Clinical and Socio-Demographic Predictors of Psychosocial Distress in Women with Breast Cancer in Nairobi, Kenya

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Abstract

Research shows that 25%–50% of breast cancer patients worldwide experience distress, with some African countries reporting 71% and Kenya 34-50% distress cases. This study investigated clinical and socio-demographic predictors of breast cancer patients' psychosocial distress. Poor quality of life outcomes, reduced adherence to treatment, and inferior clinical and psychosocial functioning are all associated with psychosocial distress. This study adopted an exploratory, sequential cross-sectional design. The study targeted 763, 18–70-year-old female breast cancer patients. Breast cancer patients, nurses, lay navigator, and oncologists were enlisted through opportunity sampling technique for collection of both the qualitative and the quantitative data. Interviews, focus group discussions, and questionnaires were used to collect data. Using a total score of >11, with NCCN cut-off mark of >4 for clinically significant distress; and >7 for severe distress, psychosocial distress was screened using distress thermometer and problem checklist. Notably, income and stage of diagnosis emerged as significant predictors of psychosocial distress, clinical anxiety, and depression. Income predicted severe distress (OR = 5.5, p = 0.001), anxiety (OR = 2.8, p = 0.004), depression (OR = 4.7, p = 0.001), and early diagnosis had an inverse relationship with distress (OR = 0.3, p = 0.006) and depression (OR = 0.5, p = 0.049). Still, testimonials showed that young women had more emotional distress, while elderly women had more physiological distress. Marriage provided two insurance policies. The study emphasises understanding of emotional and psychological distress factors, identifying patients who need extra help, and using psychotherapy and social interventions to alleviate suffering, enhance resilience, and improve treatment outcomes

Keywords: *Clinical, Socio-demographics, Breast cancer, Psychosocial distress, Predictors, Mixed-methods*

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1.0 Introduction

Breast cancer (BC) was responsible for 16.1% of all cancer cases in Kenya in 2022. Psychosocial distress in BC patients lowers quality of life and adherence, thereby elevating mortality (Aamir et al., 2022; Carlson et al., 2019). Research indicates that women facing breast cancer diagnosis experience a spectrum of distress, ranging from mild emotional vulnerabilities like worry and fear to more severe conditions such as anxiety and depression (Ebob-Anya & Bassah, 2022; Muzzatti et al., 2020). Psychosocial distress often impairs BC patients' ability to deal with cancer and its treatment (Riba et al., 2019). Research shows that 25%–50% of breast cancer patients experience distress, but medical settings often overlook it (Carlson et al., 2019; Ndetei et al., 2018).

BC diagnosis and treatment cause severe emotional distress across the disease continuum, lowering quality of life (Aitken & Hossan, 2022; Faroughi et al., 2023; Tsaras et al., 2018). Socio-demographic factors, such as age, education, marital status, income, and diagnosis stage may contribute significantly to psychosocial distress in BC patients (Mukherjee et al., 2018). It was therefore important to identify clinical and socio-demographic predictors of psychosocial distress among women diagnosed with breast cancer in Nairobi County. Clinical and socio-demographic factors are hypothesized to influence these women's psychosocial distress. The Stress Process Model (SPM) by Pearlin et al. (1981), the Fundamental Cause Theory (FCT) by Link and Phelan, (1995), and the Social Cognitive Theory of Health Promotion (SCTH) by Bandura (1998) help explain how breast cancer patients' socio-demographic and clinical characteristics influence their emotional well-being. The SPM prescribes the stress proliferation model, which explains how stress begets strains and more stressors; while the FCT proposes that socio-economic status and support networks influence health outcomes. The SCTH suggests a dynamic and reciprocal relationship between personal factors, behaviour, and the environment.

Delays in treatment and limited access to services may cause distress for low-income patients (Chi, 2019). Due to limited information and decision-making options, breast cancer patients with lower education levels may be more distressed (Mukherjee et al. 2018). Family and professional disruptions may cause distress in younger patients (Surbhi et al., 2022). Advanced illness stages increase symptom load and emotional distress, which may worsen prognostic outcomes (Safar & Mazanec, 2023). Studies conducted in Kenya underscore the high prevalence of distress among breast cancer patients, with employment status and late-stage diagnosis identified as significant contributors to depression risk (Saina et al., 2021). By identifying clinical and sociodemographic predictors of psychosocial distress, the study aims to contribute to the development of targeted interventions that improve psychosocial support and overall patient outcomes in BC treatment.

2.0 Materials and Methods

This exploratory, sequential cross-sectional study took place between January and August 2023. The study targeted 763 female breast cancer patients aged 18–70. We identified patients, nurses, lay navigators, and oncologists for qualitative data collection through opportunity sampling. For quantitative data sample participants were recruited consecutively until the quota was satisfied. Interviews were conducted with twenty breast cancer patients, two 6-member focus groups, four nurses, one lay navigator, and three doctors. Interviews were used to collect qualitative data. Additionally, 256 patients completed socio-demographic and clinical researcher-administered questionnaires. Socio-demographic and clinical demographic questionnaire were used in the study. A distress thermometer (DT) with a 10-item problem checklist, and the Hospital Anxiety and Depression Scale were used to assess psychosocial distress. The DT is a self-assessment measure that rates the patient's distress during the past week on a scale of 0 to 10. Its cut-off score is >4. The NCCN DT has excellent psychometrics, with a 0.80 test-retest correlation and high diagnostic validity (Donovan et al., 2014). We established a problem inventory of ten issues during the qualitative phase, including financial, interpersonal, role-taking, emotional, physical, and existential concerns. The HADS consists of fourteen questions, with seven addressing anxiety and seven addressing depression. Each subscale score ranges from 0-7 (normal), 8-10 (borderline), and ≥11 (clinical "caseness"). For this study, a total score of ≥11 on the two subscales was used as the diagnostic criterion (Boxley et al., 2016). Ethical approval for the study was obtained from the KNH/UoN Ethical Review Committee under permit No. P644/07/2022 and a NACOSTI license (NACOSTI/P/22/22726).

"The study found out that income, age, marital status, education level and diagnosis stage have influence on the psychosocial well-being of breast cancer patients"

Statistical Analysis

We examined psychosocial distress as the dependent variable, using clinical and socio-demographic parameters as predictors. To analyze the interview transcripts and identify key themes, we employed inductive method (Flick, 2018). Descriptive statistics, such as frequencies and percentages, were used to describe the quantitative data. Odds ratios and multinomial logistic regression were utilized to determine correlations between variables and psychosocial distress. Statistical analysis was performed using IBM SPSS Statistics (Version 27), with a significance level set at $p = 0.05$.

3.0 Results and Discussion

Table 1

Socio-demographic Characteristics of Respondents

Characteristic	Response	n=256	%
Age in Cohorts	<34	18	7
	35-44	80	31
	45-54	93	36
	>55	65	25
	At least Primary	120	47
	Secondary School	91	35
	College/university	45	18
Marital Status	Divorced	1	0.4
	Married	129	50
	Separated	31	12
	Single	66	26
	Widowed	29	11
Employment Status	Business	61	24
	Employed	20	8
	Casual Laborer	16	6
	Unemployed	159	62
Monthly Income (KES)	No income	160	63
	<10,000	50	19
	11000-20,000	23	9
	21000-40,000	10	4
	>40,000	13	5
Diagnosis stage	Stage 1	33	13
	Stage 2	96	38
	Stage 3	83	32
	Stage 4	44	17
Surgical Intervention	None	72	28
	Lumpectomy	54	21
	Mastectomy	130	51

Data from 256 female breast cancer patients were analyzed to characterize their demographic and clinical profiles (Table 1). Participants were predominantly aged 35–54 years (67%), with primary education being the most common (43%). The majority were married (50%), and most were unemployed (62%), with no regular income (63%). In terms of diagnosis, the largest proportion was at Stage 2 (38%) or Stage 3 (32%) of cancer progression. Surgical interventions included mastectomy in 51% of cases. The results highlight a diverse demographic profile among participants in this study, with a significant proportion being middle-aged and educated to at least a secondary level.

Economic challenges are evident, as many were unemployed and lacked a regular income, which may have influenced psychosocial distress, adherence, and prognostic outcomes. The distribution of cancer stages suggests a heterogeneous disease course, with late diagnosis being associated with a higher symptom load. These findings emphasize the necessity of personalized interventions that include clinical and socioeconomic aspects to improve patient quality of life and treatment outcomes.

Table 2

Severity of Psychosocial Distress, Anxiety, and Depression Scores among Participants

Distress Severity	(n=256)	(%)
Normal	37	14
Clinically Significant	59	23
Severely Distressed	160	63
Anxiety Scores		
Normal	70	27
Border Line	84	33
Clinical “Caseness”	102	40
Depression Scores		
Normal	64	25
Border Line	99	39
Clinical “Caseness”	93	36

Psychosocial distress, anxiety, and depression scores among the breast cancer patients was evaluated (Table 2). A majority experienced severe psychosocial distress (63%), with clinically significant anxiety (40%) and depression (36%). A notable proportion had significant distress (23%), borderline anxiety (33%), and depression (39%), while fewer participants reported normal levels of distress (14%), anxiety (27%), and depression (25%). This finding indicates a high prevalence of severe psychosocial distress, anxiety, and depression among breast cancer patients in the study cohort. These psychosocial challenges are substantial, with a significant proportion meeting the clinical thresholds for anxiety and depression. Addressing these issues is crucial in comprehensive cancer care to improve the patients' psychosocial well-being alongside their physical health outcomes. Interventions focusing on early identification, psychotherapy and integrated mental health support within oncological settings could potentially enhance overall patient resilience and treatment outcomes and quality of life.

Table 3

Prevalence based on the Problem Checklist

Problem	(n=256)	%
Finances	232	91
Anxiety	96	38
Fear	83	32
Enough food	78	30
Pain	77	30
Relationships	35	14
Treatment decisions	17	7
Meaning and purpose	11	4
Roles	6	2
Humiliation	3	1
Chemo trauma	1	0

Using a problem checklist, Table 3 shows the prevalence of various issues. Financial concerns were the most prevalent issue (91%), followed by anxiety (38%), fear (32%), and insufficient food (30%). Pain and relationship challenges were also common, affecting 30% and 14% of participants, respectively. Issues related to treatment decisions, finding meaning and purpose, and role changes were less frequent. The high prevalence of financial issues, anxiety, fear, and pain underscores the manifold challenges faced by breast cancer patients beyond medical considerations. These findings highlight the importance of comprehensive supportive care that addresses not only physical symptoms but also psychosocial and existential needs. Healthcare providers should consider integrating holistic interventions that address financial stressors, provide psychotherapy support for anxiety and fear, and ensure adequate pain management.

Table 4

Parameter Estimates for Predictors of Psychosocial Distress Severity

Parameter Estimates	**Variable**	**Odds Ratios**	***P-value***
Distress Severity	**Marital Status**		
	Single(RC)	1.000	
	Married	0.340	0.242
	Separated	0.271	0.130
	Widowed	1.386	0.810
	Education		
	At least Primary (RC)	1.000	
	Secondary	0.859	0.812
	College	0.599	0.386
Clinically Significant	**Income**		

	Some Income(RC)	1.000	
	No income	2.930	0.026
	Age		
	<45(RC)	1.000	
	45 And Above	1.095	0.843
	Stage of diagnosis		
	Late (RC)	1.000	
	Early	0.529	0.161
	Marital Status		
	Widowed(RC)	1.000	
	Single	0.694	0.681
	Married	0.587	0.524
	Separated	3.532	0.337
	Education		
	At least Primary (RC)	1.000	
	Secondary	1.397	0.576
	College	0.709	0.533
Severely Distressed	**Income**		
	Some Income(RC)	1.000	
	No income	5.500	0.001
	Age		
	<45(RC)	1.000	
	45 And Above	0.790	0.571
	Stage of diagnosis		
	Late (RC)	1.000	
	Early	0.321	0.006

a The reference category is: Normal.

The odds ratios for predictors of distress severity and clinical significance were examined (Table 4). Marital status, education level, and employment did not significantly predict distress severity, with separated women showing a slight increase in odds. Among those with clinically significant distress, participants with no income had significantly higher odds (OR = 2.930, p = 0.026), while age and early stage diagnosis were not significant predictors. For those severely distressed, having no income (OR = 5.500, p = 0.001) and early-stage diagnosis (OR = 0.321, p = 0.006) were significant predictors. Socioeconomic factors, notably income, appear to influence breast cancer patients' distress. Lack of income was strongly associated with clinically significant and severe distress, emphasising the need for targeted interventions. The testimonials from the participants painted a vivid picture of their financial struggles:

I believe most cancer patients die because of lack of money and mental stress. If you tell a person who does not even make KES 20 a day that a dose of the drug they need to take is KES 100,000, the person just gives up. We found a woman who was sleeping at the emergency room because she could not afford to go home and come for treatment the next day. Imagine sleeping at the emergency room with no food to eat and no place to clean herself. It is a wonder that cancer patients do not commit suicide en masse. Breast cancer patients have problems; let nobody slight their suffering. (T5)

Early-stage diagnosis appears to protect against severe distress, highlighting the potential benefits of early detection and intervention in lowering psychosocial suffering among breast cancer survivors.

Table 5

Parameter Estimates for Predictors of Anxiety

Parameter Estimates	Variable	Odds Ratios	*P-value*
Anxiety			
Border Line	**Marital Status**		
	Single(RC)	1.000	
	Married	2.265	0.178
	Separated	1.806	0.272
	Widowed	2.886	0.180
	Education		
	At least Primary(RC)	1.000	
	Secondary	1.360	0.508
	College	1.470	0.400
	Income		
	Some Income(RC)	1.000	
	No income	2.025	0.048
	Age		
	<45 (RC)	1.000	
	>45	1.016	0.965
	Diagnosis Stage		
	Late	1.000	
	Early	1.316	0.410
Clinical Caseness	**Marital Status**		
	Single(RC)	1.000	
	Married	2.782	0.078
	Separated	1.284	0.634
	Widowed	5.980	0.015
	Education		
	At least Primary(RC)	1.000	
	Secondary	2.289	0.080
	College	1.694	0.274
	Income		
	Some Income(RC)	1.000	
	No income	2.840	0.004
	Age		
	<45 (RC)	1.000	
	>45	1.229	0.559
	Diagnosis Stage		
	Late	1.000	
	Early	0.764	0.419

a The reference category is: Normal.

The study used odds ratios to identify anxiety predictors (Table 5). Age, marital status, education, and employment did not predict borderline anxiety, but income did (OR = 2.025, p = 0.048). Among those with clinical anxiety, being widowed (OR = 5.980, p = 0.015) and having no income (OR = 2.840, p = 0.004) were significant predictors. The findings suggest that age, marital status and education level may not strongly predict anxiety severity among breast cancer patients, but widowhood and financial insecurity were significantly associated with clinical anxiety. However, the key informant narratives revealed that education level was associated with anxiety: *educated women have more information, and they seem to be more "triggered" and distressed than women with little or no education.* (C1: Oncology Resident). These findings underscore the reality that stressors such as BC diagnosis beget additional stressors, such as financial distress.

Table 6

Parameter Estimates for Predictors of Depression

Parameter Estimates	Variable	Odds Ratios	*P-value*
Depression			
	Marital Status		
	Single(RC)	1.000	
	Married	1.196	0.777
	Separated	0.691	0.526
	Widowed	1.566	0.571
	Education		
	At least Primary(RC)	1.000	
Border Line	Secondary	1.138	0.784
	Tertiary/College	0.599	0.260
	Income		
	Some Income(RC)	1.000	
	No income	2.543	0.009
	Age		
	<45 (RC)	1.000	
	>45	1.164	0.669
	Stage of diagnosis		
	Late (RC)	1.000	
	Early	0.956	0.895
	Marital Status		
	Single(RC)	1.000	
	Married	0.992	0.990
	Separated	0.964	0.951
	Widowed	2.420	0.273
	Education		
	At least Primary(RC)	1.000	

Clinical Caseness	Secondary	2.364	0.105
	Tertiary/College	1.145	0.795
	Income		
	Some Income(RC)	1.000	
	No income	4.723	0.001
	Age		
	<45 (RC)	1.000	
	>45	0.860	0.687
	Stage of diagnosis		
	Late (RC)	1.000	
	Early	0.504	0.049

a The reference category is: Normal.

In Table 6, findings on depression severity predictors using odds ratios are presented. Having no income was a significant predictor of clinical depression (OR = 4.723, p = 0.001) and early diagnosis (OR = 0.504, p = 0.049). In this cohort of BC patients, marital status, age, education, and employment did not predict depression severity. Reciprocal determinism, which suggests the interplay between personal factors, behaviours, and environmental influences on emotional outcomes, may explain this finding. As previously indicated, financial instability significantly predicted clinical depression, with early diagnosis showing an inversely significant association. During the qualitative phase, it was evident that some participants were experiencing mental and emotional pain:

> I feel like I have no purpose; I am unable to do the things I used to do or care for my husband; I feel sad and hopeless, and sometimes I want to end it all. Before accepting the disease, suicidal thoughts are possible. (T10 – cried throughout the interview)

These findings suggest that breast cancer patients need psychotherapy and financial assistance to alleviate depression.

Discussion

Almost half of the women were 44 or younger and diagnosed late (stage III or IV). In Kenya, Nakitare (2012) found 49.3% of the sample was under 50, showing a decreasing diagnosis age. This conclusion supports Middle Eastern studies (Surbhi et al., 2022), but contradicts Western convention that postmenopausal women have higher breast cancer rates (Bidoli et al., 2019). A large proportion of unemployed women was concerning. Employment affects income, treatment costs, and other family needs. The narratives revealed that BC patients lost their jobs due to absenteeism. The finding is congruent with that of Heuser et al. (2018) who found that BC diagnosis and treatment jeopardised employment.

Our study found strong relationships between income, diagnostic stage, distress, clinical anxiety, and depression. Specifically, income

emerged as a strong predictor of distress across the board. The current study's findings support those of Ngan et al. (2023)who found that the financial cost of cancer treatment produces distress equal to chemotherapy toxicity. It is also consistent with Ayyala et al. (2020) who found substantial financial distress among BC patients from low-income households. However, our study reported a significantly lower prevalence of severe depression (36%), compared to Saina et al.'s (2021) Eldoret study, which found a prevalence of 59.3%. Furthermore, Alagizy et al. (2020) discovered a prevalence of moderate to severe depression (68.6%) and anxiety (73.3%) among Egyptian respondents. The late diagnosis stage is associated with a higher symptom burden and a worse prognosis; thus, it is not surprising that women with an early diagnosis had a lower likelihood of experiencing severe emotional distress. Our findings are consistent with those of Aitken and Hossan (2022), who found that late-diagnosed breast cancer patients report depression and a fatalistic outlook.

Even though there were no significant relationships between age and marital status, qualitative findings revealed that marriage came with the added benefit of two insurance coverage, reducing the financial burden. Unmarried women, with only one NHIF coverage, were primarily responsible for financing their treatment out-of-pocket and reported higher levels of distress. Supporting Surbhi et al. (2022) our participants' testimonies revealed that younger women had additional emotional distress, such as dealing with their diagnosis and the potential effects on their professions, body image, social and family life, and fertility. Older women, on the other hand, experienced a higher symptom load and physical distress.

4.0 Conclusion

This study investigated the predictors of psychosocial distress among women diagnosed with breast cancer in Nairobi County, Kenya. Through comprehensive analysis of clinical and socio-demographic factors, we identified significant associations with distress severity, anxiety, and depression levels. Key findings include the influence of income status, age, marital status, education level, and diagnosis stage on the psychosocial well-being of breast cancer patients.

Limitation of the Study

- Self-reported measures and cross-sectional data collection may bias causality investigation for predictors of psychosocial distress.
- The study examined socioeconomic determinants but not cultural implications or healthcare resource accessibility, which may have limited its distress predictor interpretation.
- Participants' willingness to disclose sensitive information related to their emotional well-being and socio-demographic status may have influenced the study's results, potentially leading to underestimation or overestimation of distress levels.

5.0 Recommendations

- Implement routine screening protocols for psychosocial distress in breast cancer care settings.
- Develop tailored intervention programs that address the specific needs identified, such as financial support for patients with limited income and psychotherapy for those experiencing severe distress.
- Increase healthcare professionals' awareness of clinical and socio-demographic aspects determining breast cancer patients' psychosocial distress.
- Advocate for policies that ensure equitable access to healthcare resources and support services for breast cancer patients across different socioeconomic backgrounds.
- Conduct longitudinal studies to explore the long-term effects of psychosocial distress on treatment adherence, quality of life, and overall survival rates among breast cancer patients in diverse settings.

Contribution to Theory, Policy and Practice

The results of the study reinforce Pearlin et al.'s (1981) Stress Process Model (SPM) as a method for elucidating psychosocial distress in BC patients. A BC diagnosis is a distressing event that exacerbates stress throughout the disease continuum, resulting in long-term strains and additional stressors on the body, finances, relationships, and emotional health. This investigation categorized psychosocial distress into three conceptual domains: stress sources, stress moderators, and outcomes. The findings corroborate the Fundamental Cause Theory of Link and Phelan (1995). This theory asserts that the socioeconomic status of breast cancer patients fundamentally influences their psychosocial distress, treatment accessibility, affordability, timeliness, compliance, and prognostic outcomes. Ultimately, the social cognitive theory offered a perspective on the potential influence of human agency, self-efficacy, and reciprocal determinism on the psychosocial distress of women diagnosed with breast cancer.

References

Aamir, M., Al Ameri, M., Ganesan, S., Alharmoudi, F., Alshehhi, A., Alhashmi, F., Alawlaqi, D., Cantarutti, F. M., Dubrow-Marshall, L., Dubrow-Marshall, R., & Zaher, W. A. (2022). Understanding the psychosocial needs of breast cancer survivors in the United Arab Emirates: A qualitative study. *Discover Psychology*, *2*(1), 43-56. https://doi.org/10.1007/s44202-022-00056-0

Aitken, L.-A., & Hossan, S. Z. (2022). The Psychological Distress and Quality of Life of Breast Cancer Survivors in Sydney, Australia. *Healthcare*, *10*(10), 2017-2031. https://doi.org/10.3390/healthcare10102017

Alagizy, H. A., Soltan, M. R., Soliman, S. S., Hegazy, N. N., & Gohar, S. F. (2020). Anxiety, depression and perceived stress among breast cancer patients: Single institute experience. *Middle East Current Psychiatry*, *27*(1), 1-10. https://doi.org/10.1186/s43045-020-00036-x

Ayyala, D. N., Department of Population Health Sciences, Medical College of Georgia, Augusta University, 1120 15th Street, Augusta, GA 30912, USA, Tingen, M. S., Department of Medicine, Medical College of Georgia, Augusta University, Augusta, GA, USA & Georgia Cancer Center, Augusta University, Augusta, GA, USA, Cortes, J. E., & Department of Medicine, Medical College of Georgia, Augusta University, Augusta, GA, USA & Georgia Cancer Center, Augusta University, Augusta, GA, USA. (2020). Financial distress among breast cancer survivors. *Current Cancer Reports*, *2*(1), 48–53. https://doi.org/10.25082/CCR.2020.01.004

Bandura, A. (1998). Health promotion from the perspective of social cognitive theory. *Psychology & Health*, *13*(4), 623–649. https://doi.org/10.1080/08870449808407422

Bidoli, E., Virdone, S., Hamdi-Cherif, M., Toffolutti, F., Taborelli, M., Panato, C., & Serraino, D. (2019). Worldwide Age at Onset of Female Breast Cancer: A 25-Year Population-Based Cancer Registry Study. *Scientific Reports*, *9*(1), 14111. https://doi.org/10.1038/s41598-019-50680-5

Boxley, L., Flaherty, J. M., Spencer, R. J., Drag, L. L., Pangilinan, P. H., & Bieliauskas, L. A. (2016). Reliability and factor structure of the Hospital Anxiety and Depression Scale in a polytrauma clinic. *Journal of Rehabilitation Research and Development*, *53*(6), 873–880. https://doi.org/10.1682/JRRD.2015.05.0088

Carlson, L. E., Zelinski, E. L., Toivonen, K. I., Sundstrom, L., Jobin, C. T., Damaskos, P., & Zebrack, B. (2019). Prevalence of psychosocial distress in cancer patients across 55 North American cancer centers. *Journal of Psychosocial Oncology*, *37*(1), 5–21. https://doi.org/10.1080/07347332.2018.1521490

Donovan, K. A., Grassi, L., McGinty, H. L., & Jacobsen, P. B. (2014). Validation of the Distress Thermometer worldwide: State of the science: Validation of Distress Thermometer. *Psycho-Oncology*, *23*(3), 241–250. https://doi.org/10.1002/pon.3430

Ebob-Anya, B.-A., & Bassah, N. (2022). Psychosocial distress and the quality of life of cancer patients in two health facilities in Cameroon. *BMC Palliative Care*, *21*, 96.

https://doi.org/10.1186/s12904-022-00981-w

Faroughi, F., Fathnezhad-Kazemi, A., & Sarbakhsh, P. (2023). Factors affecting quality of life in women with breast cancer: A path analysis. *BMC Women's Health*, *23*(1), 578. https://doi.org/10.1186/s12905-023-02755-9

Flick, U. (Ed.). (2018). *The Sage handbook of qualitative data collection*. Sage Reference.

Heuser, C., Halbach, S., Kowalski, C., Enders, A., Pfaff, H., & Ernstmann, N. (2018). Sociodemographic and disease-related determinants of return to work among women with breast cancer: A German longitudinal cohort study. *BMC Health Services Research*, *18*(1), 1000. https://doi.org/10.1186/s12913-018-3768-4

Link, B. G., & Phelan, J. (1995). Social Conditions as Fundamental Causes of Disease. *Journal of Health and Social Behavior*, *35*, 80. https://doi.org/10.2307/2626958

Mukherjee, A., Mazumder, K., & Ghoshal, S. (2018). Impact of different sociodemographic factors on mental health status of female cancer patients receiving chemotherapy for recurrent disease. *Indian Journal of Palliative Care*, *24*(4), 426. https://doi.org/10.4103/IJPC.IJPC_64_18

Muliira, R., Salas, A., & O'Brien, B. (2017). Quality of life among female cancer survivors in Africa: An integrative literature review. *Asia-Pacific Journal of Oncology Nursing*, *4*(1), 6-17. https://doi.org/10.4103/2347-5625.199078

Muzzatti, B., Bomben, F., Flaiban, C., Piccinin, M., & Annunziata, M. A. (2020). Quality of life and psychological distress during cancer: A prospective observational study involving young breast cancer female patients. *BMC Cancer*, *20*(1), 758-766. https://doi.org/10.1186/s12885-020-07272-8

Nakitare, D. S. K. (2012). *Health Related Quality Of Life Of Breast Cancer Patients At Kenyatta National Hospital*. University of Nairobi.

Ndetei, D., Musyimi, C., Tele, A., Musau, A., Gitonga, I., & Mutiso, V. (2018). Psychological Well-Being and Social Functioning Across the Cancer Stages: Implications for Palliative Care. *Journal of Social Work in End-of-Life & Palliative Care*, *14*(2–3), 194–208. https://doi.org/10.1080/15524256.2018.1472718

Ngan, T. T., Tien, T. H., Donnelly, M., & O'Neill, C. (2023). Financial toxicity among cancer patients, survivors and their families in the United Kingdom: A scoping review. *Journal of Public Health*, *45*(4), 702–713.

https://doi.org/10.1093/pubmed/fdad143

Pearlin, L. I., Menaghan, E. G., Lieberman, M. A., & Mullan, J. T. (1981). The Stress Process. *Journal of Health and Social Behavior*, *22*(4), 337-356. https://doi.org/10.2307/2136676

Riba, M. B., Donovan, K. A., Andersen, B., Braun, Ii., Breitbart, W. S., Brewer, B. W., Buchmann, L. O., Clark, M. M., Collins, M., Corbett, C., Fleishman, S., Garcia, S., Greenberg, D. B., Handzo, Rev. G. F., Hoofring, L., Huang, C.-H., Lally, R., Martin, S., McGuffey, L., … Darlow, S. D. (2019). Distress Management, Version 3.2019, NCCN Clinical Practice Guidelines in Oncology. *Journal of the National Comprehensive Cancer Network*, *17*(10), 1229–1249. https://doi.org/10.6004/jnccn.2019.0048

Safar, H., & Mazanec, S. R. (2023). Relationship between Symptom Burden and HRQOL among Kuwaiti Women Recently Diagnosed with Breast Cancer: A Cross-Sectional Study. *Asian Pacific Journal of Cancer Prevention*, *24*(4), 1435–1441. https://doi.org/10.31557/APJCP.2023.24.4.1435

Saina, C., Gakinya, B., & Songole, R. (2021). Factors associated with Depression among Patients with Breast Cancer at Moi Teaching and Referral Hospital, Eldoret, Kenya. *Journal of Anxiety & Depression*, *4*(1), 1-14. https://doi.org/10.46527/2582-3264.133

Surbhi, Gupta, H., Brar, G. K., & Jalota, V. (2022). Quality of life and its sociodemographic determinants in breast cancer patients. *Industrial Psychiatry Journal*, *31*(2), 313–317. https://doi.org/10.4103/ipj.ipj_6_21

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*, *19*(6), 1661-1669. https://doi.org/10.22034/APJCP.2018.19.6.1661