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SOCIO DEMOGRAPHIC DETERMINANTS OF PERCEIVED QOL IN BREAST CANCER SURVIVORS

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ABSTRACT

Quality of life (QoL) of breast cancer survivor's (BCS) affected by the diverse sociodemographic factors. A descriptive Cross-Sectional study was carried out to investigate the contribution of sociodemographic factors in affecting QoL of BCS. The current study evaluated demographic Information included personal, familial, educational and occupational characteristics of women diagnosed with breast cancer with diverse socio-demographic factors that included age, marital status, education, and financial condition, family backgrounds and work status/ employment etc. A sample of breast cancer survivors (N=150) was recruited using non-probability purposive sampling from different public and private sector cancer hospitals of Lahore. Findings indicated that age, education, financial status and marital status have its relationship with QoL among BCS.

Keywords: *Breast Cancer, Breast Cancer Survivors, Quality of Life, Sociodemographic Determinants*

INTRODUCTION

Quality of life (QoL) is a subjective concept that can be examined from the patient's point of view. Oncological treatment is based on the use of effective therapy approaches while maintaining a high QoL (Ahadzadeh & Sharif, 2018). Identifying socio demographic backgrounds and profiles of patients can facilitate an understanding the impact and extent to which these factors tend to affect the perceptions of QoL. Such factors that determines women's QoL with BC can offer activity directions to guarantee acceptable comfort of life for BCS. Socio-demographic characteristics can differ among samples as predictors of QoL.

Age plays a role in breast cancer survivors' reported quality of life, psychosocial well-being, and choice of therapy. In the survey conducted by Daldoul et al. (2018), there was no substantial association between the age of patients and their QoL. However, the majority of research revealed that being young (less than 50 years old) was a predictor of lower QoL (Zainal et al., 2013). BCS below fifty were more likely to choose aggressive therapy compared to their older counterparts, who often opted for less disruptive treatment to improve their QoL. Despite this, older BCS frequently received inadequate care, particularly regarding adjuvant chemotherapy, which could reduce overall survival since QoL significantly influences treatment adherence to recommendations (Leinert et al., 2016).

In a study published by Sio et al. (2014), QoL and the effects of patient age on treatment options and other selection-influencing variables were evaluated in a group of BCS. The findings revealed

that age played a role in treatment choices and QoL. According to Sharma & Purkayastha (2017), age substantially impacts the QoL of BCS. Wockel et al. (2017) also emphasized the low QoL among young individuals, and Park et al. (2011) reported that older patients under fifty years of age exhibited considerably poorer QoL than their younger counterparts.

Similarly, Dialla et al. (2015) found that compared to younger breast cancer patients, older women had lower QoL and fewer social support options. Maurer et al. (2021) reported that older survivors' Health-Related Quality of Life (HRQoL) rarely improved over time, and the negative effects were less severe, whereas younger survivors' HRQoL largely improved from the five to ten years follow-up but remained negatively affected for most functioning and symptom measures.

To determine the age and stage of BC, another retrospective, descriptive investigation was carried out in Pakistan. The findings revealed that BC is diagnosed in Pakistan at a younger age group, at least ten years earlier than in the West, and at an advanced stage, with stage two being the most prevalent (Somro et al., 2018). There seems to be variation in the impact of age on the survival of women with early BC by BC subtype. Women with luminal BC are likely to have a particularly favorable diagnosis when they are young (Cai et al., 2020). Hamelinck et al. (2017) described that age was an important factor for physicians to recommend treatment for BC. Age was observed to be negatively correlated with QoL in breast BCS, as revealed in a descriptive correlational study (Yousuf et al., 2023).

Kumar et al. (2016) stated that a significant portion of patients presented at younger ages and in later stages. Similar results from a different study conducted in Arab nations were also reported in comparison to the West (Imran et al., 2019). Among BCS, younger age was also linked to a higher fear regarding the recurrence of cancer (Lebel et al., 2013). Whereas Ziner et al. (2012) also reported that BCS at a younger age upon diagnosis had a significantly greater fear of recurrence.

Another sociodemographic factor reported in the literature was marital status, as it had a significant impact on the QoL of BCS. Married women are less likely than single women to receive an early diagnosis (Saeed et al., 2021). It is linked to survival in women with BC at all stages, with unmarried women dying at higher rates (Hinyard et al., 2017).

Results reported by Koneieczny et al. (2020) indicate that women in relationships had better QoL scores, with greater functional scale scores and less severe symptoms, cognitive performance, and outlook. Previous research has shown that married patients benefit from greater mental and financial support, better compliance, early diagnosis, and more appropriate treatment options, all of which can extend their survival (Saghara et al., 2015).

After controlling for demographics, stage, and treatment, another study found that married patients had lower rates of metastatic disease presentation, higher rates of receiving curative treatment, and lower rates of cancer-related death. (Aizer et al., 2013). Marital satisfaction was also linked with better QoL among BCS (Shafaie et al., 2019). While a similar study conducted upon BC QoL reported no association with marital status (Musarezaie et al., 2015). Being divorced had a substantial impact on lower QoL and negative body image compared to survivors who remained married, even though many of the research cited above addressed marriage's significance in QoL (Kang et al., 2021). According to Gangane et al. (2017), psychological health and social relationships are negatively correlated with being divorced, widowed, or single. Similarly, patients who were divorced or widowed also had impaired physical functioning, according to Al Zahrani et al. (2019). Differences in financial resources only partially account for the worse survival of single cancer patients compared to married people (Lai et al., 2020)

Financial status is also an important sociodemographic factor. At every time point of the study, a rise in economic events was strongly linked to lower QoL (Meneses, 2014). Bauer et al. (2008) also reported the same findings, as late-stage breast cancer at diagnosis and the type of treatment administered were linked to low socioeconomic status. This delay in seeking

treatment can be explained due to limited available economic resources (Gulzar et al., 2019; Khan et al., 2015). Unfortunately, not all women will benefit equally from improvements in BC screening and treatment. After receiving a BC diagnosis, women who reside in areas with high percentages of poverty and low levels of education had worse survival rates. These discrepancies in terms of socioeconomic status at the community level may be brought about by a number of variables, such as variations in screening practices, tumor aggressiveness, lifestyle choices and environmental exposures, and treatment accessibility (Sprague et al., 2011). Lower socioeconomic status can be a predictor of poorer BC health consequences and treatment procedures (Schubbe et al., 2021).

Treatment regimens are significantly influenced by socioeconomic status (SES). After Breast-Conserving Therapy (BCT), sentinel lymph node biopsy along with radiation were less common among low SES women than among high SES women. The likelihood that poor women would undergo any axillary surgery and adjuvant chemotherapy was similarly lower than that of high SES women. Between women of low SES and those of high SES, there were no appreciable variations in the usage of aromatase inhibitors (AI). However, poor women who started hormone therapy were more likely to rely only on tamoxifen and less likely to utilize the more costly but more powerful AI when compared to both poor and high SES women (Dreyer et al., 2018).

BC incidence is much greater in women with higher SES, which may be explained by lifestyle factors, mammography screening, hormone replacement medication, and reproductive factors. Women from higher socioeconomic classes may experience reduced case fatality rates because of differences in tumor characteristics, treatment variables, comorbidity, and lifestyle factors (Lundqvist et al., 2016). The level of education and occupation, both of which have a substantial impact on how patients perceive tumors, are also significantly correlated with socioeconomic position. This has an impact on the degree of early identification, diagnosis, and treatment (Weing et al., 2019).

Another important sociodemographic factor is the level of education. A systematic review by Mehrabi et al. (2015) revealed that the patient's educational level is one demographic indicator of how they would approach their malignancy.

Higher-educated, financially secure women tended to have a higher quality of life in terms of physical, emotional, cognitive, sexual functioning, and performing social roles. Koneieczny et al. (2020) claimed that higher income was positively correlated with aspects of quality of life, including social connections and environmental influences (Gangane et al., 2017). Al Zahrani et al. (2019) indicated that individuals with higher levels of education had healthier bodily function. Sharma and Purkayastha (2017) also reported that education levels had significant effects on the quality of life of BCS.

Women of all races and ethnicities who had low socioeconomic position and poor education experienced an all-cause mortality rate that was 1.4 to 2.7 times lower than those with higher education and greater SES when accounting for both education level and SES together. Among African-Americans and Asian-Americans, women with high education and low SES showed worse survival rates. The joint correlation with poorer survival for those with low SES, independent of education, was observed only among Asian-Americans for breast cancer-specific survival (Marco et al., 2014).

Higher scores in physical and social functioning, divorce, above household income, and an educational level of college or higher were all associated with a significantly increased (better) QoL. Improved QoL scores for breast cancer patients were correlated with lower scores for exhaustion, sleeplessness, financial hardship, and side effects from systemic medication. However, patients who received fewer chemotherapy cycles had considerably poorer QoL scores (Hassen et al., 2019).

Similar findings from a study at the INMOL Hospital in Lahore, Pakistan, revealed that factors such as family income, social standing, and marital status, income, having a family history of breast cancer, and duration of breastfeeding significantly impacted the QoL of BCS. Using a modified

questionnaire to assess physical, mental, social, and spiritual well-being, the study found statistically significant regression effects for physical effort, mental health, and spiritual well-being, while social well-being had no significant influence on the QoL of BCS (Saeed et al., 2021). Maintaining or improving social support for women in the first year following a breast cancer diagnosis is crucial for a better prognosis, as social well-being is a significant predictor of breast cancer recurrence or mortality (Eppelin et al., 2011)

Similarly, results from another study were determined for the physical, spiritual, psychological, and social well-being scales. The physical well-being measure was strongly influenced by age, marital status, and cancer stage; the psychological well-being scale was considerably influenced by the patients' employment status. Marital status could predict social well-being, and chemotherapy and radiation had a significant impact on the spiritual well-being measure (Al Zahrani et al., 2019). Despite receiving the same treatment, similar findings regarding the stage of the disease at presentation and the status of the disease at the most recent follow-up were observed for a few parameters that significantly impacted QoL in patients with breast cancer (Sharma & Purkayastha, 2017).

A study conducted by Koneieczny et al. (2020) reported that women in relationships demonstrated higher QoL scores, characterized by elevated values in functional scales and lower symptom intensity, better cognitive functioning, and more positive future prospects. Previous studies have consistently affirmed that married patients receive greater mental and financial support, exhibit better compliance, leading to early-stage diagnosis and more suitable treatments, ultimately extending their survival (Saghara et al., 2015). Another study supported these findings by indicating that, the likelihood of metastatic disease presentation was lower in married patients, and definitive therapy was more likely to be administered, they are less likely to succumb to cancer after adjusting for demographics, stage, and treatment (Aizer et al., 2013).

Contrastingly, a comparable study focusing on the QoL of breast cancer patients found no correlation with marital status (Musarezaie & Zargham-Boroujeni, 2015). However, being divorced exerted a considerable influence on lower QoL and negative body image compared to survivors who remained married, even though several studies emphasized the significance of marriage in influencing QoL (Kang et al., 2021). Gangane et al. (2017) suggested that psychological health and social relationships were negatively correlated with being divorced, widowed, or single. In line with this, patients who were divorced or widowed also exhibited impaired physical functioning, as reported by Al Zahrani et al. (2019). The disparities in financial resources only partially accounted for the lower survival rates among cancer patients with single parents compared to those with married parents (Lai et al., 2020; American Cancer Society, 2016).

Aim

To examine the extent to which sociodemographic factors tend to influence perceived QoL in Breast Cancer Survivors (BSC). The demographic characteristics of the sample are shown in table 1.

Table 1
Demographic Characteristics of Breast Cancer Survivors (N=150)

Variables	*M(SD)*	*f (%)*
Age	43.8(9.24)	
Education		
No Formal Schooling		33 (20.9%)
High School		56 (37.3%)
Graduation		50 (33.3%)
Post-Graduation		11 (7.33%)
Husband Education		
No Formal Schooling		30(19.0)
High School		33(21%)
Graduation		18(11.4%)
Post-Graduation		25(15.9%)
Preferred Language		
Urdu		102 (64.4%)
English & Urdu Both		48 (30.4%)
Work Status		
Non-working		93(58.9%)
Working		57 (36.1%)
Family Background		
Rural		91 (57.6%)
Urban		59 (37.3%)
Family System		
Nuclear		88 (55.7%)
Joint		62 (39.2%)
Siblings	4.40(1.67)	
Birth Order		
Only		2(1.3%)
First Born		31(19.6%)
Middle Born		75(47.5%)
Last Born		42(26.6%)
Monthly Family Income	88351.36(127875.87)	
Marital Status		
Engaged		0(0.0%)
Married		105 (70%)
Not Married		20 (12.7%)
Divorced/Separated		25 (16.6%)

Note: Education; 1=not educated, 2=high school, 3=graduation, 4=post-graduation; Husband education; 1=not educated, 2=high school, 3=graduation, 4=post-graduation; Preferred language; 1=Urdu, 2=English and Urdu Both; working Status; 1=non-working, 2=working, 3=housewife; Family background; 1=rural, 2=urban; Family system; 1=nuclear, 2=joint; Marital status; 1=married, 2=unmarried,3=others.

Methodology

The study was carried out by utilizing descriptive Cross-Sectional Research Design. Sample was limited to (N=150) due to permission concerns. Purposive sampling was employed to gather the data after institutional permissions.Female BCS with a histologically verified diagnosis of stage I to III, on a schedule of

regular follow-up checkups, with Adjuvant or Neo-Adjuvant Therapy, having their last chemo session at least one month prior to follow-up checkup and Radiotherapy minimum one week prior to follow-up exam were included. Those with less than a year into their survival journey, with advanced stage metastatic cancer and a history of another disease either physical or psychological were not included. All the ethical considerations were followed while collecting data. Data analysis procedure was divided into series of analysis, it was analyzed through SPSS. First, missing data was treated by taking an average score, it wasn't problematic at all as more than 96% of the data was filled. Normality of data was assessed through descriptive statistics, other analysis such as Pearson product-moment correlation, multiple hierarchical regression, ANOVA and t-test were used.

Results

Quality of Life among Breast Cancer Survivors.

The present study found that most of the breast cancer survivors are satisfied with their QoL as indicated by their mean scores on QoL scale.

Table 2
Total Scores on the QoL Scale

Variable	N	Minimum	Maximum	M	SD
QoL	150	1.83	7.87	4.53	1.08

Note: M= Mean; SD= Standard Deviation.

Scores on QoL scale ranged from a minimum 1.83 to a maximum of 7.87. As per the scale scoring, cut off points or ranges are given to interpret the scores that reflected higher scores means poor QoL and low scores means good QoL. In the above table, most of the breast cancer survivors tend to report good QoL as reflected by their mean scores.

Sociodemographic Factors & QoL

To assess the relationship between sociodemographic variables such as age, education, husband education and family monthly income and QoL among women diagnosed with Breast Cancer, Pearson product-moment correlation was carried out

Table 3
Bivariate Correlation between Sociodemographic Factors and QoL (N = 150)

Variables	1	2	3	4	5
Age	-	-.23**	-.25**	-.06	-.01
Education		-	.65***	.41***	.36***
Husband Education			-	.46***	.13
Family Monthly Income				-	.12
Quality of Life					-

Note: *p<.05,**p<.01, ***p<.001

The above table shows that education appears to have a significant correlation with QoL. This finding suggested that individuals with higher education tend to report increased QoL However, no significant correlation was found between age, husband's education and monthly family income with QoL.

One Way ANOVA (Age Groups and QoL)

Table 4

One Way independent Measures ANOVA comparing Age Groups in terms of Quality of Life (N = 150)

Variable	Young Adults (n=30)		Middle Adults (n=86)		Older Adults (n=33)		
	M	*SD*	*M*	*SD*	*M*	*SD*	*F(2, 146)*
QoL	4.22	.873	4.69	1.07	4.40	1.24	2.44

*Note: QoL= Quality of Life, *p<.05, **p<.01, ***p<.001*

Results of independent measures ANOVA showed no significant mean differences among BCS with different age groups in terms of QoL. It was suggested that BCS from these three age groups did not differed in terms of perceptions regarding QoL.

Independent Measures ANOVA (Marital Status & QoL)

To compare mean differences among marital status in terms of QoL, Independent measures ANOVA was carried out (See Table 4.10).

Table 5

One Way independent Measures ANOVA comparing Marital Status in terms of Quality of Life (N = 150)

Variable	Married (n=20)		Not Married (n=104)		Divorced/Separated (n=26)			*Partial* η^2
	M	*SD*	*M*	*SD*	*M*	*SD*	*F(2, 147)*	
Quality of Life	222.3	56.03	210.3	48.36	187.5	52.31	3.09*	.040

*Note: *p<.05, **p<.01, ***p<.001*

Results of independent measures ANOVA showed significant mean differences among BCS with different marital status was found in terms of QoL. Results suggested that married women tend to have better QoL as compared to those who were not married and divorced/separated. This finding reflected that married women tend to have social support from their spouse, in-laws and children that may facilitate or improve QoL.

Table 6

Independent Sample t Test comparing Work Status in terms of QoL (N=150)

Variables	Non-working (n=92)		Working (n=57)		*t(148)*	*95%CI*		*P*	Cohen's d
	M	*SD*	*M*	*SD*		LL	UL		
Quality of Life	4.28	1.03	4.95	1.05	-3.83	-1.02	-.326	.000***	0.64

Note: QoL= Quality of Life, M=Mean, SD= Standard Deviation, CI=Confidence interval, LL: Lower limit, UL: Upper limit, * p < .05, ** p < .01, *** p < .001

The independent sample t test indicated that BCS with different work status (non-working and working) significantly vary in terms of QoL. It was revealed that working women tend to report better QoL as compared to those who were non-working. This finding reflected that working status has major role in facilitating or worsening QoL in women with breast cancer. Occupational activities

may help to divert the mind that significantly helping to promote better QoL.

Independent Sample t-test (Family Background & QoL): To assess differences between BCS belonging from rural and urban family background in terms of QoL (physical, psychological, social and spiritual wellbeing), Independent sample t-test was carried out (See Table 4.13).

Table 7

Independent Sample t-Test comparing Family Background in terms of Quality of Life (N = 150)

Variables	Rural (n=91)		Urban (n=59)			*95% CI*		*Cohen's d*
	M	*SD*	*M*	*SD*	*t(148)*	*UL*	*LL*	
Quality of Life	196.02	47.97	226.46	49.86	-3.74***	-46.53	-14.34	-4.45

*$p<.51$, **$p<.01$, ***$p<.001$

Results of independent sample t-test showed significant mean differences between family background (rural and urban) in terms of QoL. Results suggested that BCS belonging from urban background tend to report better QoL as compared to those who lived in rural areas.

Discussion

The findings about the demographic factors are in line with the previous existed literature. In current study, age was found to be significantly positively related to QoL Koneieczny et al. (2020) also reported positive associations of age with QoL among BCS. While survey by Daldoul et al. (2018). Current study indicated that BCS from rural areas have better physical health, this finding is consistent with the study conducted by Azam et al. (2021), results suggested that level of QoL, psychological, social and spiritual wellbeing was higher in urban women with large effect size. However, the level of physical wellbeing found to be higher in rural women with large effect size.

Various factors influenced QoL in patients with BC. These determinants include socioeconomic status, educational attainment, occupational status, psychosocial difficulties, and financial resources (Gangane et al., 2017). In current study age, education and financial status were significantly positively correlated with QoL. Age, literacy, marital status, and socioeconomic position were all identified as major contributors of QoL in a recent Indian analysis of variables associated with QoL among female BCS (Deshpande et al., 2013). Musarezaie and Boroujeni (2015) reported education level had significant direct relationship with QoL. Smail et al. (2022) also reported positive associations of QoL with education.

Marital status had significant impact upon QoL of BCS(Saeed et al., 2021). In current study level of QoL and social wellbeing were different across marital status. Unmarried women had higher level of QoL as compare to others (widowed, divorced and separated) while married women had higher level of social wellbeing as compare to others (widowed, divorced and separated). Likewise findings from a study conducted by Croft et al. (2017) suggested that breast cancer survivors especially within 5 years of diagnosis, those who are married have better survival outcomes as they were on higher social well-being than their unmarried counterparts. The results published by Ramadas et al. (2015) suggested that QoL of women diagnosed with BC was greater in those participants who were married and lived with their family. According to these studies, women who did not have children suffered psychologically more than women who did have children. According to research by Cobo et al. (2018) and Acil and Cavdar (2014), women in relationships were more satisfied with their lives than single women were. The link between being in a relationship and having a good QoL for BC patients shows how crucial family support is in the battle against the disease.

Another important demographic factor in current study was monthly family income or socio-economic status that have its negative associations with QoL as BC's economic cost extends into post-treatment survivorship. Individuals with a lower SES have more advanced disease, have lower mammography screening adherence, are less likely to undergo treatment, and have lower survival chances (Singh & Sridhar, 2021). Aziz et al. (2010) found that individuals with lower SES had larger, more aggressive tumors with worse survival results in a research done in Pakistan. They also reported that due to resource limitation patients are not able to get effective treatment that can compromise their QoL. Similar findings were found by Huang et al. (2017) and Yan et al. (2016), who discovered higher QoL in BC patients with higher income. According to the findings of Kobayashi et al. (2008), higher family income is associated with improved overall health and QoL in women.

According to research, resilience has a substantial influence on cancer patients' ability to adapt to the condition (Gan et al., 2018). In current study, working women were found to be more resilient as compared to those BCS who were non-working and housewives. Similarly, working women tend to report higher level of self-efficacy. This finding suggested that resilience may be a facilitating factor that may develop or enhance self-efficacy of working women with BC. Working women with BC tend to report higher level of satisfaction with psychological, social, spiritual and overall QoL. Shariatzadeh et al. (2016) discovered a positive and substantial association between resilience and self-efficacy in their study. According to Guedes et al. (2018), results from a cross-sectional study conducted on BCS who had undergone regular follow-ups and had received treatment of cancer for at least one year prior to the study showed that there were important changes in perception of body image between working and non-women as working women reported being unable to go to work. Women who are unemployed claimed to have a negative body image. Another significant finding of current study was about Women with children had different health beliefs as they experienced more barriers or hurdles during their course of treatment. Findings from a study indicated total lower scores on clinical and psychological dimensions due to the presence of children and of a partner (Balldelli et al., 2022).

Concluding Remarks

Demographic factors do influence QoL of BCS. Age, education, financial status and marital status have its relationship with QoL among BCS. Family Background either urban or rural have its impact upon QoL subscales such psychological, social and spiritual wellbeing was higher in urban women while physical wellbeing found to be higher in rural women. Marital status had different effect on level of QoL and social wellbeing as unmarried women had higher level of quality of life as compare to others (widowed, divorced and separated) while married women had higher level of social wellbeing as compare to others. Finding reflected that BCS with children perceived more barriers or hurdles during their course of treatment. Work status also affected the QoL of BCS.

REFERENCES

Agarwal, S., Ying, J., Boucher, K. M., & Agarwal, J. P. (2017). The association between socioeconomic factors and breast cancer-specific survival varies by race. *PloS One, 12*(12), e0187018. https://doi.org/10.1371/journal.pone.0187018

Ahmed, A. E., Alharbi, A. G., Alsadhan, M. A., Almuzaini, A. S., Almuzaini, H. S., Ali, Y. Z., & Jazieh, A. R. (2017). The predictors of poor quality of life in a sample of Saudi women with breast cancer. Breast cancer (Dove Medical Press), 9, 51–58. https://doi.org/10.2147/BCTT.S125206

Ahadzadeh, A. S., & Sharif, S. P. (2018). Uncertainty and Quality of Life in Women with Breast Cancer: Moderating Role of Coping Styles. Cancer Nursing, 41(6), 484–490. https://doi.org/10.1097/NCC.0000000000000552

Aizer, A. A., Chen, M. H., McCarthy, E. P., Mendu, M. L., Koo, S., Wilhite, T. J., Graham, P. L., Choueiri, T. K., Hoffman, K. E., Martin, N. E., Hu, J. C., & Nguyen, P. L. (2013). Marital status and survival in patients with cancer. Journal of Clinical Oncology: Official Journal of the American Society of Clinical Oncology, 31(31), 3869–3876.

Al Zahrani, A. M., Alalawi, Y., Yagoub, U., Saud, N., & Siddig, K. (2019). Quality of life of women with breast cancer undergoing treatment and follow-up at King Salman Armed Forces Hospital in Tabuk, Saudi Arabia. *Breast cancer (Dove Medical Press), 11*, 199–208. https://doi.org/10.2147/BCTT.S200605

Al Zahrani, A. M., Alalawi, Y., Yagoub, U., Saud, N., & Siddig, K. (2019). Quality of life of women with breast cancer undergoing treatment and follow-up at King Salman Armed Forces Hospital in Tabuk, Saudi Arabia. *Breast Cancer: Targets and Therapy*, *11*, 199. https://doi.org/10.2147/BCTT.S200605

Arshad, S., ur Rehman, M., Abid, F., Yasir, S., Qayyum, M., Ashiq, K., & Ashiq, S. (2019). Current situation of breast cancer in Pakistan with the available interventions. *Int J Biosci*, *11*(6), 232-240. https://doi.org/10.12692/ijb/14.6.232-240.

Ashraf, M. S., & Jamil, A. (2016). Cancer care in Pakistan. In *Cancer Care in Countries and Societies in Transition* (pp. 231-245). Springer, Cham. https://doi.org/10.1007/978-3-319-22912-6_15.

Asif, H. M., Sultana, S., Akhtar, N., Rehman, J. U., & Rehman, R. U. (2014). Prevalence, risk factors and disease knowledge of breast cancer in Pakistan. *Asian Pacific Journal of Cancer Prevention: APJCP*, *15*(11), 4411–4416. https://doi.org/10.7314/apjcp.2014.15.11.4411

Ayesha, T., Muhammad, A. T., & Azhar, K. (2016). Prognosis, Prevalence Trend and Different Treatment Options of Breast Cancer in Pakistan. *Austin J Cancer Clin Res*, *3*, 1066.

Azam, M., Aslam, M., Basharat, J., Mughal, M. A., Nadeem, M. S., & Anwar, F. (2021). An empirical study on quality of life and related factors of Pakistani breast cancer survivors. *Scientific Reports, 11*(1), 24391. https://doi.org/10.1038/s41598-021-03696-9

Azam, M., Aslam, M., Basharat, J., Mughal, M. A., Nadeem, M. S., & Anwar, F. (2021). An empirical study on quality of life and related factors of Pakistani breast cancer survivors. *Scientific Reports, 11*(1), 1-11.

Aziz, Z., Iqbal, J., Akram, M., & Anderson, B. O. (2010). Worsened oncologic outcomes for women of lower socio-economic status (SES) treated for locally advanced breast cancer (LABC) in Pakistan. *Breast (Edinburgh, Scotland), 19*(1), 38–43. https://doi.org/10.1016/j.breast.2009.10.005

Aizer, A. A., Chen, M. H., McCarthy, E. P., Mendu, M. L., Koo, S., Wilhite, T. J., Graham, P. L., Choueiri, T. K., Hoffman, K. E., Martin, N. E., Hu, J. C., & Nguyen, P. L. (2013). Marital status and survival in patients with cancer. *Journal of Clinical Oncology: Official Journal of the American Society of Clinical Oncology, 31*(31), 3869–3876. https://doi.org/10.1200/JCO.2013.49.6489

Arshad, S., ur Rehman, M., Abid, F., Yasir, S., Qayyum, M., Ashiq, K., & Ashiq, S. (2019). Current situation of breast cancer in Pakistan with the available interventions. *Int J Biosci*, *11*(6), 232-240. https://doi.org/10.12692/ijb/14.6.232-240.

Ashraf, M. S., & Jamil, A. (2016). Cancer care in Pakistan. In *Cancer Care in Countries and Societies in Transition* (pp. 231-245). Springer, Cham. https://doi.org/10.1007/978-3-319-22912-6_15.

Asif, H. M., Sultana, S., Akhtar, N., Rehman, J. U., & Rehman, R. U. (2014). Prevalence, risk factors and disease knowledge of breast cancer in Pakistan. *Asian Pacific Journal of Cancer Prevention: APJCP*, *15*(11), 4411–4416. https://doi.org/10.7314/apjcp.2014.15.11.4411

Berry, D. A., Cronin, K. A., Plevritis, S. K., Fryback, D. G., Clarke, L., Zelen, M., ... & Feuer, E. J. (2005). Effect of screening and adjuvant therapy on mortality from breast cancer. *New England Journal of Medicine*, *353*(17), 1784-1792. Retrieved from: https://pubmed.ncbi.nlm.nih.gov/16251534/

Bibi, A., & Khalid, M. A. (2020). Death anxiety, perceived social support, and demographic correlates of patients with breast cancer in Pakistan. *Death Studies*, *44*(12), 787-792. 10.1080/07481187.2019.1614108.

Baldelli, I., Gari, M., Aguglia, A., Amerio, A., Berrino, V., Santori, G., ... & Raposio, E. (2022). Relationship between breast cancer surgical treatment and psychiatric symptomatology: which sociodemographic and clinical factors could influence it? A preliminary study. *Behavioral Sciences*, *12*(1), 9.

Bradley, C. J., Given, C. W., & Roberts, C. (2002). Race, socioeconomic status, and breast cancer treatment and survival. *Journal of the National Cancer Institute*, *94*(7), 490-496. 10.1093/jnci/94.7.490.

Croft, L., Sorkin, J., & Gallicchio, L. (2014). Marital status and optimism score among breast cancer survivors. *Supportive Care in Cancer*, *22*(11), 3027-3034. https://doi.org/10.1007/s00520-014-2308-y

Coughlin, S. S., Ayyala, D. N., Tingen, M. S., & Cortes, J. E. (2020). Financial distress among breast cancer survivors. *Current Cancer Reports*, *2*(1), 48–53. https://doi.org/10.25082/CCR.2020.01.004

Daldoul, A., Khechine, W., Bhiri, H., Ammar, N., Bouriga, R., Krir, M. W., & Zaied, S. (2018). Factors predictive of quality of life among breast cancer patients. *Asian Pacific Journal of Cancer Prevention: APJCP*, *19*(6), 1671. https://doi.org/10.22034/APJCP.2018.19.6.1671

De Boniface, J., Szulkin, R., & Johansson, A. (2021). Survival after Breast Conservation vs Mastectomy Adjusted for Comorbidity and Socioeconomic Status: A Swedish National 6-Year Follow-up of 48 986 Women. *JAMA surgery*, *156*(7), 628–637. https://doi.org/10.1001/jamasurg.2021.1438

Deepa, K. V., Gadgil, A., Löfgren, J., Mehare, S., Bhandarkar, P., & Roy, N. (2020). Is quality of life after mastectomy comparable to that after breast conservation surgery? A 5-year follow up study from Mumbai, India. *Quality of Life Research*, *29*(3), 683-692. https://doi.org/10.1007/s11136-019-02351-1

Dialla, P. O., Chu, W. O., Roignot, P., Bone-Lepinoy, M. C., Poillot, M. L., Coutant, C., & Dabakuyo-Yonli, T. S. (2015). Impact of age-related socio-economic and clinical determinants of quality of life among long-term breast cancer survivors. *Maturitas*, *81*(3), 362-370. https://doi.org/10.1016/j.maturitas.2015.03.025

Dreyer, M. S., Nattinger, A. B., McGinley, E. L., & Pezzin, L. E. (2018). Socioeconomic status and breast cancer treatment. *Breast Cancer Research and Treatment*, *167*(1), 1–8. https://doi.org/10.1007/s10549-017-4490-3

Epplein, M., Zheng, Y., Zheng, W., Chen, Z., GU, K., Penson, D., Lu, W., & Shu, X. O. (2011). Quality of life after breast cancer diagnosis and survival. *Journal of Clinical Oncology: Official Journal of the American Society of Clinical Oncology, 29*(4), 406–412. https://doi.org/10.1200/JCO.2010.30.6951

Gangane, N., Khairkar, P., Hurtig, A. K., & San Sebastián, M. (2017). Quality of Life Determinants in Breast Cancer Patients in Central Rural India. *Asian Pacific Journal of Cancer Prevention: APJCP, 18*(12), 3325–3332. https://doi.org/10.22034/APJCP.2017.18.12.3325

Gulzar, F., Akhtar, M. S., Sadiq, R., Bashir, S., Jamil, S., & Baig, S. M. (2019). Identifying the reasons for delayed presentation of Pakistani breast cancer patients at a tertiary care hospital. *Cancer Management and Research, 11*, 1087–1096. https://doi.org/10.2147/CMAR.S180388

Ganz, P. A., Greendale, G. A., Petersen, L., Kahn, B., & Bower, J. E. (2003). Breast cancer in younger women: reproductive and late health effects of treatment. *Journal of Clinical Oncology, 21*(22), 4184-4193. Doi: 10.1200/JCO.2003.04.196

Hamelinck, V. C., Stiggelbout, A. M., van de Velde, C. J., Liefers, G. J., & Bastiaannet, E. (2017). Treatment recommendations for older women with breast cancer: a survey among surgical, radiation and medical oncologists. *European Journal of Surgical Oncology (EJSO), 43*(7), 1288-1296. 10.1016/j.ejso.2017.02.006.

Hassen, A. M., Taye, G., Gizaw, M., & Hussien, F. M. (2019). Quality of life and associated factors among patients with breast cancer under chemotherapy at Tikur Anbessa specialized hospital, Addis Ababa, Ethiopia. *PloS One, 14*(9), e0222629. https://doi.org/10.1371/journal.pone.0222629

Hinyard, L., Wirth, L. S., Clancy, J. M., & Schwartz, T. (2017). The effect of marital status on breast cancer-related outcomes in women under 65: A SEER database analysis. *Breast (Edinburgh, Scotland), 32*, 13–17. https://doi.org/10.1016/j.breast.2016.12.008

Imran, M., Al-Wassia, R., Alkhayyat, S. S., Baig, M., & Al-Saati, B. A. (2019). Assessment of quality of life (QoL) in breast cancer patients by using EORTC QLQ-C30 and BR-23 questionnaires: A tertiary care center survey in the western region of Saudi Arabia. PloS one, 14(7), e0219093.

Kang, D., Kim, N., Han, G., Kim, S., Kim, H., Lim, J., . . . Cho, J. (2021). Divorce after breast cancer diagnosis and its impact on quality of life. *Palliative and Supportive Care*, 1-6. doi:10.1017/S1478951521001711

Khan, Dr & Zaffar, Dr & Mahmood, Dr. (2020). Comparison of Quality of Life in Breast Cancer Survivors with Lymphoma Survivors. *Journal of Islamabad Medical & Dental College, 9*, 262-268. 10.35787/jimdc.v9i4.587.

Khan, M. A., Hanif, S., Iqbal, S., Shahzad, M. F., Shafique, S., & Khan, M. T. (2015). Presentation delay in breast cancer patients and its association with sociodemographic factors in North Pakistan. *Chinese Journal of Cancer Research, 27*(3), 288. https://doi.org/10.3978/j.issn.1000-9604.2015.04.11

Khan, N. H., Duan, S. F., Wu, D. D., & Ji, X. Y. (2021). Better reporting and awareness campaigns needed for breast cancer in Pakistani women. *Cancer Management and Research, 13*, 2125. Retrieved from: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7936924/

Khan, S., Khan, N. A., Rehman, A. U., Khan, I., Samo, K. A., & Memon, A. S. (2016). Levels of depression and anxiety post-mastectomy in breast cancer patients at a public sector hospital in Karachi. *Asian Pacific Journal of Cancer Prevention, 17*(3), 1337-1340. 10.7314/APJCP.2016.17.3.1337

Leinert, E., Singer, S., Janni, W., Harbeck, N., Weissenbacher, T., Rack, B., ... & Eichler, M. (2017). The impact of age on quality of life in breast cancer patients receiving adjuvant chemotherapy: a comparative analysis from the prospective multicenter randomized ADEBAR trial. *Clinical Breast Cancer*, *17*(2), 100-106. https://doi.org/10.1016/j.clbc.2016.10.008

Li, M., Han, M., Chen, Z., Tang, Y., Ma, J., Zhang, Z., ... & Zhai, S. (2020). Does marital status correlate with the female breast cancer risk? A systematic review and meta-analysis of observational studies. *PloS one*, *15*(3), e0229899. https://doi.org/10.1371/journal.pone.0229899

Mehrabi, E., Hajian, S., Simbar, M., Hoshyari, M., & Zayeri, F. (2015). Coping response following a diagnosis of breast cancer: A systematic review. *Electronic Physician*, *7*(8), 1575. https://doi.org/10.19082/1575

Meneses, K., Azuero, A., Hassey, L., McNees, P., & Pisu, M. (2012). Does economic burden influence quality of life in breast cancer survivors?. *Gynecologic Oncology*, *124*(3), 437-443. https://doi.org/10.1016/j.ygyno.2011.11.038

Menhas, R., & Umer, S. (2015). Breast cancer among Pakistani women. *Iranian Journal of Public Health*, *44*(4), 586-7. http://ijph.tums.ac.ir

Musarezaie, A., & Zargham-Boroujeni, A. (2015). Quality of life and related factors among the women undergoing mastectomy. *Iranian Journal of Nursing and Midwifery Research*, *20*(2), 287–291.

Musarezaie, A., & Zargham-Boroujeni, A. (2015). Quality of life and related factors among the women undergoing mastectomy. *Iranian Journal of Nursing and Midwifery Research*, *20*(2), 287–291.

Ozair, N., Kamran, J., Asim, S., Fatima, A., Hisam, A., & Ujala, M. (2019). Quality of life among post-surgical patients of breast cancer visiting a tertiary care hospital in Rawalpindi. *Pakistan Armed Forces Medical Journal*, (2), S303. https://www.pafmj.org/index.php/PAFMJ/article/view/2895

Park, B. W., Lee, S., Lee, A. R., Lee, K. H., & Hwang, S. Y. (2011). Quality of life differences between younger and older breast cancer patients. *Journal of Breast Cancer*, *14*(2), 112-118. 10.4048/jbc.2011.14.2.112.

Park, B. W., Lee, S., Lee, A. R., Lee, K. H., & Hwang, S. Y. (2011). Quality of Life Differences between Younger and Older Breast Cancer Patients. *Journal of Breast Cancer*, *14*(2), 112–118. https://doi.org/10.4048/jbc.2011.14.2.112

Park, J. H., Jung, Y. S., Kim, J. Y., & Bae, S. H. (2021). Determinants of quality of life in women immediately following the completion of primary treatment of breast cancer: A cross-sectional study. *PloS One*, *16*(10), e0258447. https://doi.org/10.1371/journal.pone.0258447PLOS ONE. 16. e0258447. 10.1371/journal.pone.0258447.

Konieczny, M., Cipora, E., Sygit, K., & Fal, A. (2020). Quality of life of women with breast cancer and socio-demographic factors. *Asian Pacific Journal of Cancer Prevention: APJCP*, *21*(1), 185. https://doi.org/10.31557/APJCP.2020.21.1.185

Saeed, S., Asim, M., & Sohail, M. M. (2021). Fears and barriers: problems in breast cancer diagnosis and treatment in Pakistan. *BMC Women's Health*, *21*(1), 151. https://doi.org/10.1186/s12905-021-01293-6

Saeed, S., Asim, M., & Sohail, M. M. (2021). Fears and barriers: problems in breast cancer diagnosis and treatment in Pakistan. *BMC Women's Health, 21*(1), 151. https://doi.org/10.1186/s12905-021-01293-6

Sammarco, A. (2009). Quality of life of breast cancer survivors: A comparative study of age cohorts. *Cancer Nurs 32*(5): 347-56.

Shafaie, F. S., Mirghafourvand, M., & Amirzehni, J. (2019). Predictors of Quality of Life in Patients with Breast Cancer. *Indian Journal of Palliative Care, 25*(1), 73–78. https://doi.org/10.4103/IJPC.IJPC_119_18

Shariff-Marco, S., Yang, J., John, E. M., Sangaramoorthy, M., Hertz, A., Koo, J., ... & Gomez, S. L. (2014). Impact of Neighborhood and Individual Socioeconomic Status on Survival after Breast Cancer Varies by Race/Ethnicity: The Neighborhood and Breast Cancer StudyNeighborhood, Individual SES, and Breast Cancer Survival. *Cancer epidemiology, biomarkers & prevention*, *23*(5), 793-811. https://doi.org/10.1158/1055-9965.EPI-13-0924

Sharma, N., & Purkayastha, A. (2017). Factors Affecting Quality of Life in Breast Cancer Patients: A Descriptive and Cross-sectional Study with Review of Literature. *Journal of Mid-Life Health, 8*(2), 75–83. https://doi.org/10.4103/jmh.JMH_15_17

Sharma, N., & Purkayastha, A. (2017). Factors affecting quality of life in breast cancer patients: a descriptive and cross-sectional study with review of literature. *Journal of Mid-Life Health*, *8*(2), 75. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5496284/

Shobhita, R., & Sathiyaseelan, A. (2013). *Experiences of female breast cancer survivors on their appearance related issues impacting their identity*. Shaukat Khanum Memorial Cancer Hospital & Research Centre.

Siu, A. L., & U.S. Preventive Services Task Force (2016). Screening for Breast Cancer: U.S. Preventive Services Task Force Recommendation Statement. *Annals of Internal Medicine, 164*(4), 279–296. https://doi.org/10.7326/M15-2886

Søgaard, M., Thomsen, R. W., Bossen, K. S., Sørensen, H. T., & Nørgaard, M. (2013). The impact of comorbidity on cancer survival: a review. *Clinical Epidemiology, 5*(Suppl 1), 3–29. https://doi.org/10.2147/CLEP.S47150

Soomro, R., Faridi, S., Khurshaidi, N., Zahid, N., & Mamshad, I. (2018). Age and stage of breast cancer in Pakistan: An experience at a tertiary care center. *J Pak Med Assoc*, *68*(11), 1682-1685.

Suwankhong, D., & Liamputtong, P. (2016). Social Support and Women Living With Breast Cancer in the South of Thailand. *Journal of nursing scholarship : an official publication of Sigma Theta Tau International Honor Society of Nursing*, *48*(1), 39–47. https://doi.org/10.1111/jnu.12179

Swainston, J., Chapman, B., Grunfeld, E. A., & Derakshan, N. (2020). COVID-19 lockdown and its adverse impact on psychological health in breast cancer. *Frontiers in Psychology*, *11*, 2033. Frontiers in Psychology. 10.3389/fpsyg.2020.02033.

Toledo, G., Ochoa, C. Y., & Farias, A. J. (2021). Religion and spirituality: their role in the psychosocial adjustment to breast cancer and subsequent symptom management of adjuvant endocrine therapy. *Supportive Care in Cancer*, *29*(6), 3017-3024. https://doi.org/10.1007/s00520-020-05722-4

Tsai, H. Y., Kuo, R. N., & Chung, K. P. (2017). Quality of life of breast cancer survivors following breast-conserving therapy versus mastectomy: a multicenter study in Taiwan. *Japanese Journal of Clinical Oncology, 47*(10), 909–918. https://doi.org/10.1093/jjco/hyx099

Tsaras, K., Papathanasiou, I. V., Mitsi, D., Veneti, A., Kelesi, M., Zyga, S., & Fradelos, E. C. (2018). Assessment of Depression and Anxiety in Breast Cancer Patients: Prevalence and Associated Factors. *Asian Pacific Journal of Cancer Prevention : APJCP*, *19*(6), 1661–1669. https://doi.org/10.22034/APJCP.2018.19.6.1661

Tsaras, K., Papathanasiou, I. V., Mitsi, D., Veneti, A., Kelesi, M., Zyga, S., & Fradelos, E. C. (2018). Assessment of depression and anxiety in breast cancer patients: prevalence and associated factors. *Asian Pacific journal of cancer prevention: APJCP*, *19*(6), 1661. Retrieved from: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6103579/

Wang, W., Xu, L., & Shen, C. (2015). Effects of Traditional Chinese Medicine in Treatment of Breast Cancer Patients After Mastectomy: A Meta-Analysis. *Cell Biochemistry and Biophysics*, *71*(3), 1299–1306. https://doi.org/10.1007/s12013-014-0348-z

Wani, S. Q., Khan, T., Teeli, A. M., Khan, N. A., Wani, S. Y., & Ashfaq-ul-Hassan (2012). Quality of life assessment in survivors of breast cancer. *Journal of Cancer Research and Therapeutics*, *8*(2), 272–276. https://doi.org/10.4103/0973-1482.98986

Wöckel, A., Schwentner, L., Krockenberger, M., Kreienberg, R., Janni, W., Wischnewsky, M., ... & Singer, S. (2017). Predictors of the course of quality of life during therapy in women with primary breast cancer. *Quality of Life Research*, *26*(8), 2201-2208. https://doi.org/10.1007/s11136-017-1570-0

Yusuf, A. (2013). Cancer care in Pakistan. *Japanese Journal of Clinical Oncology*, *43*(8), 771-775. 10.1093/jjco/hyt078.

Yan, A. F., Stevens, P., Holt, C., Walker, A., Ng, A., McManus, P., ... & Wang, M. Q. (2019). Culture, identity, strength and spirituality: A qualitative study to understand experiences of African American women breast cancer survivors and recommendations for intervention development. *European Journal of Cancer Care*, *28*(3), e13013. 10.1111/ecc.13013

Zaheer, S., Shah, N., Maqbool, S. A., & Soomro, N. M. (2019). Estimates of past and future time trends in age-specific breast cancer incidence among women in Karachi, Pakistan: 2004–2025. *BMC Public Health*, *19*(1), 1-9. 10.1186/s12889-019-7330-z.