



Body Image, Relationships, And Hope Among Cancer Patients

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ABSTRACT

Evidence suggests that breast cancer can have a very significant impact on body image in females. Various issues regarding breast cancer and its treatment are faced by patients across the globe which includes poor body image, strained relationships, physical symptoms, psychological distress, etc. However, there are fewer high-quality reviews that study and examine body image, interpersonal relationship, and hope among cancer patients from a global perspective. Therefore, to summarize the evidence of relation of these exposures to breast cancer in females, this systematic review was conducted. A database search on studies published between 2013 and 2023 led to the inclusion of n=26 studies. Prisma chart was implemented in the methodology of this systematic review. Body image dissatisfaction, psychological issues (depression, anxiety, stress), poor interpersonal relationships, hopelessness, etc. were commonly observed in patients suffering from breast cancer globally and the variations expressed in their negative or positive associations were seen with each other. This systematic review thus attempts to give a relation between body image, interpersonal relationships, and hope among cancer patients. It will enable researchers, scholars, and professionals to understand, view, or approach breast cancer from a psychological perspective and formulate interventions focusing on the exposures taken for this review.

Keywords: Body image breast cancer, interpersonal relationships breast cancer, hope breast cancer

1. Introduction

Breast cancer begins in breast cells. After skin cancer it is the second most common cancer in women worldwide. It occurs in both men and women, but it is much more common in women. Patients having breast cancer suffer from sleep disturbances, high fatigue due to chemotherapy and radiotherapy, decreased sexual pleasure, etc. Previous researches suggest that breast cancer can have a very significant impact on the body image in females with long term effects in the quality of life, interpersonal relationships, and psychosocial adjustments as per Hormes et al., (2008).

Social Comparison Theory

Leon Festinger gave the theory of Social Comparison in 1954. The habit of comparing oneself with others can influence people's behaviour in workplace and daily lives. **Social comparison theory** simply suggests that people have a tendency to evaluate and compare themselves or their own abilities and opinions to others. They do this to gain information about their own abilities, attitudes, and opinions. According to the theory, there are two types of social comparisons: upward and downward comparisons. An individual's comparison done by self with someone they perceive to be better than them in any manner (intelligence, wealth, physical appearance) is called upward comparison. An individual's comparison of self to someone they perceive to be worse than them is called downward comparison. Mostly people engage in upward comparisons when seeking to gain something such as improve skills or abilities. However, the negative effects of upward comparisons can be feelings of inadequacy or low self-esteem. On the other hand, to boost self-esteem people are more likely to engage in downward comparisons. This theory has implications in areas of social psychology, marketing, and health psychology. It has been used in health psychology to understand how people perceive their own health and how they can be motivated to make positive changes to their lifestyle. According to Corcoran et al., social comparison processes are adjusted by breast cancer patients to experience favourable comparisons by avoiding unfavourable comparison processes and that reduces the risk of negative consequences after encountering other patients. This suggests that if engaged in comparisons in the right process patients may profit from it.

Self-Objectification Theory

Self-objectification theory suggests that the constant focus on the physical appearance leads to body dissatisfaction and a negative body image due to women being socialized to view their bodies as objects to be judged and evaluated and not a functional or integral part of self. The theory also says that culture places an emphasis on the physical appearance of women's bodies leading to objectification. Also, reinforcement of self-objectification can be due to interpersonal relationships (romantic partners and peers placing an excessive emphasis on physical appearance). The theory has been used in interventions to reduce the associated negative consequences associated by promoting self-acceptance, challenging societal and cultural attitudes related

to women's physical appearance, and increasing awareness about the negative consequences due to objectifying women's bodies. This can improve overall psychological well-being. Calogero et al., (2012) states that objectification theory attempts to explain the extreme and pervasive tendency to equate women with their bodies and why this can have such negative consequences for women's body image and beyond. Thus, in a study by Rosenberg et al., (2020) in U.S., it was observed post-surgery young women had worse body image, anxiety, and poor sexual health. Moreover, more body image distress was reported due to lack of self-compassion as per Todorov et al., (2019).

Social Exchange Theory

Social exchange theory by Homans et al., (1958) is a psychological theory of relationships that states that people try to avoid the costs (e.g., rejection, shame) associated with relationships and enter them in order to obtain the benefits (e.g., companionship, intimacy, enhanced self-esteem). According to the theory social relationships are characterized by a series of exchanges by giving something and receiving something in return in different forms like emotional support, material goods, and social status. The costs and benefits are evaluated by people to determine whether a particular relationship is worth pursuing and chances of that increase when benefits outweigh the costs. This theory explains romantic relationships, friendships, their development and persistence over time. Breast cancer and its treatment can strain the interpersonal relationships. But according to Cairo Notari et al., (2017) if there is an exchange in a relationship that is positive or a protective role of the relationship is observed, there is report of less body image disturbance. Moreover, self-esteem and bodily esteem were restored by dating and forming new intimate relationships as per Kurowecki et al., (2014).

Body Image, Interpersonal Relationships, and Hope

Body image is "an individual's perception, thoughts, and feelings about their own body and its appearance" (APA Dictionary of Psychology, 2nd ed., 2020). According Vartanian et al., (2012) self-discrepancy theory states that most women view themselves as having large, heavy, fat, and less attractive body than their ideal body. These self-discrepancies instigate body dissatisfaction in them. The discrepancies between two self-states results in emotional responses. Despite the concern of equating self-discrepancies and body dissatisfaction, there is enough evidence that discrepancies between how women see themselves and how they would ideally like to be are related to body dissatisfaction along with other negative psychological outcomes.

Apart from body image and interpersonal relationships, hope is crucial to battle against breast cancer and maintain a positive attitude in patients undergoing treatment. In a study by Cohen et al., (2022) a better quality of life, less pain and anxiety were seen in patients who had high level of hope that increased resilience, and enhanced coping skills. Also, if the levels of hope and self-compassion are high then lower psychological distress is observed in women suffering from breast cancer.

2. Method

Aim

To conduct a meta-analysis on Body Image, Relationships, And Hope Among Cancer Patients.

Objectives

- To find the positive or negative associations of body image, relationships, and hope among cancer patients.
- To prepare a model after interpreting the results including the systematic review of the studies collected.

Research Strategy

Meta-analysis/ Systematic Review, Prisma Charts

Sample

Secondary data (N=26 studies), global (across various countries).

Main Exposures

Body Image, Relationships, Hope

Sample Selection

The meta-analysis included secondary data that was used in the results and for further interpretation. Thus, to select the final studies to be included in the results and for the systematic review to be conducted, the inclusion and exclusion criteria is followed.

Inclusion Criteria

A study with the following inclusion criteria were included in the review:

- Studies which are published in English.
- Studies focusing on body image, relationships, and hope.

- The population or study sample must include females and breast cancer.
- Inclusion of studies with availability and access providing the required information.
- Studies giving information about interventions and their relation to the focused exposures.

Hence, the Inclusion Criteria was: Full- text articles in English focusing on issues related to body image, relationships and hope as observed in the breast cancer female population were eligible to be included in the study. The review included selection of 101 studies. Of these, 73 were excluded due to unrelated exposures, focus on a different sample, irrelevant information, and non-availability of access to fully required information. After further screening and scanning for the duplicates and irrelevant information 28 studies were included. Of these, 2 were excluded because they had incomplete information about the findings, or irrelevant and unrelated exposures. Finally, total 26 studies met all the inclusion criteria for the systematic review.

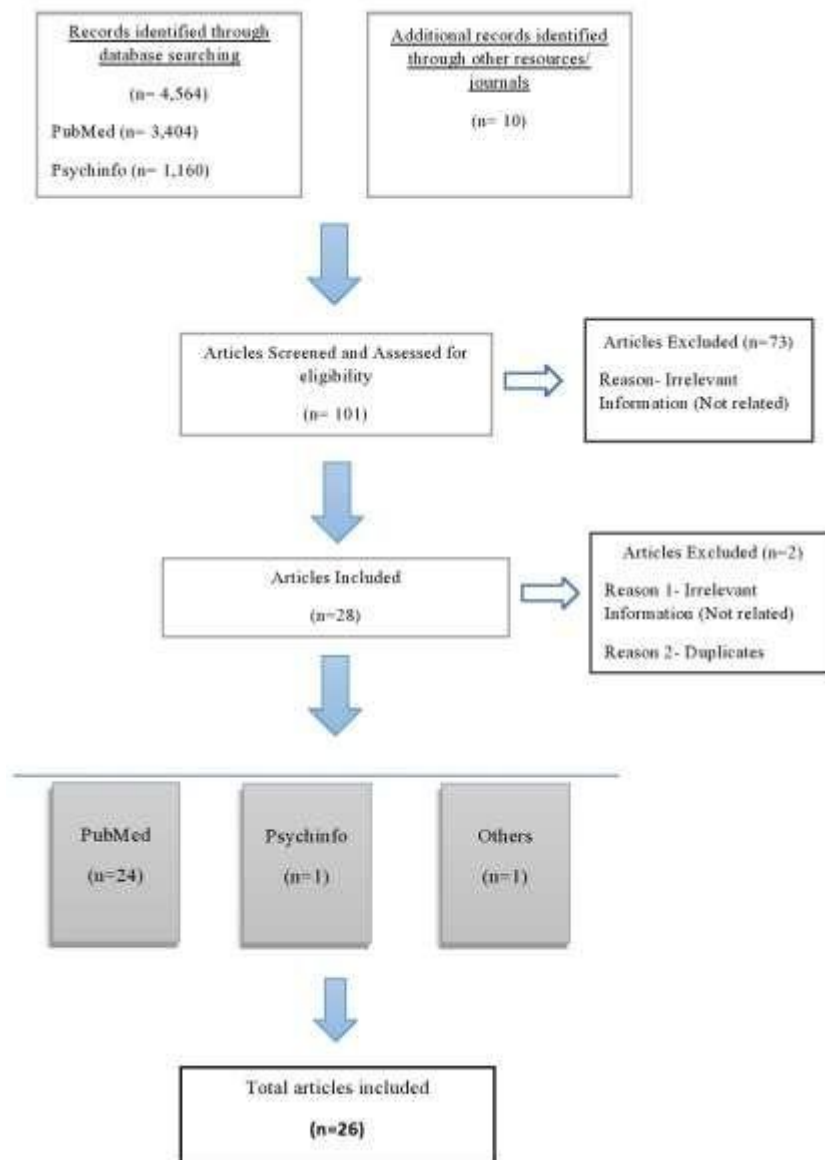
Procedure

Studies that had relevant information, proper sample size, research design, and appropriate exposures were focused. Cross-sectional, randomized control trial, and interview-based studies were included. Studies measuring exposures using the Body Image and Relationship Scale (BIRS), Survey Methods and other reliable and valid questionnaires were included. There was no limitation regarding the geographical restriction for the inclusion. The review includes a global population of breast cancer in females. Online database search was conducted by checking the available resources in various databases and other resources online available of particular durations. The exclusion criteria included irrelevant exposures, incomplete information about the outcome measures, and findings. The results were formulated in a tabular format showing the systematic review and then interpretation was done by forming a model and formulating the conclusion.

Data Collection

The meta-analysis included a literature search to identify the relevant articles available on PubMed, Psychinfo, and other online resources from 2013 till 2023. This was done to synthesize the evidence for various issues or symptoms observed or related to breast cancer including body image, interpersonal relationships, level of hope, perception of illness, psychological distress, etc. focusing globally. Studies that assessed breast cancer in females focusing issues related to body image, relationship, and hope as experienced globally were collected from a variety of sources. An electronic search of two databases using search terms like: body image breast cancer, interpersonal relationships breast cancer, hope breast cancer, etc. yielded 4,564 total results, after which a snowball search was performed and the reference list of each article obtained (electronic) was reviewed to identify the additional citations beyond the electronic search and conduct screening. **Prisma Charts** were used to explain the entire methodology from identification, screening, and selection of data.

Fig 1. PRISMA chart showing the search and screening process of the literature for the present meta-analysis.



Analytic Strategy

For summarizing and interpreting the findings a model was created to explain the studies and review of the studies was done.

Results

Table 1 showing the systematic review of the relevant literature

Author	Research Title	Population	Exposures	Findings
Chiu et al. 2023 https://doi.org/10.1016/j.ejon.2022.102254	Resilience among women with breast cancer surviving longer than five years: The relationship with illness perception and body image.	N= 106 (Females having Breast Cancer) China	Illness perception, Body image, Personality, and Resilience	Providing adequate information improves perception of breast cancer more positively turning the body image and ways of coping with survival life better.

Brunet et al. 2022 https://doi.org/10.1016/j.bodyim.2022.04.012	Body image in women diagnosed with breast cancer: A grounded theory study	N= 27 (Females, Breast Cancer) Canada	Body Image	Defining body image, illustrating intrapersonal and interpersonal factors that can undermine or support body image. Strategies used to manage body image.
Ettridge et al. 2022 https://doi.org/10.1016/j.bodyim.2021.11.001	Body image and quality of life in women with breast cancer: Appreciating the body and its functionality	N= 123 (Females, Breast Cancer) Australia	Body image, Quality of life, Body dissatisfaction, Body appreciation, Functionality appreciation	All body image measures are significantly associated with Quality of life with body dissatisfaction being its strongest predictor.
An et al. 2022 https://doi.org/10.1186/s12905-022-01635-y	Assessing the relationship between body image and quality of life among rural and urban breast cancer survivors in China	N= 354 (Females, Breast Cancer Survivors, Rural vs Urban) China	Body image, Mental well-being, Quality of life (QoL)	Body image is associated with physical and mental well-being (larger role in urban breast cancer survivors). Interventions focusing on body image issues can enhance QoL.
Panissi et al. 2022 https://doi.org/10.1080/07347332.2021.1981513	Effectiveness of a self-make-up program for Brazilian women with breast cancer	N= 152 (Females undergoing breast cancer treatment) Brazil	Anxiety, Depression, Self-esteem, Body image, and Coping strategies	The self-make-up program decreased anxiety, depression, improving self-esteem and satisfaction with the body and appearance (improved psychological variables). Program can be used adjuvant to treatment.
Daniel et al. 2022 https://doi.org/10.1007/s00520-021-06475-4	"So, when a woman becomes ill, the total structure of the family is affected, they can't do anything..." Voices from the community on women with breast cancer in India: a qualitative focus group study	N= 45 (Females, Breast cancer) India	Body image, Family role, Support, Faith, Community, Cultural background	Family and faith provide a strong support structure or cause distress in patients.
Li et al. 2022 https://doi.org/10.1177/10547738211046737	Quality of Life and Hope of Women in China Receiving Chemotherapy for Breast Cancer	N= 450 (Females, Breast cancer chemotherapy) China	Hope, Quality of life	A significant relation seen between quality of life and age, marital status, education level, chemotherapy cycle, and especially hope.

Cohen et al. 2022 https://doi.org/10.1002/cncr.34034	Hope and advance care planning in advanced cancer: Is there a relationship?	N= 672 (Breast cancer, lung cancer, etc.) U.S.	Hope, Advanced care planning (ACP), Advanced Cancer	Hope is not decreased after ACP and indeed may be increased.
Wu et al. 2021 https://doi.org/10.1002/nop2.884	Body image and hopelessness among early-stage breast cancer survivors after surgery in China: A cross-sectional study.	N= 211 (Females, Breast cancer) China	Body Image, Hopelessness	Higher scores for hopelessness post-surgery. Married participants showed lower scores in future subscale. Significant and positive association with a positive effect of body image on hopelessness. Women with positive body had lower levels of hopelessness.
Cai et al. 2021 https://doi.org/10.1097/ncc.0000000000000884	Dyadic Coping in Couples With Breast Cancer in China	N= 114 (Chinese couples, Breast cancer) China	Dyadic coping, Marital adjustment, Body Image, Treatment, Relationship Duration, Monthly family Income	The exposures (predicted coping) must be considered and evaluated when conducting interventions for couples with breast cancer.
Rosenberg et al. 2020 https://doi.org/10.1001/jamasurg.2020.3325	Association of Breast Cancer Surgery With Quality of Life and Psychosocial Well-being in Young Breast Cancer Survivors	N= 826 (Females, Breast Cancer) U.S. (North America)	Physical functioning, body image, sexual health, anxiety and depressive symptoms, quality of life	QOL improves over time. Extensive surgery causes worse body image, sexual health, and anxiety compared with young women (breast cancer survivors) undergoing less extensive surgery.
Yamani et al. 2020 https://doi.org/10.1111/ecc.13191	Body image and its relationship with coping strategies: The views of Iranian breast cancer women following surgery.	N= 180 (Females, Breast cancer) Iran (Southeast)	Body image, Coping Strategies	A significant relationship was observed between body image and coping strategies (positive rational acceptance was most frequent and favourable for a positive body image; least was avoidance). More coping strategies were used by women who felt worse about their own body image.
Alhusban et al. 2019 https://doi.org/10.31557/apjcp.2019.20.3.767	Changed Body Image as Perceived by Jordanian Women Undergoing Breast Cancer Treatment.	N= 20 (Females, Breast cancer) Jordan	Perceptions of changes to body image, Breast cancer treatment	Observed changes in: physical wellbeing (“my body fall apart”), emotional wellbeing (“broken heart”), social wellbeing (“broken future”), and coping strategies (“repairing what has been broken”). Religion and family support were major factors to help cope.

Todorov et al. 2019 https://doi.org/10.1002/pon.5187	Self-compassion and hope in the context of body image disturbance and distress in breast cancer survivors	N= 195 (Females, Breast cancer) Australia	Self-compassion, Hope, Body image distress, psychological distress	Therapy components including hope in addition to self-compassion can address body image and psychological distress concerns of females having breast cancer.
Faten et al. 2018 https://doi.org/10.1016/j.bulcan.2018.01.008	[Body image disorder in 100 Tunisian female breast cancer patients]	N= 100 (Females, Breast cancer) Africa (Tunisia)	Body image, Couple relationships, Sexual relations, Depression, Anxiety	Association of Body image disorder with family support, change in couple relationship, depression and anxiety were observed. Body image disorder and sexual dysfunction were interrelated: each fostering the prevalence of another.
Pierrisnard et al. 2018 https://doi.org/10.1007/s12282-017-0828-2	Body image and psychological distress in women with breast cancer: a French online survey on patients' perceptions and expectations	(Females, Breast Cancer)	Body Image	Altered body image (due to alopecia, loss of eyebrows/eyelashes, or mastectomy) is a major source of psychological distress in women with breast cancer.
Shaw et al. 2018 https://doi.org/10.1002/pon.4666	Factors associated with romantic relationship formation difficulties in women with breast cancer.	N= 152 (Females, Breast cancer) Australia	Romantic relationships, Dating anxiety, Interpersonal competence,	Un-partnered women with poor body image, low self-compassion, and placing high importance on appearance for their self-worth experience difficulties in forming new romantic relationships after breast cancer.
Prates et al. 2017 https://doi.org/10.1055/s-0037-1601453	Influence of Body Image in Women Undergoing Treatment for Breast Cancer	N= 90 (females with breast cancer) N= 77 (females without breast cancer) Brazil	Body image	More dissatisfied body image in women with breast cancer compared with those without breast cancer, particularly during chemotherapy or mastectomy. Dissatisfaction with body image affected the self-esteem negatively.
Cairo Notari et al. 2017 https://doi.org/10.1002/pon.4238	The protective effect of a satisfying romantic relationship on women's body image after breast cancer: a longitudinal study	N= 74 (Swiss patients, females, breast cancer)	Body image, Relationships	Women being satisfied in their relationship reported less body image disturbance than those dissatisfied. Married women had less body image disturbance.
Bahrami et al. 2017 https://doi.org/10.4103%2Fjehp.jehp_4_15	Evaluation of body image in cancer patients and its association with clinical variables	N= 210 Iran	Body Image	Cancer patients had body image disturbances without being associated with the type of cancer, kind of treatment and duration of illness. (Highlights importance of assessing and treating body image disturbance in cancer patients)

<p>Keesing et al.</p> <p>2016</p> <p>https://doi.org/10.1186/s12905-016-0337-z</p>	<p>A dyadic approach to understanding the impact of breast cancer on relationships between partners during early survivorship.</p>	<p>N= 8 (Female survivors of breast cancer)</p> <p>N= 8 (partners)</p> <p>Australia</p>	<p>Relationships</p>	<p>Many changes among couples regarding the previous roles, responsibilities and relationships during early breast cancer survivorship. Concerns reported about communication, intimacy and sexuality impacting interactions with each other.</p>
<p>Balsanelli et al.</p> <p>2016</p> <p>https://doi.org/10.1590/s0080-623420160000700004</p>	<p>Predictors of hope among women with breast cancer during chemotherapy.</p>	<p>N= 122 (Females, Breast cancer)</p> <p>Brazil</p>	<p>Hope, anxiety and depression, coping, fatigue, religiosity and self-esteem, pain</p>	<p>The increase of hope at the end of chemotherapy treatment was statistically significant (delay in beginning the treatment decreased hope, decrease of hope increased depression) with pain being the only predicting factor of hope (increased pain decreased hope). No significant alterations of fatigue and coping with variation of the hope score.</p>
<p>Fang et al.</p> <p>2015</p> <p>https://doi.org/10.1002/pon.3868</p>	<p>The moderating effect of perceived partner empathy on body image and depression among breast cancer survivors</p>	<p>N= 151 (Females, Breast Cancer)</p> <p>China (Southern Taiwan)</p>	<p>Body image, Partner Empathy, Depression</p>	<p>Empathy from a partner, body image on depressive symptoms shows significant relationship (More empathy resulted in fewer depressive symptoms). No significant relationship between empathy from a partner and body image.</p>
<p>Kurowecki et al.</p> <p>2014</p> <p>https://doi.org/10.1002/pon.3370</p>	<p>Wearing my heart on my chest: dating, new relationships, and the reconfiguration of self-esteem after breast cancer.</p>	<p>N= 15 (Female, breast cancer survivors)</p>	<p>Dating, Relationships, Bodily esteem</p>	<p>Potential of restoring the self and bodily esteem after dating and starting a new intimate relationship (which was earlier diminished by breast cancer) was observed.</p>
<p>Thornton et al.</p> <p>2014</p> <p>https://doi.org/10.1037/a0036959</p>	<p>Test of mindfulness and hope components in a psychological intervention for women with cancer recurrence.</p>	<p>N= 32 (Females, Breast cancer)</p>	<p>Hope</p>	<p>Treatment involving Mindfulness, Hope Therapy, and biobehavioral components decreased distress, anxiety, and increased hope, mental-health, quality of life.</p>
<p>Przedzick et al.</p> <p>2013</p> <p>https://doi.org/10.1002/pon.3230</p>	<p>My changed body: breast cancer, body image, distress and self-compassion</p>	<p>N= 279 (Females, Breast Cancer)</p>	<p>Body Image, Self-compassion, Anxiety, Distress</p>	<p>Body image disturbance and lower self-compassion increased psychological distress with a mediating role of self-compassion (high value relates to decreased body image disturbance)</p>

4. Discussion

The interpretation of the results shows that issues related to body image, interpersonal relationships, hope, and other factors like quality of life, mental health problems (anxiety, distress, depression, etc.) were common across the globe. In many countries these exposures are observed in breast cancer patients who have been recently diagnosed, are undergoing treatment or have survived cancer. The model below gives a brief summary of the findings.

Table 2 showing the model (Other Exposures observed globally are hopelessness, quality of life, mental health problems)

EXPOSURES	COUNTRY	NO. OF STUDIES
Body Image	China (5), Canada (1), Australia (1), Brazil (2), India (1), U.S. (1), Iran (2), Jordan (1), Africa (1)	15
Interpersonal Relationships	India (1), China (2), Africa (1), Australia (2)	6
Hope	China (2), U.S. (1), Australia (1), Brazil (1)	5

Body Image and Breast Cancer

Body Image can impact both the physical and psychological aspects or as they change along with the treatment of breast cancer as studied by Hormes et al., (2008). Also, more importance attributed to body image by younger women as compared to older patients leads to low levels of body image satisfaction and poor psychosocial adjustment after breast cancer surgery. Rosenberg et al., (2020) conducted a study in U.S. and observed that experience of surgery- bilateral mastectomy in young women suffering from breast cancer can impact their physical functioning, sexual health, levels of anxiety and depression, and body image. It was observed that there was improvement in quality of life but survivors had worse body image, anxiety, and sexual health after extensive surgery. In Tunisian women of Africa body image disorder has been observed as an independent predictive factor of depression and anxiety as per Faten et al., (2018). Women can also experience self-esteem issues due to body image. In a study by Prates et al., (2017) women with and without breast cancer were compared and higher dissatisfaction related to body image and appearance was noted in women with breast cancer or undergoing its treatment. Moreover, their self-esteem was negatively impacted.

Body image can indirectly affect the resilience and illness perception, acting as a mediator. According to a study conducted by Brunet et al., (2022) in Canada the breast cancer treatment can have major implication for the body image in women and can lead to negative self-judgement. A grounded theory of body image was formulated which posits that the following can either support or undermine a women's body image after diagnosis- psychosocial factors, treatment- related events (losing a breast, poor physical fitness, scarring, etc.) and sociocultural factors. Thus, experience of breast cancer is an assault on women's bodies that directly affect their self in terms of their perception of the self and self-judgement. Chiu et al., (2023) conducted a study in China to study how body image, resilience, perception of illness is related in women with breast cancer. Convenience sampling was used with various questionnaires. Pierrisnard et al., (2018) confirms that a critical psychosocial issue for women with breast cancer is altered body image using French online surveys. Their perception and expectations are affected by the management of alopecia, mastectomy, loss of eyelashes, etc. related to body image.

Major physical changes are experienced by women in breast cancer that impacts their body image and quality of life both. Ettridge et al., (2022) in his study explored both positive and negative body image in Australian women and found that body dissatisfaction is the strongest predictor of quality of life. Even in China an altered body image and quality of life is experienced by breast cancer survivors as per An et al., (2022). In this cross-sectional study rural and urban population was taken and it was noted that body image had a stronger association with physical and mental well-being more in the urban areas of China, as psychological change, role change, etc. were associated with better physical and mental well- being. According to a cross-sectional study by Wu et al., (2021) a relation between body image and hopelessness was observed. High level of hopelessness was seen in patients after surgery. But women who positively appraised their body image reported less hopelessness.

Changes in the body after treating breast cancer can lead to distress remains chronic. Ability to be kind towards self can help in adjusting to the physical changes. According to Przedzicki et al., (2013) increased psychological distress was associated with low self-compassion (mediating role) and body image disturbance. Moreover, self-compassion relates to lower body image distress as per Todorov et al., (2019). Breast cancer can impact a woman's life in multiple ways. Coping skills and a positive attitude is essential to survive the negative consequences of the disease. In Southeast Iran women favourable body image was reported for women who use a positive rational acceptance and positive attitude about their physical appearance and have positive coping skills as per Yamani et al., (2020).

A study done by Bahrami et al., (2017) states that body image disturbances occur in most cancer patients irrespective of cancer type, treatment methods, or duration of illness. Thus, this proves that it is crucial to assess body image disturbance in cancer patients to provide intervention for any type of cancer including breast cancer.

Interpersonal Relationships and Breast Cancer

Interpersonal relationships also play a major role in battle with breast cancer. Many changes are observed among couples regarding the previous roles, responsibilities and relationships during early breast cancer survivorship. Concerns are reported about communication, intimacy and sexuality impacting interactions with each other as per Keesing et al., (2016). According to a study conducted in South India by Daniel et al., (2022) psychological issues like body image, change of family role, and need for support relate in wider community, varying across cultural backgrounds. Family and faith provide key support but at the same time can also cause significant stress. In a study conducted by Alhusban et al., (2019) in Jordan, women's perception of changes to body image is affected by cancer treatment and religion and family support serve as the major coping factors for women suffering from the condition.

Un-partnered women who placed high importance on appearance for their self-worth, had poor body image, and low self-compassion reported difficulty in forming romantic relationships after breast cancer. They experienced high dating-related anxiety and low perceived interpersonal competence as per Shaw et al., (2018). **On the other hand**, quality interpersonal relationships can act as a major support system for breast cancer patients. Body image can negatively impact interpersonal relationships but Cairo Notari et al., (2017) observed the protective role of satisfaction in relationship on body image in women post-surgery. Women reported less body image disturbance when their relationship satisfaction was high. Similarly, in a study by Fang et al., (2015) in China, receiving partner empathy can result in fewer depressive symptoms for breast cancer patients. Also, dating and forming new intimate relationships can work efficiently to restore the self and bodily esteem of women that diminished due to breast cancer as per Kurowecki et al., (2014).

Hope and Breast Cancer

Hope is essential in patients experiencing breast cancer or undergoing treatment. Hope has been associated with a better quality of life, decreased pain and anxiety, high resilience, better coping skills, increased activeness in advanced cancer as per a U.S study by Cohen et al., (2022). In China also according to Li et al., (2022) apart from marital status, education level, cycle of chemotherapy, or age, an important aspect to determine the quality of life of women suffering from breast cancer or undergoing chemotherapy is hope.

If the levels of hope and self-compassion are high then lower psychological distress is observed in women suffering from breast cancer. A study done in Australia by Todorov et al., (2019) concludes that a combined therapy that is hope-focused and includes self-compassion can address body image and psychological distress. According to Balsanelli et al., (2016) factors of hope in patients with breast cancer and undergoing chemotherapy are delay in treatment, depression, self-esteem, and pain. Treatment delay can decrease hope which then increases depression.

Other Treatment and Intervention Options for Breast Cancer

There are various treatment and interventions available for breast cancer. Some have proven to be beneficial and effective as follows- Hope Therapy, Mindfulness, and other psychological interventions can attenuate distress and enhance coping in cancer patients or even in recurrence of cancer as per Thornton et al., (2014). Advance care planning and hope have been related to breast cancer patients positively in a study by Cohen et al., (2021). In randomized controlled trials by Tabrizi et al., (2016) a positive effect of supportive expressive discussion groups was seen on hope, quality of life, and loneliness. In Chinese couple dyadic coping has proven essential to promote marital adjustment (Cai, 2020). Cancer workshops (Shah, 2021) and even self-makeup (Panissi, 2022) have proven beneficial for women with breast cancer.

5. Conclusion

The results show how body image, interpersonal relationships, and hope are related to breast cancer in females from a global perspective. All the exposures and the findings were specified in the results with the population and geographical regions of the studies. Body image dissatisfaction, hopelessness, psychological issues like depression and anxiety are commonly studied and observed exposures with their negative associations seen in breast cancer patients. Interestingly, breast cancer can negatively affect relationships but some positive impacts of relationships were seen on coping with the disease. For example, receiving partner empathy in a study showed decrease in depressive symptoms. Moreover, A study done by Bahrami et al., (2017) stated the importance of considering body image disturbances in any type of intervention for any type of cancer irrespective of cancer type, etc.

Implications of this review are numerous. This review tries to examines the global symptoms and factors related to body image, relationships, and hope as seen in breast cancer patients. Some rarely used interventions were also included in the review as some studies suggested positive impact on their application. There is scope of further research focused in the areas of the exposures in terms of collecting more studies to explore the patterns seen globally, cultural aspects, or sub categorization of the sub factors associated with each exposure. More studies on male patients can be reviewed to get a larger and complete picture of the relation of body image, relationships, and hope among breast cancer patients. This can be used for comparing the related aspects between genders. A country-wise model can also be created by taking into consideration the studies done on particular countries to get a holistic overview of the exposures observed in each particular country during breast cancer, recurrence, treatment and intervention, etc.

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