Supportive Care Needs of Jordanian Women Undergoing Breast Cancer Treatments

Raya Yousef Al-Husban[1](✉) 📷 and Rogia Salaam Maabreh[2] 📷

[1] Faculty of Nursing, Zarqa University, Zarqa, Jordan
ralhusban@zu.edu.jo

[2] Prince Bin Abdullah II Academy for Civil Protection, Al-Balqa Applied University, As-Salt, Jordan

Abstract. Living with breast cancer and experiencing a wide range of issues necessitates supportive care (SC). SC provides the necessary services for those affected by cancer to meet their physical, psychological, informational, practical, and spiritual needs. Therefore, this study's objectives were to identify the SCN of women undergoing breast cancer treatments and identify the predictors of SCN. A descriptive quantitative design was used using a convenience sample of 289 women with breast cancer drawn from the two largest cancer centers in Amman city. SCNs were measured using the Supportive Care Needs Survey Short Form (SCNS-SF -34). The reported needs were mainly within the following domains: informational (Mean, 34.07, SD = 8.91), physical (Mean = 16.85, SD = 4.74, and psychological (Mean = 28.49, SD = 7.20). Results also showed that SCN was influenced by the participants' education (R = 0.395), stage of illness (R2 = 0.156), and functional status (R2 = 0.129), produced at (F = 10.73 and P ≤ .001). It indicated that 16% of the variance in the needs of women with breast cancer could be predicted by stage, education, and the functional status of the women. In conclusion, a routine and systematic assessment of the SCN, social support, available resources such as trained clinical nurse specialists, and access to information is recommended to provide appropriate support.

Keywords: Breast Cancer · Supportive care needs · Jordanian Women · Cancer treatment

1 Introduction

Breast cancer is one of the most common types of cancer among women, affecting around 2.3 million in 2020 and resulting in 11.7 of all newly diagnosed cancer cases [1, 2]. The latest statistics of the Jordanian National Cancer Registry showed that there were 1,138 breast cancer cases among Jordanian women, with a crude incidence rate of 34.1 per 100,000 female populations [3]. Despite the extensive awareness campaign and endeavor to lower the incidence of breast cancer in Jordan. However, the prevalence has been dramatically rising compared to women in Western countries, and women are developing breast cancer at younger ages and with more advanced illnesses. Around

15.6% of newly diagnosed breast cancer patients were under 40 years old [4]. Patients with breast cancer have multifaceted supportive care needs (SCN) that vary throughout the illness trajectory [5]. Supportive care is provided to meet the patient's physical, psychological, spiritual, informational, and practical needs [6]. Malaysian breast cancer patients' most common unmet SCN were from the psychological and physical domains [7]. Also, the psychological and health system/information domains had the highest SCN among women with breast cancer, and fear of cancer recurring or spreading was the most common need reported [8]. Optimistically, all domains of SC needs are decreasing over time; only the levels of Health System and Information care needs were elevated over time [9]. Asian women report more significant information needs and lower psychological needs than Western women [8].

Depressive symptoms and time since diagnosis were the most consistent predictors of SCN among Mexican breast cancer patients [5, 7, 9]. Moreover, the progressive stage, more symptom load, shorter time since diagnosis, higher level of distress, and earlier age were predictors of higher levels of SCN [8]. Early breast cancer survivors with late-stage diagnoses with more unmet psychological and physical needs were more likely to have a poor QOL [7]. Early detection of unmet SCN is incredibly beneficial to building preventive programs for high-risk groups [21]. The assessment of SCN is central to developing appropriate interventions that may improve the quality of life of women with BC [8]. Through assessing patients' perceptions of their needs, healthcare providers, including nurses, can influence healthcare policies to allocate resources to those identified needs by the patients themselves. Therefore, this study aimed to identify the SCN of women undergoing breast cancer treatments and to identify predictors of the needs of women undergoing breast cancer treatment.

2   Research Method

This study used a quantitative cross-sectional design to identify the SCN of women undergoing breast cancer treatments. For this study, the sample was drawn from the leading referral centers for cancer care in Jordan. Both hospitals provide specialized and comprehensive care for patients with cancer: King Hussein Medical Center (KHMC) (an independent, non-governmental, and non-profit institution and King Hussein Cancer Center (KHCC) (a specialized and comprehensive cancer center).

2.1   Sample

The populations from which the sample was drawn were women diagnosed with breast cancer, living in Jordan, and undergoing active treatment at the selected sites. Inclusion criteria were: Jordanian women, 18 years or older, informed of their diagnosis and had undergone breast cancer treatment. The sample size was determined based on Cohen's table (1988) as cited in [10]; for the multiple regression statistical tests, a power analysis was performed: to achieve a power of 0.80, and $\alpha = 0.05$ for ten variables, with moderate effect size, the number of subjects needed to reject the null hypothesis that $R2 = $ zero was 119. However, to compensate for missing data and to have a more representative sample based on the expected population, 300 participants were needed using the power calculator online (Raosoft.com, 2011) with a 95% Confidence Interval (CI).

2.2   Data Collection Tools

Data were collected using the Demographic Data Questionnaire and the Supportive Care Needs Survey Short Form (SCNS-SF) [11]. The Supportive Care Needs Survey Short Form (SCNS-SF-34) [11] was used to measure the physical, psychological, practical, informational, and sexual needs of women with breast cancer. The SCNS-SF-34 consists of 34 items: The psychological domain (ten items), the health system and information domain (11 items), the physical and daily living domain (five items), the patient care and support domain (five items), and the sexual domain (three items). Participants were asked to rate each item of the 34 items on five–point Likert- type scale that ranged from: (1) No need "Not applicable"; (2) No need "Satisfied" 3) "Low need" (4) "Moderate need"; to (5) "High need". A higher score for each item, three or more, indicates a need for assistance. The total score was calculated by summing the score of all items (ranging from 34–170). A score of 102 or more indicates a need. The SCNS-SF instrument was translated from English into Arabic by two bilingual persons fluent in Arabic and English. Later, it was back-translated from Arabic to English to ensure the equivalence between the two versions.

2.3   Data Collection Procedure

Prior to data collection, approval was granted from the ethics research committee at the University of Jordan and the Directorate of the selected setting. Before enrolling participants, the researcher discusses the study's nature and objectives with the hospital and unit managers to gain access to the participants. Then, the researcher approached all women undergoing different types of treatment for breast cancer in person in the waiting room, asking them to participate in the study. Women who met the study's inclusion criteria were given a written invitation letter and a full explanation about the study, and they had signed the written consent. The researcher reassured them that their participation was voluntary and that they had the right to withdraw from the study at any time. The researcher maintained confidentiality by reassuring the participants that all the information obtained would be used only for research purposes and that findings would not be publicly reported in a manner that would make them identified.

3   Results

The researcher received 289 completed questionnaires with a response rate of 93.2%. The mean age of participants was 48 years ($SD = 10.57$), with a range of 26 years. The majority of the participants were Muslims (90.7%), and most of them were unemployed. The demographic and clinical characteristics of the participants are presented in Table 1.

3.1   Supportive Care Needs

Inspection of the results indicated a moderate level of needs, with the highest mean in the information and the psychological domains and no need in the practical domain, as illustrated in Table 2.

Table 1. Demographic and clinical characteristic of the sample (n = 289).

Characteristics	Categories	Number	Percentage (%)
Age	18–50 years old	187	64.8
	51–73 years old	102	35.3
Hospital	KHMC	199	68.9
	KHCC	90	31.1
Religion	Muslim	262	90.7
	Christian	27	9.3
Education	Up to High school	209	72.3
	Post high school	80	27.7
Occupation	Employed	37	12.8
	Unemployed	252	87.2
Income	<400	198	68.5
	>400	91	31.5
Children	None	31	10.7
	1–5	111	38.4
	6–10	134	46.4
	>10	13	4.5
Insurance	Yes	215	74.4
	No	74	25.6
Time post treatment	1–6 month	284	98.2
	7–24 months	5	1.7
Stage of cancer	First	60	20.8
	Second	122	42.2
	Third	88	30.4
	Fourth	19	6.6
Type of surgery	None	22	7.6
	Lumpectomy	64	22.1
	Mastectomy	190	65.7
	Bilateral mastectomy	13	4.5
Table 3 Cont't Dose of radiotherapy	Not received	182	63
	1–20 dose	61	21.2
	21–40 dose	46	15.8
Type of treatment	Chemotherapy	21	7.3
	Surgery	40	13.8
	Mixed treatment modalities	272	78.9

Also, the findings of this study revealed that all items included in the physical, psychological, sexual, and informational subscale were reported as having little to moderate levels of need, as presented in Table 3. However, the patient care and support domain was scored as having no need.

Table 2. Total Mean Scores Summary of the Main Needs Domains in SCNS-SF (N = 289).

Domain	Mean	SD	Median	Actual Range	Possible Range
Physical	16.85	4.74	17.00	19	5–25
Psychological	28.49	7.20	30.00	38	10–50
Sexual	9.76	3.94	10.00	12	5–15
Patient care and support	11.73	3.74	10.00	20	5–25
Information	34.07	8.91	34.5	41	11–55
Total need domain scores	101.4	15.60	101.5	110	34–170

In order to identify predictors of needs among Jordanian women undergoing breast cancer treatment, stepwise regression analysis was performed: Each subscale score of the SCNS-FS, as well as the total score, were regressed for the predictor variables of age, education, income, stage of cancer, time post-diagnosis, types of treatment, number of children. Inspection of the Pearson Correlation Coefficients revealed that the highest correlation was found between income and education (r = 0.46, p ≤ 0.001). Thus the correlations between the predictor variables did not indicate high multicollinearity for the overall multiple regression, and the data were within normal distribution [12].

The overall regression included six variables (age, income, time post-diagnosis, types of treatment, social well-being, and the number of children). Other variables were excluded from the final regression model because they were not significantly able to predict the needs of women with breast cancer. The education was coded and entered as a dummy coded variable based on the regression analysis. The education, stage, and functional status; were statistically significant and predicted 16% of the variance in the SCN of women with breast cancer, R = 0.395, R2 = 0.156, adjusted R2 = 0.129, and the model produced at F = 10.73, and P ≤ .001. The results of the regression analysis are presented in Table 4.

To summarize, education, stage of cancer, and functional status explained 11% of the variance in the physical needs of women with breast cancer. The stage of cancer, social well-being, and functional status explained 18% of the variance in the psychological needs of the participants. Regarding the informational domain, the education and cancer stage explained 31% of the variance in this domain. The cancer stage was a weak predictor of the practical needs of Jordanian women with breast cancer, and it explained only 0.07% of the needs. Functional status was also a weak predictor of sexual needs, which explained only 0.03% of the variance in this domain; Table 4 illustrates the significant predictors of the SCN.

Table 3. Descriptive Statistics of the SCN (n = 289)

Supportive care domain	Items	Mean	SD
Physical needs	1. Not being able to do the things you used to do	3.62	1.25
	2. Fatigue	3.56	1.26
	3. Work around the home	3.35	1.31
	4. Pain	3.31	1.28
	5.Feeling unwell a lot of the time	3.01	1.44
Psychological needs	1. Anxiety	3.5	1.50
	2. Fears about the cancer spreading	3.46	1.61
	3. Worries about those who are close to you	3.21	1.42
	4. Feeling of sadness	3.10	1.56
Sexual need	1. Given information about sexual relationships	3.62	1.66
	2. Changes in sexual feelings	3.12	1.58
	3. Changes in sexual relationships	3.03	1.56
Information needs	1. Having one member of hospital staff with whom you can talk to about all aspects of your condition	3.85	1.45
	2. Having access to professional counseling	3.74	1.43
	3. Being given information about aspects of managing your illness and side-effects at home	3.66	1.43
	4. Being given written information about the important aspects of your care.	3.59	1.40
	5. Being informed about things you can do to help yourself to get well	3.00	1.34

The mean > 3 indicates needs.

4 Discussion

This study investigated the SCN and the influencing factors of Jordanian women receiving BC therapy. Physically, participants described their physical needs as moderate, including fatigue and pain. These findings agree with earlier research from the following studies [13–17]. According to Jansen et al. [17], 66% of patients reported having the greatest need for physical treatment. Therefore, early evaluating and treating the physical symptoms are critical to enhancing the quality of life for BC-affected women. Psychologically, participants described feeling depressed, anxious, and afraid that the disease would spread. These findings are consistent with the following studies [8, 13, 17, 18]. Similarly, Martinez et al. (2019) found that clinical distress related to unmet

Table 4. Stepwise Multiple Regressions of the significant predictors of the SCN (N = 289)

Domain	Variable	B	SE	B	P value	F change	P value
physical domain	Stage of cancer	5.846	1.584	0.210	**0.001*****	21.170	**0.001*****
	Education	−1.94	1.445	−0.085	0.180	4.537	**0.034***
	Functional status	−7.995	1.518	−0.303	**.001*****	27.751	**0.001*****
	Predictors of physical needs final model produced at α = 0.05, F = 4.356, P < 0.001, R2 = 0.111.						
Psychological domain	Stage of cancer	5.169	1.544	0.191	**0.001*****	15.851	**.001*****
	Types of treatment	.010	.626	.001	**0.017***	.009	.186
	Social wellbeing	−2.119	1.720	−.071	.219	17.704	**.001*****
	Functional status	−7.667	1.479	−.300	**.001*****	26.078	**.001*****
	Predictors of psychological needs final model produced at α = 0.05, F = 7.161, P < 0.001, R2 = 0.180.						
Informational domain	Education	−1.375	1.297	−.071	.290	8.328	**.004***
	Stage of cancer	5.164	1.422	.217	**.001*****	12.249	**.001*****
	Predictors of informational needs final model produced at α = 0.05, F = 4.356, P < 0.001, R^2 = 0.316						
Practical domain	Stage of cancer	4.855	1.302	.227	**.001*****	14.234	**.001*****
	Predictors of patient care and support needs final model produced at α = 0.05, F = 2.689, P < 0.007, R2 = .071.						
Sexual domain	Functional status	−5.504	2.288	−.151	**.017***	5.788	**.017***
	Predictors of sexual needs final model produced at α = 0.05, F = 1.282, P < .253, R2 = 0.035						

psychological needs affects one in four women. Focus groups, Social media can be used for patient support, advocacy, and information sharing [19].

Also, participants identified information needs as critical needs. It may be related to dealing with new treatment plans and time and resource constraints that limit the quality of the information offered. These findings align with [8, 9, 13, 14, 22] studies. Therefore, health professionals need to be aware of the informational needs of patients throughout cancer care, and there is a need for written health educational content on the web in Arabic and mobile applications. The availability of clinical nurse specialists

to better meet these needs. Regarding sexual needs, participants reported inadequate information about the changes in their sexual relationships and sexual feelings. This study's findings align with the previous studies [13, 15]. These changes can be explained by the psychological pain experienced post-BC diagnosis and treatment and by the aggressive treatment side effects. Nurses should normalize the sexuality discussion using cultural sensitivity, caring, knowledge, skills, and appropriate time. The findings revealed that the best predictors of SCN were cancer stage, education, and functional status. Young age, recent primary surgery, and fear of a cancer recurrence were all linked to unmet SCN [14]. Similarly, Cheng et al. [20] found that education and the time since cancer diagnosis were the main predictors of the demand for knowledge [20, 21, 23]. Also, the SCN was primarily predicted by education and age in the study by Brédart et al. [18, 22]. Therefore, it is crucial to consider these factors while deciding how to care for women with BC.

5 Implications for Clinical Practice

The present study recommended a routine and systematic assessment of the SCN as a critical first step in providing appropriately tailored interventions for women with BC. Physically, common symptoms, such as pain, and fatigue, need ongoing assessment and tailored interventions. The availability of a trained clinical nurse specialist in cancer care may improve the quality of care provided. Psychologically, women with breast cancer are in intense need of psychological care. Assessment of distress throughout all phases of the breast cancer journey is fundamental to ensure appropriate intervention according to the treatment modality and the phase of the cancer continuum experienced. Nurses can play a significant role in helping women with BC to cope with their condition. Therefore, continued assessment of sexual problems using a cultural sensitive approach may provide the basis for counseling, education, and management of these problems. Therefore, future research is needed to explore the needs and test interventions that aim to improve the quality of supportive care for women with breast cancer.

6 Conclusion

In conclusion, Jordanian women receiving BC treatment reported unmet SC needs in physical, psychological, and informational domains. Therefore, routine SCN assessments and early management are required for women with breast cancer since unmet needs can increase the cancer burden and their suffering. Education, stage, and functional level were predictors of the demands of breast cancer patients in women. Healthcare professionals should therefore give more attention to meeting the SCN of educated women with various illness stages and poor functional status. Jordanian women with BC need accurate and pertinent information, symptom management, emotional support, effective communication, and trusted relationships.

References

1. Sung, Hyuna, et al.: Global cancer statistics 2020: GLOBOCAN estimates of incidence and mortality worldwide for 36 cancers in 185 countries. CA: a cancer journal for clinicians 71.3: 209–249 (2021).

2. Wilkinson, Louise, and Toral Gathani.: Understanding breast cancer as a global health concern. The British Journal of Radiology 95.1130: 20211033 (2022).

3. Abdel-Razeq, Hikmat, Fadwa Attiga, and Asem Mansour.: Cancer care in Jordan. Hematology/oncology and stem cell therapy 8.2: 64–70 (2015).

4. Abdel-Razeq, Hikmat, Asem Mansour, and Dima Jaddan.: Breast cancer care in Jordan. JCO global oncology 6: 260–268 (2020).

5. Pérez-Fortis, A., Schroevers, M. J., Fleer, J., Alanís-López, P., Veloz-Martínez, M. G., Ornelas-Mejorada, R. E., & Sosa, J. J. S.. Psychological burden at the time of diagnosis among Mexican breast cancer patients. Psychooncology, 26 (1), 133–136 (2017).

6. Fitch, Margaret. Supportive care Framework. Canadian Oncology Nursing Journal/Revue canadienne de soins infirmiers en oncologie 18.1: 6–14 (2008).

7. Edib, Z., & Kumarasamy, V. binti Abdullah N, Rizal AM, Al-Dubai SAR.: Most prevalent unmet supportive care needs and quality of life of breast cancer patients in a tertiary hospital in Malaysia. Health and quality of life outcomes, 14(1) (2016).

8. Fiszer, C., Dolbeault, S., Sultan, S., & Brédart, A. Prevalence, intensity, and predictors of the supportive care needs of women diagnosed with breast cancer: a systematic review. Psycho-oncology, 23(4), 361–374 (2014).

9. Pérez-Fortis, A., Fleer, J., Schroevers, M. J., Alanís López, P., Sánchez Sosa, J. J., Eulenburg, C., & Ranchor, A. V.Course and predictors of supportive care needs among Mexican breast cancer patients: A longitudinal study. Psycho-oncology, 27(9), 2132–2140 (2018).

10. Polit, D. Statistics and Data analysis for Nursing Research. (2nd edition), Pearson Education Inc. (2010).

11. Boyes, A. Girgis, A. and Lecathelinais, Ch. Brief assessment of adult cancer patients' perceived needs: development and validation of the 34-item Supportive Care Needs Survey (SCNS). Journal of Evaluation in Clinical Practice, 15, 1356–-1294 (2008).

12. Warner, M. R. Applied statistics: from bivariate through multivariate techniques. (1ST edition). Sage Publications, Inc. (2008).

13. Cai, Ying-Jie.: Supportive care needs of Chinese women with newly diagnosed breast cancer prior to adjuvant chemotherapy. Number 3/May 2021 48.3 (2021): 341–349.

14. Faller, Hermann, et al.: Supportive care needs and quality of life in patients with breast and gynecological cancer attending inpatient rehabilitation. A prospective study. Acta Oncologica 58.4 (2019): 417–424.

15. Doubova, Svetlana V., and Ricardo Pérez-Cuevas.: Association of supportive care needs and quality of patient-centered cancer care with depression in women with breast and cervical cancer in Mexico. Psycho-Oncology 30. 591–6014 (2021).

16. Ellegaard, Mai-Britt Bjørklund, et al.: Fear of cancer recurrence and unmet needs among breast cancer survivors in the first five years. A cross-sectional study. Acta oncologica 56.2 314–320 (2017).

17. Jansen, Femke, et al.: Cancer survivors' perceived need for supportive care and their attitude towards self-management and eHealth. Supportive Care in Cancer 23.6: 1679–1688 (2015).

18. 19. Brédart, A., et al.: Identifying trajectory clusters in breast cancer survivors' supportive care needs, psychosocial difficulties, and resources from the completion of primary treatment to 8 months later. Supportive Care in Cancer 24.1 (2016): 357–366.

19. Hamilton, Ashleigh C., et al.: Early-Onset Cancers in Adults: A Review of Epidemiology, Supportive Care Needs and Future Research Priorities. Cancers 14.16: 4021 (2022).

20. 21. Cheng, K. K. F., and et al.: A mixed-methods study to explore the supportive care needs of breast cancer survivors. Psycho-Oncology 27.1: 265–271 (2018).

21. 22. Martínez Arroyo, O., Andreu Vaíllo, Y., Martínez López, P., & Galdón Garrido, M. J. Emotional distress and unmet supportive care needs in survivors of breast cancer beyond the end of primary treatment. Supportive Care in Cancer, 27(3), 1049–1057 (2019).

22. Al-Maghrabi I., Al-Tal, Sh.: The effect of the level and type of information processing on the performance of semantic and event memory. Zarqa Journal for research and studies in humanities, 22(3), (2022)
23. Ibrahim N., Alguzo S.: Despair and Depression in John Osborne's Look Back in Anger. Zarqa Journal for research and studies in humanities.20 (1), (2020).