist them through their survivorship more smoothly, especially those of a younger age who are diagnosed with advanced stages of breast cancer.

## CONCLUSION

Breast cancer survivors in general experience poor body image and a deterioration in their quality of life after the diagnosis of the disease and related treatment. However, limited evidence is available exploring these aspects among breast cancer survivors, especially in the Chinese population, further study directions are identified to achieve a complete picture of body image and quality of life and to examine the associations between these two aspects in breast cancer survivors with different cultural backgrounds, which will help to develop holistic, specific and culturally sensitive nursing care so as to improve their body image and quality of life and assist them through their survivorship more smoothly.

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