A closer look at Self Esteem and Perceived Social Support: Their role in Depression among Women with Chronic Illnesses

Nasreen Bano  
Institute of Clinical Psychology, University of Karachi  

Salman Shahzad (✉️ shahzad_icp@yahoo.com)  
Institute of Clinical Psychology, University of Karachi  
https://orcid.org/0000-0003-2776-0248

Shafaq Ahmad  
Institute of Clinical Psychology, University of Karachi  

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A closer look at Self Esteem and Perceived Social Support: Their role in Depression among Women with Chronic Illnesses

stoa-support@springernature.com

Nasreen Bano¹, Salman Shahzad²* and Shafaq Ahmad³

¹Assistant Professor, Institute of Clinical Psychology, University of Karachi, Pakistan
²Associate Professor, Institute of Clinical Psychology, University of Karachi, Pakistan
³Assistant Professor, Institute of Clinical Psychology, University of Karachi, Pakistan

*Correspondence:
Salman Shahzad
shahzad_icp@yahoo.com

Abstract

Chronic illnesses not only bring physical strains but also affect one's psychological health. Long-term treatments and variations in severity demand psychological resources to cope up with these illnesses. Cancer and heart diseases are among those illnesses which are quite prevalent and tax one’s resources to fight with illnesses. A cross sectional study design was used to carry out this study which aims to find the predictive association of depression with self-esteem and perceived social support among women with chronic illness (breast cancer and angina). A sample of 102 women diagnosed with breast cancer (51) and Angina (51) with the age ranges between 30-60 years (Mean age = 47.6, SD=10.68), were taken. They were recruited from different hospitals including Sindh Government Hospital, Dar-ul-Sukoon and Dow university Hospital Karachi, Pakistan using purposive sampling technique.

Patients’ Health Questionaire-9, Rosenberg Self-Esteem, and Multidimensional Perceived Social Support was administered. Findings show that self-esteem has contributed to lowering depression in women diagnosed with cardiac illness (Angina) as well as cancer (breast Cancer). Perceived social support has a significant effect on depression in women with cardiac illness (Angina) however it has a non-significant contribution in the reduction of depression in women with cancer (breast cancer).

Keywords: Self-esteem; Multi-dimensional Perceived Social Support; Depression; Chronic Illnesses; Cardiac; Cancer

Introduction

Challenges to human health are increasing day by day, and chronic illnesses are the health conditions which are proliferating rapidly. Chronic illnesses are persistent disorders that affect a person’s functioning badly [1]. Health Service Executive [2] considers chronic illness to be a long-term illness that is difficult to cure but manageable. Chronic diseases are one of the leading causes of death, figures around the globe show about 17 million deaths by cardiovascular disease, 7 million deaths by cancer, 4 million cases with chronic lung diseases, and about 1 million deaths caused by diabetes mellitus [3]. In line with the physical infirmity of the diagnosed individuals, the psychological aspect of chronic diseases is far more lethal and negatively influences the quality of life.
A glance at the psychological aspect indicates depression as one of the most common psychological problems which is hampering the individual’s functioning significantly [4-5]. Several studies in different cultures show a high risk of depression with chronic physical conditions [6]. A study conducted by researchers Nitti and associates [7] found the association of depression with chronic illness in Asian adults and found depression to be one of the prevalent comorbid conditions of chronic illnesses. Findings also highlighted that the manifestation of depressive symptoms and the level of severity can be different in different chronic diseases. For example, women with the diagnosis of cancer show hopelessness which is an essential feature of depression [8-9]. Even with the very initial and less severe symptoms of cancer, individuals become fearful and hopeless, develop feelings of helplessness.

A study conducted by researchers Massie and Holland [10] found that women receiving treatment for breast and uterus cancer have a high level of psychological distress. Researchers conducted a study on Asian women that revealed a high level of depression linked with cancer [11]. In Pakistan, the prevalence of depression is 6% in the general population [12] as compared to a higher rate of depression (66%) in women diagnosed with cancer [13]. However, the interesting fact discovered was that the level of distress varies based on severity and the type of treatment, and even the individual differences were found to play a significant role. Numerous studies conducted show that fear and hopelessness are highly associated with pain associated with treatments like chemotherapies, surgeries, and radiations along with the fear of death in females with cancer [14-15].

Like cancer, depression has been a focus of attention in cardiovascular diseases. The majority of cardiac patients experience depression with difficulty regaining their previous activity level to resume a healthy lifestyle. Researchers conducted studies and found that mildly depressed mood in the absence of a major depressive disorder worsens the prognosis and adversely impacts the functioning of the individual with cardiac failure [16]. When compared, depression is 4-5 times more common in cardiac patients, and it is also considered to adversely affect the prognosis of heart problems [17]. These researchers further found that the risk for depression gets higher in elderly patients of ages 50 to 60 with moderate to severe depression. As literature shows high comorbidity of depression with chronically ill patients but the question arises, what can be the factors responsible for depression in this population? The answer to such a question is not very simple, however, there are several factors including physical, social, psychological, biological, and interplay of several factors that lead to such comorbidities. When compared with the consecutive phases, distress in women with cancer is severe immediately after being diagnosed. Getting a diagnosis of a chronic illness like cancer for the first time signifies a significant impact on the emotional as well as overall life balance [18].

Experiential studies have emphasized the individual's observation and perception linked to their capacities to deal with a stressful situation and considered self-evaluation as an elementary aspect in the preservation of life quality. Beck [19] highlighted that individual with negative self-perceptions is more vulnerable to depressive symptoms. In this regard the most frequently researched personal aspect is self-esteem. Enhancing the self-esteem of patients with breast cancer is one of the essential factors to reduce depressive symptoms as self-esteem works as a fundamental factor to maintain the quality of life when affected by depression [20]. Lower self-esteem in chronic illness is associated with distress and pain which causes helplessness. Low self-esteem patients with chronic illness are unable to fulfill the demands to adapt to the illness which creates a vicious cycle of negative affect and depression and in turn, it adversely impacts the appraisal of the illness and so on [21]. Self esteem is considered to play a significant role in life satisfaction and its connection with depression...
among patients with cardiovascular diseases. Qin and colleagues [22] found that 34% variance in depression by life satisfaction was accounted via self-esteem in cardiovascular patients.

In addition to personal variables, the literature also emphasized social connections and support to be one of the most important factors in the reduction of depression in these illnesses. Social support is connected with high self-esteem, which leads to optimism and consequently reduces the level of depression [23]. Social support is one of the multifaceted aspects which serve as buffers against stress and ensures well-being and emotional adaptability in patients with chronic illness [24-25]. Studies highlight the importance of family and friends in the favorable outcome of treatments of cancer and other chronic illness [26].

In light of the literature and previous researches, the present study aims to explore the significance of self-esteem and perceived social support from family, friends, and significant others during the diagnosis of one of the lethal chronic illnesses including breast cancer and patients with angina at the very initial stages in women. One of the most significant objectives in considering women as a sample of the study is as in developing countries like Pakistan, there are limited health care facilities, and the access to high quality health services is very difficult. If such services are available, then these are expensive enough and people often reluctant to avail these services, as they are unable to pay for those services. One of the other potential reasons is the reliance of a woman on a man in culture like Pakistan for most of their needs. As women are mostly dependent on their male guardians. If their male partner or a guardian is not available then they can’t get access to health care services on time, or get access to the healthcare facilities as the problem get severe enough to manage. In such circumstances diagnosis of even a minor health issue, women lose their autonomy and consider themselves worthless and more dependent and their mental health affects negatively.

The following hypotheses were formulated in the present study.

1. There would be a significant predictive association of self-esteem with depression in women with chronic illnesses (cancer: breast cancer and cardiac disease: angina).
2. There would be a significant predictive association of perceived social support with depression in women with chronic illnesses (cancer: breast cancer and cardiac disease: angina).

Materials and Methods
Sample

A cross sectional study design was used to carry out this study. A sample of 102 women diagnosed with chronic illness (i.e., Cancer with breast cancer =51 and Cardiac disease with Angina=51) were recruited for present study. Participants’ ages ranges between 30 to 60 years (Mean age =47.7 years; SD= 10.68). The sample was taken from both Government and Private sector hospitals including Sindh Government Hospital, Darul Sukoon and Dow university Hospital Karachi, Pakistan, using purposive sampling technique with the permission of the authorities and with the consent of the relevant consultants and women diagnosed with cancer and cardiac diseases.

Inclusion and exclusion criterion was established for the sample of the study, which is as follow;

- 30 to 60 years old women, diagnosed with breast cancer and angina were included by confirming the diagnosis from the reports and discussing with the relevant consultants.
- Women with initial stages of the illness and who were taking treatment for their medical problems were recruited.
• Patients who were under treatment (minimum of one month but less than one year) for their respective illnesses were included.

• Only those women who were diagnosed with angina and breast cancer were included in the sample.

• Those patients who contacted consultants for the first time but were with the advanced stage of illness were excluded.

• Women with cancer under gone mastectomy were excluded from the study sample.

• Married women diagnosed with breast cancer and cardiac diseases (angina) who were currently living with their husbands were included.

• Participants, who were separated, divorced, and or widows were excluded from the study.

• Women with pre-existing mental disorders and other physical diseases (i.e., arthritis, diabetes, and asthma) or disability were excluded from the study.

Measures

The Patient-Health Questionnaire-9 (PHQ-9)

This is a clinical scale to screen out depression with nine items ranging from 0-3. This scale is intended to use with physical health problems, commonly used in the medical field. It has nine diagnostic items from the Diagnostic and Statistical Manual of Mental Disorders [27] for Major Depressive Disorder [28-29]. Total scores on the PHQ-9 range from 0-27 with severity levels ranging from mild (5-10), moderate (10–14), moderately severe (15–19), and severe (20–27). PHQ-9 is a psychometrically sound instrument with good reliability and validity. The Urdu translated version of PHQ-9 [30], was used in this study, which is highly associated with the Aga Khan University Anxiety and Depression Scale [31] indicating a correlation of r=.80, p<.01, and a Cronbach alpha of .87 showing high internal consistency. The split-half reliability of the scale (.89) shows its reliability when the items are divided into odd and even halves. In current study, the Chronbach alpha obtained for PHQ was .799.

Rosenberg Self Esteem Scale (RSES)

It measures global self-esteem. It is a four-point Likert scale with 10 items. The responses range from 'strongly agree' to 'strongly disagree. Few items are reversed scores. The scores range from 0 to 30. This is extensively used in researches with good psychometric properties [32]. For the present study, the translated version of the Rosenberg Self Esteem Scale [33] was used. This is extensively used in researches with good psychometric properties test-retest correlations are typically in the range of .82 to .88, and Cronbach's alpha for various samples are in the range of .77 to .88 [34-35] internal consistency was 0.77, minimum Coefficient of Reproducibility was at least 0.90 [36]. Test-retest reliability for the 2-week interval was calculated at 0.85, the 7- month interval was calculated at 0.63 [37]. RSES scores correlated with depression (r=.65) and anxiety (r=.71) in an ABI population [38]. Significant negative correlation with positive view of self, measured using the Head Injury Semantic Differential Scale-III, (r=−.365) has been reported [39]. In current study, the Chronbach alpha obtained for RSES was .718.

The Multidimensional Perceived Social Support (MPSS)

It is a valid 12-item developed by Zimet and colleagues [40] measure used to evaluate perceptions about support from family, friends, and a significant other. The items are divided into factor groups relating to the source of support, with scores ranging from 1 to 7. High scores indicate
high levels of perceived support. For the current study with patients of chronic illness, the Urdu translation of MPSS [41] was used. The internal consistency (Cronbach's alpha) of MPSS was 0.92. It represents good construct validity and internal consistency. In current study, the Chronbach alpha obtained for PHQ was .844.

Procedure

A permission letter with detailed objectives of the study along with all the questionnaires and measures were provided to the authorities of different hospitals and clinics. After obtaining approval from authorities, the researcher consulted the oncologists and the cardiologists to confirm the diagnosis and recruit the sample. Patients were then approached. A written, as well as verbal consent, was taken from the patients or from the caregivers to take part in the study as per requirement. Only those patients and their family members or caregivers who were willing to participate in the study were then brief about the study objectives. Researchers established rapport with the participants individually and assess them based on pre-established inclusion and exclusion criteria. Those patients who were not fulfilling the inclusion criteria were excluded from the study procedure. An open discussion and interviews were scheduled with each participant to get the responses on the scales so that the patients may not feel overburdened and also can discuss their feelings without any fear of judgment. First, the semi-structured demographic form describing age, socioeconomic information, presenting problems, medical history, history of the problem, family, social/ friendship history was then filled. The Patient-Health Questionnaire-9, Multidimensional Perceived Social Support, and Rosenberg Self-Esteem Scale were rated. The participants were appreciated with thanks for their participation in the study. They were also provided with the email addresses to contact for any query, feedback, and related concerns. The administered scales were then scored according to the set criteria and were ready for the statistical analysis. The researcher administered all measures in individual session, during their visits to hospital. The average time taken to complete these measures was 15-20 minutes with each participant.

Researcher has openly addressed their concerns and the willingly participated patients in the study were given a right to withdraw the study without any loss. Researcher has discussed and arranged required lecture sessions for the families and patients related to different psychological concerns. Many of the women with mild depressive symptoms were counseled and most of the women with severe depression were referred to psychologists and helped them in their appointments.

Statistical Analysis

Statistical Package for Social Sciences (SPSS-V. 21) was used to statistically analyze the data. Descriptive statistics (frequencies, percentages, mean, standard deviations, and confidence intervals) were used to analyze the characteristics of the sample. Multiple Regression analysis was used to examine the predictive association of self-esteem and multidimensional perceived social support with depression among women with chronic illness (cardiac and cancer patients in the initial stages). Monthly income for patients with Cardiac issues was from PKR 27500.00- 540000.00 (M=77725.49) for Cancer patients was from PKR39000.00-120000.00 (M=80735.29), and the total sample it was from PKR 27500.00-540000.00 (M = 79230.39)

Results

Table 1 refers to the demographic characteristics along with severity of depression of the sample including 102 women (n=51 Breast Cancer and n=51 Angina). The mean age of the entire sample is
47.6 with the mean age of 46.0 for cancer and mean age of 49.0 Cardiac patients. The severity level of depression in Table 1 shows severe depression on PHQ-9, 34.6% (f=18) in women diagnosed with cardiac (Angina) and 50.9% (f = 50) in women diagnosed with Breast Cancer.

Analysis of multiple regression indicates (Table 2) a significant model of the study (F=16.400, p<0.05). The predictive variables of RSE and MPSS are highly associated with each other (R=.637) and contributed to 40.6% (R^2=.406) change in depression in women with cardiac illness. Results indicate self esteem to be more influential (B=-.306, beta=-.304, t=-2.257, p<.05) as compared to multidimensional perceived social support (β=-.161, Beta=-.415, t=-3.080, p<0.05) to determine depression in cardiac illness (Table3). In addition, findings (Table 4) consider significant others (intimate partners) (β = -217, Beta = .285, t = -.2.327, p<0.05) as compared to family (β = -.177, Beta = -.225, t = -1.754, p>0.05) and friends (β = -.033, Beta = -.030, t = -2.224, p>0.05) during the stress of their illness in cardiac patients. The predictive variables of RSE and MPSS For cancer patients are also significantly associated with each other (R=.524) and contributed to 27.4% (R^2=.274) change in depression in women with cancer. Results indicate self esteem to be a significant predictor of depression in a sample of cancer women (B=-.430, beta=-.130, t=-3.296, p<.05) (Table 6), as compared to multidimensional perceived social support (B=-.080, beta=-.054, t=-1.475, p>0.05) to determine depression in cancer.

Table 1 Demographic characteristics and level of depression of the women with chronic illnesses (N=102).

<table>
<thead>
<tr>
<th>Variables</th>
<th>Cardiac</th>
<th>Cancer</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ages</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>%</td>
<td>N</td>
<td>%</td>
</tr>
<tr>
<td>30-40years</td>
<td>12</td>
<td>23.5</td>
<td>21</td>
</tr>
<tr>
<td>41-50years</td>
<td>15</td>
<td>29.4</td>
<td>13</td>
</tr>
<tr>
<td>51-60years</td>
<td>24</td>
<td>47</td>
<td>17</td>
</tr>
<tr>
<td>M</td>
<td>SD</td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>49</td>
<td>9.512</td>
<td>4611.646</td>
<td>47.610.681</td>
</tr>
<tr>
<td>Income group</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>18</td>
<td>35.3</td>
<td>21</td>
</tr>
<tr>
<td>Middle</td>
<td>27</td>
<td>52.9</td>
<td>21</td>
</tr>
<tr>
<td>Upper middle</td>
<td>6</td>
<td>11.8</td>
<td>9</td>
</tr>
</tbody>
</table>
Family Structure

Nuclear 20 39.2 23 45.1 43 42.16
Joint 31 60.8 28 54.9 59 57.84

Severity Level for Depression

<table>
<thead>
<tr>
<th>Severity Level</th>
<th>F %</th>
<th>F %</th>
<th>F %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mild (5-10)</td>
<td>00</td>
<td>00</td>
<td>00</td>
</tr>
<tr>
<td>Moderate (11-15)</td>
<td>11</td>
<td>21.5</td>
<td>5</td>
</tr>
<tr>
<td>Moderate-Severe (16-20)</td>
<td>15</td>
<td>29.5</td>
<td>19</td>
</tr>
<tr>
<td>Sever (21 and above)</td>
<td>25</td>
<td>48.9</td>
<td>27</td>
</tr>
</tbody>
</table>

Table 2 Summary of multiple regression analysis of self-esteem and perceived social support as predictors of depression among women with cardiac illnesses.

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R²</th>
<th>AdjR²</th>
<th>Df</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.637</td>
<td>.406</td>
<td>.381</td>
<td>48</td>
<td>16.400</td>
<td>.000</td>
</tr>
</tbody>
</table>

Predictors: (constants), RSE (Rosenberg Self-Esteem), MPSS (Multidimensional Perceived Social Support Scale)

Table 3 Summary of coefficients of multiple regression analysis of self-esteem and perceived social support as predictors of depression among women with Cardiac Illness.

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficient</th>
<th>Standardized Coefficient</th>
<th>T</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>SE</td>
<td>Beta</td>
<td>T</td>
</tr>
<tr>
<td>-------------------------</td>
<td>-------</td>
<td>------</td>
<td>------</td>
<td>-------</td>
</tr>
<tr>
<td><strong>Constant</strong></td>
<td>29.161</td>
<td>1.777</td>
<td>16.407</td>
<td>.000</td>
</tr>
<tr>
<td><strong>RSE</strong></td>
<td>-.306</td>
<td>.136</td>
<td>-.304</td>
<td>-2.257</td>
</tr>
<tr>
<td><strong>MPSS</strong></td>
<td>-.161</td>
<td>.052</td>
<td>-.415</td>
<td>-3.080</td>
</tr>
</tbody>
</table>

**Note:** RSE (Rosenberg Self-Esteem), MPSS (Multidimensional Perceived Social Support)

Findings in Table 3 (B = -.306, beta =-.304, t =-2.257, p<.05) indicate that one-unit increase in self-esteem, decreases depression seems to 306 units while a unit increase in perceived social support (β =-.161, Beta =-.415, t =-3.080, p<0.05) decreases depression to 161 units.

**Table 4** Summary of coefficients of multiple regression analysis of self-esteem and components of social support (Significant Others, Family and Friends) as predictors of depression among women with Cardiac Illness.
<table>
<thead>
<tr>
<th></th>
<th>B</th>
<th>SE</th>
<th>Beta</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>28.696</td>
<td>1.817</td>
<td>15.796</td>
<td>.000</td>
<td></td>
</tr>
<tr>
<td>RSE</td>
<td>-.370</td>
<td>.142</td>
<td>-.368</td>
<td>-2.605</td>
<td>.012</td>
</tr>
<tr>
<td>SO</td>
<td>-.217</td>
<td>.093</td>
<td>-.285</td>
<td>-2.327</td>
<td>.024</td>
</tr>
<tr>
<td>FAM</td>
<td>-.177</td>
<td>.101</td>
<td>-.225</td>
<td>-1.754</td>
<td>.086</td>
</tr>
<tr>
<td>FRD</td>
<td>.033</td>
<td>.146</td>
<td>.030</td>
<td>.224</td>
<td>.824</td>
</tr>
</tbody>
</table>

**Note:** RSE (Rosenberg Self-Esteem), SO (Significant Others), FAM (Family), FRD (Friends)

Findings in Table 4 shows a significant change in depression via self-esteem ($\beta = -.370$) and Significant Others as a component of perceived social support show significant effect on depression ($\beta = -.217$) however, Family ($\beta = -.177$) and Friends ($\beta = -.033$) in women diagnosed with cardiac illness.
Table 5 Summary of coefficients of multiple regression analysis of self-esteem and perceived social support as predictors of depression among women with Cancer.

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>$R^2$</th>
<th>Adj$R^2$</th>
<th>Df</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.524</td>
<td>.274</td>
<td>.244</td>
<td>48</td>
<td>9.080</td>
<td>.000</td>
</tr>
</tbody>
</table>

Predictors: (constants), RSE (Rosenberg Self-Esteem), MPSS (Multidimensional Perceived Social Support Scale)

Table 6 Summary of coefficients of multiple regression analysis of self-esteem and perceived social support as predictors of depression among women with Cancer.

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficient</th>
<th>Standardized Coefficient</th>
<th>T</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>B</td>
<td>SE</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td></td>
<td>28.949</td>
<td>2.295</td>
<td>12.611</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>RSE - .430</td>
<td>.130</td>
<td>-.429</td>
<td>-3.296</td>
</tr>
<tr>
<td></td>
<td>MPSS -.080</td>
<td>.054</td>
<td>-.192</td>
<td>-1.475</td>
</tr>
</tbody>
</table>

Findings in Table 6 (B=-.430, beta=-.130, t=-3.296, p<.05) indicate that one-unit increase in self-esteem, decreases depression seems to 430 units while a unit increase in perceived social support (β=-.080, Beta=-.054, t=-1.475, p<0.05) has an insignificant change of 080 units in depression.

Table 7 Summary of coefficients of multiple regression analysis of self-esteem and components of social support (Significant Others, Family and Friends) as predictors of depression among women with Cancer.

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficient</th>
<th>Standardized Coefficient</th>
<th>T</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Running Title

<table>
<thead>
<tr>
<th></th>
<th>B</th>
<th>SE</th>
<th>Beta</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>29.149</td>
<td>2.375</td>
<td>12.273</td>
</tr>
<tr>
<td>RSE</td>
<td>-.433</td>
<td>.133</td>
<td>-.431</td>
</tr>
<tr>
<td>SO</td>
<td>-.112</td>
<td>.121</td>
<td>-.135</td>
</tr>
<tr>
<td>FAM</td>
<td>-.006</td>
<td>.122</td>
<td>-.007</td>
</tr>
<tr>
<td>FRD</td>
<td>.142</td>
<td>.130</td>
<td>.139</td>
</tr>
</tbody>
</table>

Note: RSE (Rosenberg Self-Esteem), SO (Significant Others), FAM (Family), FRD (Friends)

Findings in Table 7 shows a significant reduction in depression via self-esteem ($\beta = -.433$) however, the components of perceived social support show non-significant effect on depression ($\beta = -.112$ via Significant Others, $\beta = -.006$ via Family and $\beta = -.142$ via Friends) in women with cancer.

Discussion

The present study aimed to elucidate the role of self-esteem and perceived social support as significant predictors of depression in women diagnosed with chronic illnesses (i.e., Cardiac & Cancer). Analysis revealed that 52% of women diagnosed with breast cancer experience severe levels of depression and about 48% of women with angina experience severe levels of depression. The overall analysis indicates that 15.68% of women diagnosed with chronic illness experience moderate-severe levels of depression (Table 1). These findings are in line with findings of other Asian countries. A study conducted in Thailand [42] showed that 16.7% of women diagnosed with breast cancer reported being depressed. Similarly, a recent study conducted by Purkayastha and associates [43] found that 21.5% of patients diagnosed with breast cancer experience depression. Other studies conducted in Turkey, revealed that 27.7% of women diagnosed with cancer show moderate depression while 19.5% of the females have severe depression [44].

A study conducted by Khan and colleagues in Pakistan showed that women with cardiac problems frequently experience severe levels of depression. Findings of the current study in addition to previous literature by Chen and associates in china indicate that the diagnosis of any chronic illnesses (i.e., cancer) adversely affects mental health such as depression, and also challenges their ability to cope with the diseases. In the Pakistani context, self-esteem and social support have a significant role in mental health and specifically in depression. The findings of the study (see Table 2) show a significant correlation among the predictive variables in women diagnosed with cardiac issues ($R = .637$) and an overall 40.6% ($R^2 = .406$) change in depression was contributed by self-esteem and perceived social support with a significant model of the study ($F = 16.400$, $p < .05$). Findings show that both self-esteem and perceived social support have a significant predictive association with depression, however results ($B = -.306$, beta = -.304, $t = -2.257$, $p < .05$) indicate that self-esteem is slightly more influential than perceived social support ($\beta = -.161$, Beta = -.415, $t = -3.080$, $p < .05$) to
determine depression (see Table 3). When there is a one-unit increase in self-esteem, depression seems to decrease by 306 units while a unit increase in perceived social support decreases depression to 161 units. The study findings are supported by robust pieces of evidence from past researches like Qin and colleagues. The findings of the study (see Table 5) also shows a significant correlation among the predictive variables ($R^2=.274, F=9.08, p<0.05$) variance in Depression was explained by self-esteem and perceived social support in women with cancer which signifies the fitness of the study model. The coefficients of this model of the study highlighted self esteem to be a significant contributor to depression in women with cancer ($B=-.430, \beta=-.130, t=-3.296, p<.05$) (see Table 6).

Self-esteem is believed to be one of the most important factors associated with depression in women diagnosed with cancer [45]. The potential explanation for low self-esteem in these women causing depression can be due to the treatment regime they receive like chemotherapies which alter the body such as removal of the breast and a significant hair fall, leading not only to a low level of self-image but also effects their inclusion in social circles and to maintain their intimate relationships. These reactions of the diseases and the associated treatment results in negative schemas related to self, causing them to be depressed. Similarly, study findings by Sharma and colleagues Sharma and colleagues [46] highlighted that in cardiac patients' higher level of self-esteem significantly lowers the level of depression. This association can be explained in a way that positive self-esteem is linked with mental well-being, pleasure, adaptability in situations, success, accomplishments, and satisfaction, on the other hand, low self-esteem can lead to undesirable consequences like depression Sharma and colleagues.

Taking into account the study findings, perceived social support also exerts a significant role in the alleviation of depression. Similar results were shown by previous other researches and considered social support as a mechanism that produces hope and optimistic beliefs which has a favorable outcome on health. A high level of social support helps the individuals to believe that they can control their illness which reduces the disease-related distress and pain and inculcates hope for healthier outcomes [47]. Social support was found to be associated with reduced depressive symptomatology [48]. This is related to the belief that social support improves psychological well-being by fulfilling an individual's belongingness and reducing loneliness and depressive symptomatology [49]. In cultures like Pakistan people prefer to live in joint family setups and look after others' needs and problems. The stressful circumstances, therefore, need social support to be handled appropriately. People have expectations from others to gain support during the time of stress, and the availability of support has a desirable influence on the psychological wellbeing hovering the sufferer’s optimistic beliefs. However, the unavailability of social support makes them hopeless and this could increase the risk of depression. Moreover, a deep analysis of the components of perceived social support in the current study in cardiac patients reveals significant others (intimate partners) ($\beta = .217, \text{Beta} = .285, t = -2.327, p<0.05$) as compared to family ($\beta = -.177, \text{Beta} = -.225, t = -1.754, p>0.05$) and friends ($\beta = -.033, \text{Beta} = -.030, t = -.224, p>0.05$) are considered to be more helpful during the stress of such illness. Previous findings obtained by Sharma and colleagues also had stressed the importance of significant others in the time of illness as people living with partners experience depression in the face of stressful situations in comparison to being alone.

In contrary to the cardiac patients findings related to women diagnosed with cancer ($B=-.080, \text{beta}=-.054, t=-1.475, p>.05$), reveal that the perception of social support is not very significant in the determination of depression (see Table 6) i.e., there is a very insignificant decrease of 080 units of depression with perceived social support. The findings of the study related to cancer women can be explained that the families or other care givers get anxious about the diagnosis of illness like cancer
therefore the diagnosed women are mostly not comfortable to seek social support. Women diagnosed with cancer don’t share problems related to the illness with family and friends as they experience them to be anxious [50]. Moreover, some patients consider support extended by the family as overprotection and regard it to be overreaction and challenge to their openness. Inadequate social support is mostly responsible for emotional distress [51-52] consequently a poor adaptability to the situation [53]. Furthermore, people with chronic health issues such as cancer are going through sufferings and severe depression, and even when they receive support from the environment, they are unable to acknowledge, hence it does not reduce the intensity of illness. They consider the social support as sympathy, and get irritable for receiving support and shut down the entry to receive support from the environment. This could be because of the nature of illness where patient feels helpless and thinks that their life is going to be ended. One of the possible reasons for such findings in a country like Pakistan can be that people with the diagnosis of chronic illness may have certain physical limitations and they consider themselves dependent on others. In such conditions, they feel themselves to be a burden on others and worthless and have a fear that other people in family or friends may get judgmental and evaluate them negatively. Most of the sample also has shared their feelings like “I am a burden on others and this is the worst condition I have ever gone through”, "I prefer to have an end of my life rather than depend on others and to cause extra work for them.” Such feelings cultivate helplessness and hopelessness and consequently suffer from depression.

Like other studies present study has few limitations. The tools used in the study are quantitative so the qualitative indicators of these variables should be obtained in future researches. Further, this study was conducted using cross sectional design, patients with chronic illnesses (cardiac & cancer), and the temporal association between the outcome and the exposure could not determine. And the important limitation is the small sample size, so we recommend inclusion of more females by including male patients with these health conditions and should see the difference between groups on the variables of self esteem, social support and depression. The differences between cancer as well as cardiac women were not compared for the level of depression, self esteem and perception of social support.

The effects of different treatments or drugs which have potential impacts on the depression were not studied. Women with different types of cancer or heart issues can be studied for further studies. Different durations for the illness can also have different effect on the levels of depression, self esteem and perception of social support, which is one of the greatest limitations of the study.

Conclusions

The findings of the study in line with prior researches revealed that self-esteem and perceived social support is significant predictors of depression in women diagnosed with chronic illness. To sum up the study findings it can be stated that the occurrence of intimidating chronic illness in general and cancer and cardiac problems in particular, is alarming all over the world and in Pakistan, it is proliferating very fast. These illnesses have not only limited physical health but also influenced the psychological wellbeing of women. The diagnosis of these illnesses is a stigma in cultures like Pakistan, due to which the diagnosed women critically evaluate themselves and confine their social interactions. So, chronic illness becomes a key stressor to limit self-sufficiency and independence as a consequence of feelings of helplessness and hopelessness. The diagnosed population is thus overwhelmed by irrational thoughts and is predisposed to get negative feedback and to negatively evaluate their abilities. As a result of their self-disparaging thoughts and a strong feeling of inadequacy they mainly isolate themselves from the social connections and show difficulty in gaining satisfactory acceptance and approval in a social group. Thus, low self-esteem and perception of lack of social support is detrimental to well-being and cultivate hopelessness with no interest in life.
Based on the findings understanding these factors can better help planning of treatments for the patients with the prevailing mental health problems associated with the chronic illness.

Declaration

Ethical approval and consent to participate

The study was conducted according to the guidelines of the Declaration of Helsinki and approved by the Departmental Ethical Review Committee, Institute of Clinical Psychology, and the University of Karachi. (NO: ICP-1(101)/1040-A, November 19, 2018).” Written Informed consent was taken and signed by all participants.

Consent for publication (Not applicable)

Availability of data and materials

Data can be provided by the corresponding author if needed without any due reservation.

Competing interests

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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Authors' contributions

Conceptualization, NB; Formal analysis, NB and SS; Methodology, NB and SS; Writing-original draft, SS and SA; Writing-review & editing, SS and SA. All authors have read and agreed to the published version of the manuscript.

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