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RESEARCH ARTICLE

Care Needs and Symptom Burden among Oncology Patients Presenting to Outpatients Clinics in Kuwait

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Abstract:

Background:

Patients with serious illnesses, such as oncology patients, experience sophisticated and interrelated symptoms. Mostly, they are not given proper symptom management, negatively affecting their quality of life, functioning, and satisfaction.

Aim:

The current study aimed to assess the general patients' health status, functioning needs, and the severity of symptoms among oncology patients in outpatient clinics in Kuwait.

Methods:

A descriptive cross-sectional design was used to collect data from 460 oncology patients recruited from the chemotherapy day-care center and the radiotherapy treatment clinics in a large oncology center in Kuwait. Data were collected using the EORTC QLQ-C30 questionnaire.

Results:

Kuwaiti patients diagnosed with cancer have poor well-being and functioning. The best level of functioning among the patients was cognitive functioning, followed by physical functioning, and the lowest functioning was emotional functioning. In terms of symptom burden, generally, the patients had low levels of symptom severity/ burden (all symptoms scored less than 50%). Furthermore, the highest severity was insomnia, followed by fatigue.

Conclusion:

There is a need to develop a care model that adequately assesses oncology patients in outpatient settings and meets their needs. The implications of the current study are derived from the reported limitation in patients' functioning; patients need to be assessed adequately and require psychosocial support referrals to improve their well-being and QOL.

Keywords: Care needs, Kuwait, Oncology, Symptoms, Quality of life, Patients, Chemotherapy.

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1. INTRODUCTION

Examining symptom burden and care needs becomes an essential component of the patient's assessment, which guides nurses to support them throughout their disease journey and alleviate their distress [1]. According to Morris and Ramchandran [2], patients with serious illnesses are not given proper symptom management, affecting their quality of life, functioning, and satisfaction. This is important to oncology patients who experience sophisticated and interrelated symptoms. Furthermore, oncology patients' unmet symptoms and psychological/ emotional needs are associated with a higher perceived need for palliative care services, even though the patients do not request these services [3]. Visits to the outpatient department may provide a unique opportunity for nurses to examine patients' need for supportive care services; it is practical and may support cost savings and patient satisfaction [4].

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However, Richards *et al*. [5] reported a gap between the assessment of care needs and the actual care provided to meet those needs in outpatient settings. Several studies have reported a high symptom burden among oncology patients in the outpatient settings, such as chemotherapy and radiotherapy clinics and emergency departments [4 - 7]. For instance, screening cancer patients receiving chemotherapy might help identify patients with unrecognized care needs and refer them to the specialized care service promptly [7]. Others have reported inadequate assessment and reporting of palliative care needs in outpatient settings [8]. They suggested that timely recognition of dying patients and awareness of initiating palliative care can improve the end of life care. Obviously, nurses have an integral role in supporting their patients' psychological, spiritual, financial, and physical needs, which can be achieved by assessing their needs, bridging gaps between different healthcare services, and supporting them to meet these needs [9, 10]. Others suggested that nurse-led follow-up using telephone calls with oncology patients meet their needs for psychological support and information [11, 12].

In Kuwait, a cross-sectional observational study revealed a high symptom burden among hospitalized oncology patients in a specialized oncology center in Kuwait [13]. The most common symptoms were pain, fatigue, anorexia, weight loss, and dyspnea. The same study reported that the mean number of symptoms per patient was 6.4, which differed according to the patient's age, gender, cancer diagnosis, stage, length of hospitalization, and treatment intent (curative *versus* palliative). Another study recruited 348 consecutive patients at the breast cancer outpatient clinic of the Kuwait Cancer Control Center (KCCC) to assess their functional status and symptoms burden [14]. The results indicated low levels of general well-being and average levels of functional health status. Furthermore, the patients reported high levels of pain, dyspnea, sleep disturbance, and anorexia symptoms. The patient's symptoms and functional health levels were affected by their age, diagnosis, stage, and type of treatment (chemotherapy, radiotherapy, and surgery).

In alignment with the limited provision of supportive care in Kuwait, special attention must be given to outpatient settings. According to Muir *et al*. [15], oncology patients in outpatient clinics have unmet care needs and may benefit from early assessment and palliative needs screening. Furthermore, the early identification of care needs in these settings leads to better management, reduces unplanned visits and admissions, and improves the patient's quality of life [5]. Although two studies examined the care needs and symptoms burden in Kuwait [13, 14], the first study examined the needs of outpatients with breast cancer only, while the second examined the needs of inpatients. This limited evidence of the care needs among oncology outpatients in Kuwait, regardless of their diagnosis, necessitates conducting the current study. Many patients in outpatient clinics may benefit from this screening through adequate and timely referral to care, improving their QOL, and meeting their care needs.

This is the first nursing study that examines the oncology outpatients' care needs in Kuwait regardless of their diagnosis or complaints; previous studies were restricted to a specific type of cancer. Results from the current study add to the existing body of knowledge and shed light on outpatient needs, which will alarm healthcare providers and primary teams to modify their care plans to meet these needs. Further, the results may assist healthcare providers in identifying patients eligible for palliative care services, referring them promptly to achieve better well-being and quality of life.

1.1. Purpose of the Study

This study aimed to assess the care needs and symptoms burden among oncology patients in outpatient clinics in Kuwait. More specifically, the study evaluated the patients' general health status, functioning needs, and the severity of their symptoms.

1.2. Significance of the Study

1.2.1. Research Questions

This study attempts to answer the following research questions:

1. What is the general health status among oncology patients in outpatient clinics in Kuwait?

2. What are the functioning needs of oncology patients in outpatient clinics in Kuwait?

3. What is the extent of symptom severity experienced by oncology patients in outpatient clinics in Kuwait?

4. What are the differences in general health status, functioning needs, and symptom burden among oncology patients in outpatient clinics in Kuwait based on their demographic characteristics?

2. METHODOLOGY

2.1. Research Design

A descriptive cross-sectional design collected data from oncology patients visiting outpatient clinics. The study was conducted in KCCC, a comprehensive center founded in 1968 in 'Shuwaikh.' The center contains 200 beds and treats over 3000 new cancer patients annually. The hospital is composed of inpatient and outpatient departments distributed on four main buildings: Hussain Makki Juma Building for Specialized Surgery, Sheikha Badriya Al Sabah Medical Oncology Building, Faisal Sultan Ibn Issa Diagnostic Imaging Building, and Bahbahani Building for hematology and stem cell transplantation [16].

Data were collected mainly from the chemotherapy day-care center in Sheikha Badriya Al Sabah Medical Oncology Building and the radiotherapy treatment areas in the Faisal Sultan Ibn Issa Diagnostic Imaging Building. A convenient sampling procedure was used to recruit patients with active cancer who visited the mentioned data collection sites regardless of their diagnosis. The sample size was calculated according to Slovin's Formula [17], n= z2 * p (1-p)/ d2. Assuming a 95% confidence level, 0.5 expected prevalence, and a margin of error (confidence interval) of +/- 5%, the total sample size was 385 patients. To count for possible incomplete questionnaires, an additional 10% was added to yield a final sample size of 423 participants. Criteria for inclusion in the current study were (1) older than 18 years, (2) confirmed cancer diagnosis, (3) receiving active chemotherapy or radiotherapy treatment, and (4) cognitively competent.

2.2. Data Collection

Initially, the principal investigator approached the data collection sites and discussed the research project with the nurse managers and charge nurses. Then, he visited the clinics daily for one month, applying the recruitment criteria for available patients in the clinics. Once a patient was identified as a possible candidate, the researcher handled the data collection kit containing a cover letter; if the patient agreed to participate, the researcher gave him/her the consent form and the data collection instruments and instructed them to either return it to them personally or keep it with the charge nurse who was already available in the clinic.

2.3. Instruments

Data were collected using a self-reported questionnaire comprised of a demographic data sheet prepared by the researchers and the EORTC QLQ-C30 questionnaire [18]. The EORTC QLQ-C30 consists of 30 items covering functioning (15 items), symptoms (13 items), and health status (2 items). The functioning scales measure the physical, social, emotional, role, and cognitive dimensions. The symptom scales measure fatigue, nausea/vomiting, pain, dyspnea, sleep disturbances, appetite loss, constipation, diarrhea, and financial impact. The participants respond to each item in the functioning and symptoms scales using a 4-point Likert scale from 1 (Not at all) to 4 (Very much) and the health status scale using a 7-point Likert scale from 1 (very bad) to 7 (excellent). The scoring followed the EORTC QLQ-C30 Scoring Manual guidelines [19]. Initially, raw scores were calculated by summing each subscale. Then, the mean score of each scale was calculated and converted to scores ranging from 0 to 100 so that high scores represented a healthy level of functioning, a high level of symptom burden, and a high QOL. The Arabic version of EORTC QLQ-C30 is a valid and reliable tool. According to Alawadhi and Ohaeri [20], Cronbach's alpha coefficient was 0.94, as tested on a Kuwaiti sample. The Cronbach's alpha of the EORTC QLQ-C30 questionnaire in the current study was 0.88.

2.4. Ethical Considerations

The study was conducted following the Declaration of Helsinki. Ethical approvals were obtained from the Institutional Review Board (IRB) at the School of Nursing / University of Jordan, the Ministry of Health in Kuwait, and the selected hospitals. Furthermore, authorization to use the study instrument was obtained from the original authors.

2.5. Data Analysis

Statistical analysis was performed utilizing IBM SPSS version 26. Descriptive statistics (mean, standard deviation, and frequencies) described demographic data, the participant's needs, and symptoms. Comparisons of scales' scores among different groups (according to demographics) were made using the T-test and ANOVA test. The results were considered statistically significant if the *P*-value was less than 0.05.

Table 1. Demographic characteristics of the study participants (n=460).

Characteristic	n	%
Gender	-	-
Male	201	43.7
Female	259	56.3
Marital Status	-	-
Single	87	18.9
Married	360	78.3
Divorced	7	1.5
Widow	6	1.3
Educational level	-	-
Less than high school	55	12.0
High school	229	49.8
Bachelor	162	35.2
Postgraduate	14	3.0
Working status	-	-
Full-time job	288	62.6
Part-time job	48	10.4
Not working	124	27.0
Housing status	-	-
Live with the family	420	91.3
Live alone	40	8.7
Care provider	-	-
Son / Daughter	186	40.4
Spouse	110	23.9

(Table 1) contd.....

Characteristic	n	%
Self	64	13.9
Father & mother	34	7.4
Nurse	21	4.6
Siblings	19	4.1
Others	26	5.7

Table 2. Health-related characteristics of the study participants (n=460).

Characteristics	n	%
Type of Cancer	-	-
Breast	157	34.1
Prostate	103	22.4
Uterine	56	12.1
Colon	35	7.6
Lung	33	7.2
Others	76	16.5
Stage of cancer	-	-
Stage I	19	4.1
Stage II	80	17.4
Stage III	337	73.3
Stage IV	24	5.2
Current treatment	-	-
Radiotherapy	199	43.3
Chemotherapy	132	28.7
Surgical treatment	100	21.7
Diagnosed but did not start anticancer treatment	29	6.3
Referral to palliative care	-	-
No	448	97.4
Yes	12	2.6
Comorbidity	-	-
Hypertension	199	43.3
Diabetes	176	38.3
Asthma	43	9.3
Coronary vascular diseases	16	3.5

3. RESULTS

3.1. Participants' Demographic Characteristics

This study included 460 participants. The mean age of the participants was 50.23 years (SD 10.19), and the mean age at diagnosis with cancer was 45.86 years (SD 10.23). More than half of the participants were females (n= 259, 56.3%) and married (n=360, 78.3%). Detailed characteristics of the sample are summarized in Table **1**.

In terms of their health-related characteristics (Table **2**), most participants were diagnosed with breast cancer (n=157, 34.1%), followed by prostate cancer (n=103, 22.4%). Furthermore, most participants were in stage III during the data collection period (n=337, 73.3%) on active treatment with radiotherapy or at least received the first dose of chemotherapy (n=199, 43.3%). Almost all of the participants were not followed by the palliative care team (n=448, 97.4%).

3.2. Oncology Patients Care Needs

The participants' responses revealed that a few oncology patients were referred and followed by palliative care services (n=12, 2.6%). The participant's needs are presented in the following section.

3.3. General Health Status of Oncology Patients in Kuwait

The scores of the health status subscale (questions 29 and 30) were calculated and converted to a scale from 0 to 100, in which a high score represented a better status and QOL. The participant's mean score was 46.63 (SD=21.02), which was less than 50% of the total score.

Table 3. Scores of QLQ-C30 subscales

Scale	M (SD)	95% CI
General health status (QOL)	46.63 (21.02)	44.72 - 48.58
Functioning scales	-	-
Physical functioning	72.30 (17.30)	70.72 - 73.90
Role functioning	69.67 (18.92)	67.94 -71.41
Emotional functioning	64.78 (21.20)	62.83 - 66.72
Cognitive functioning	82.10 (23.97)	79.86 - 84.26
Social functioning	65.21 (22.58)	63.14 - 67.28
Symptoms	-	-
Fatigue	39.73 (20.74)	37.84 - 41.65
Nausea and Vomiting	20.57 (26.34)	18.20 - 23.04
Pain	39.16 (21.05)	37.24 - 41.11
Dyspnea	25.19 (27.36)	22.68 - 27.70
Insomnia	44.27 (26.37)	41.87 - 46.72
Poor Appetite (anorexia)	31.37 (32.90)	28.42 - 34.46
Constipation	15.79 (26.88)	13.36 - 18.29
Diarrhea	10.57 (20.97)	8.67 - 12.52
Financial burden	10.21 (23.17)	8.11 - 12.36

3.4. The Functioning needs Reported by Oncology Patients in Kuwait

Five functioning needs (physical, role, emotional, cognitive, and social) were assessed on a 100-point scale (Table **3**). The highest level of functioning was cognitive functioning (M=82.10, SD= 23.97), followed by physical functioning (M=72.30, SD=17.30). On the contrary, the lowest level of functioning was emotional functioning (M=64.78, SD=21.20).

The highest reported physical functioning need was difficulty walking a long distance (M=1.98, SD=0.76). The highest role functioning need was feeling limited/restricted when doing their job or other daily activities (question six) (M=1.94, SD= 0.66). The highest reported emotional functioning need was feeling anxious (M=2.09, SD= 1.08). The highest reported cognitive functioning need was trouble remembering things (M=1.58, SD= 0.76). The highest reported social functioning need was that physical condition or medical treatment negatively affected their family life (M= 2.05, SD=0.75).

3.5. Symptoms Burden among Oncology Patients in Kuwait

The mean scores of symptoms severity out of 100 are presented in Table **3**.

3.6. Factors associated with General Health Status, Functioning Needs, and Symptoms Burden

Differences in scores between participants based on their demographics are presented in the following section according to each subscale: general health status, functioning needs, and symptoms burden.

3.7. Significant Differences in General Health Status

We found that participants who hold high school certificates ($H(3)=10.3$, $p=.016$) and full-time workers ($F(2,457)= 4.023$, $p=.019$) have lower QOL. Regarding the type of cancer, participants diagnosed with prostate cancer have lower QOL than those diagnosed with colon cancer ($H(5)=36.34$, $p<.001$). Furthermore, participants in stage III have lower QOL levels than stage I and stage II ($H(3)=27.3$, $p<.001$). In the same assertion, participants diagnosed but did not start treatment have better QOL than other participants ($H(3)=49.2$, $p<001$).

3.8. Significant Differences in Functioning Needs

Better functioning status was found among participants who live alone ($t(458) = 2.31$, $p=.02$) and single ($H(3)= 14.34$, $p= .002$). On the other hand, lower *physical functioning* was found among unemployed participants ($F(2, 457)= 5.25$, $p=.006$) and those in stage four ($H(3)= 15.97$, $p=.001$). A better *role functioning* was found among females (t $(458)= -2.59$, $p=.01$), singles ($H(3)= 13.68$, $p=.003$), who live alone (t $(46.1)= 3.38$, $p=.001$), and those who did not start treatment yet ($H(3)=10.4$, $p=.015$). We found better *emotional functioning* among participants who live alone ($t(458) = 3.35$, $p <.001$). Furthermore, single and divorced participants have higher emotional functioning than widowed participants ($H(3)= 8.64$, $p=.034$), and participants who did not start treatment yet have better emotional functioning ($H(3)= 23.77$, $p<.001$). On the other hand, participants in stage four have lower emotional functioning ($H(3)= 13.57$, $p=.004$). Better *cognitive functioning* was reported by participants who live alone ($t(68.6) = 2.83$, $p =.006$), participants in stage three compared to participants in stage two and stage four ($H(3)=21.7$, $p<.001$), and participants who received chemotherapy. On the other hand, lower cognitive functioning was reported by unemployed participants ($F(2, 457)=5.19$, $p=.006$), and those diagnosed with colon cancer have lower cognitive functioning compared to participants diagnosed with prostate cancer ($H(5)= 55.27$, $p<.001$). Lastly, male participants have better *social functioning* than female participants (t $(448.5)= 2.673$, $p<.001$), as well as participants who live alone ($t(458) = 3.77$, $p <.001$) and who did not start treatment yet ($H(3)= 32.93$, $p<.001$).

3.9. Significant Differences in Symptoms Burden

Higher *fatigue* severity was reported by unemployed participants (*F*(2, 457)= 16.14, *p*<.001), and participants who had surgical treatment (*H*(3)= 20.45, *p*<.001). On the other hand, it was lower among participants diagnosed with prostate cancer than those diagnosed with colon and lung cancer (*H*(5)= 19.08, *p*=.002). *Insomnia* was higher among unemployed participants (*F*(2, 457)=9.76, *p*<.001), who were diagnosed with lung cancer than those diagnosed with prostate cancer (*H*(5)=16.27, p=.006), and those who had surgical treatment than those who received radiotherapy (*H*(3)=16.40, *p*<.001).

Higher *pain* intensity was reported by unemployed participants (*F*(2, 457)= 4.23, *p*=.015). On the other hand, the pain was lower among participants who did not start therapy yet (*H*(3)= 15.24, *p*=.002). In terms of *dyspnea*, more severe dyspnea was reported by participants who live alone (*t*(458)= 2.17, *p*=.03), diagnosed with lung cancer (*H*(5)= 47.8, *p*<.001), and in stage four (*H*(3)= 14.4, *p*=.002). On the other hand, dyspnea was lower among participants who had a surgical treatment compared to participants who received chemotherapy or radiotherapy (*H*(3)= 19.46, *p*<.001).

In terms of *nausea and vomiting*, a higher severity was reported by participants who live alone (*t*(42.8)= 2.52, *p*= .015), unemployed and part-time workers compared to full-time workers (*F*(2, 457)= 17, *p*<.001), participants in stage two or four (*H*(3)= 12.84, p=.005), and those who received chemotherapy (*H*(3)= 28.72, *p*<.001). On the other hand, a lower severity was reported by participants diagnosed with prostate cancer, uterine cancer, or breast cancer (*H*(5)= 101.7, *p*<.001). *Poor appetite* was higher among participants who live alone than participants who live with their families (*t*(458)= 2.58, *p*=.010), not workers, and part-time workers (*F*(2, 457)= 17, *p*<.001). On the other hand, participants who did not start any therapy and those who received radiotherapy were compared to participants who received chemotherapy or had surgical treatment (*H*(3)=39.43, *p*<.001), and participants diagnosed with prostate cancer were compared to all other participants (*H*(5)=54, *p*<.001).

The severity of *diarrhea* and *constipation* differed according to the participants' characteristics. Diarrhea was more severe among participants who received care from their children than those who cared for themselves or received care from their siblings (*H*(6)= 14.77, *p*= .022). Likewise, constipation was more severe among participants who received chemotherapy compared to other participants (*H*(3)= 38.9, *p*<.001). Both diarrhea (*H*(5)= 62.6, *p*<.001) and constipation (*H*(5)= 58.40, *p*<.001) were more severe among participants diagnosed with colon cancer than all other participants. On the other hand, participants who live alone have lower severity of constipation (*t*(458)= -5.06, *p*=<.001) and diarrhea (*t* (51.3)= -2.415, *p*= .019) than those who live with their families. In terms of stage of cancer, constipation in participants in stage three was lower than those in stage one and stage four (*H*(3)= 41.4, *p*<.001). However, diarrhea was lower in stage three than in stage two (*H*(3)= 15.8, *p*=.001).

Lastly, a higher *financial burden* was reported by female participants compared to male participants (*t* (458)= -3.086, *p*<.001), and among participants who received chemotherapy compared to participants who received radiotherapy or surgical treatment (*H*(3)=49.58, *p*<.001). On the other hand, it was lower among participants in stages three and four compared to participants in stages one and two (*H*(3)= 31.88, *p*<.001).

4. DISCUSSION

4.1. Quality of Life

The health status score indicated that patients have a low level of general well-being and QOL. Similar findings were reported by a previous study that investigated well-being among 348 patients diagnosed with breast cancer in Kuwait [14]. The latter study reported a similar score of health status subscale as our findings; the main difference between the two studies is that the current one included patients with different diagnoses. Notably, well-being /QOL among Kuwaiti patients diagnosed with breast cancer (which accounts for the highest disease group in the current study) was the lowest among other Arabs patients [21]. The combined findings indicate that poor well-being /QOL is a persistent issue among oncology patients requiring immediate action from stakeholders. However, this should be interpreted carefully, as the QOL varies according to the participants' characteristics.

The study revealed that general health status (well-being and QOL) was lower among patients who hold high school certificates; this could be due to the type of jobs and salaries associated with this level of certification. Besides, according to Edgerton *et al*. [22], education is an indicator in various QOL/ well-being indices, such as the Quality of Life Index, the Index of Social Progress, and the Human Development Index. It is postulated that a higher level of education boosts worker productivity, which leads to improved employment opportunities and income for the individual. On the other hand, patients who had full-time jobs exhibited a lower level of well-being/QOL, which could be linked to their job obligations and the fact that their job requirements occupy them.

Patients diagnosed with prostate cancer have low QOL compared to participants diagnosed with colon cancer. This could be related to the impact on sexual life and spouse intimacy. According to Singh *et al*. [23], patients with prostate cancer have low reported QOL associated with urinary symptoms, sexual dysfunction, and spousal distress. Furthermore, a comparative study that examined the well-being and general health status among patients diagnosed with breast, colon, and prostate cancers revealed that patients reported similar levels of well-being. However, the lifestyle differs between participants, as patients with colon cancer have higher performance capacities than other patients [24].

Regarding disease stage, the current study found that stage III predisposes the patients to lower well-being and QOL than stage I and stage II. Disease advancement, treatment protocols, and frequent visits to clinics and hospitalizations are several factors found to compromise well-being at the late stages of the disease [8,25,26]. In the same assertion, patients diagnosed but did not start treatment yet have better well-being/QOL than other participants. This is consistent with previous studies that found well-being and QOL affected by starting chemotherapy, radiation, or surgical treatments [14,25,27,28]. These studies revealed that the toxicities of treatments and the alteration in physical, psychological, and sexual functioning associated with treatment regimens decrease the patient's well-being and QOL.

4.2. The Functioning Needs

The best level of functioning among the patients was cognitive functioning, similar to the finding of a previous study in Kuwait that examined the functioning needs of women diagnosed with breast cancer [14]. The latter study reported functioning scores among participants ranged from 52.6% to 61.2%, indicating the predominantly average level of functional status, with the best functioning being the "cognitive" and "social". Furthermore, the current study found that patients most commonly reported difficulty walking a long distance and feeling limited/restricted when doing their job or other daily activities. According to Karabulu *et al*. [29], around 87% of oncology patients suffer from walking difficulties and limitations in general activity. This could be due to the disease itself (including site or stage) or the treatment complications [30].

As reported by the patients, the main emotional issue was feeling anxious. According to a recent study that examined anxiety disorders among 90 oncology patients, an alarming percentage of patients (25%) complained of severe anxiety [31]. Along the same line, anxiety is a common problem among oncology patients that significantly impacts their QOL and performance [32]. Anxiety among those patients might be explained by several reasons, such as fear of the treatment, ambiguity of disease and its progression, and the fear of suffering from distressing symptoms.

The patients in the current study reported trouble remembering things, supporting the results of a previous study [33] that summarized qualitative studies which examined cognitive function among oncology patients. The study revealed that oncology patients, regardless of their diagnosis or gender, consistently experience difficulties with attention and short-term memory, either because of cancer or chemotherapy. Lastly, the patients reported that physical condition or medical treatment negatively affected their family life, consistent with the previously reported result [27]. Apparently, the disease limitation and treatment regimens often impair the family and social life.

The level of functioning among participants varied according to their characteristics. For instance, female participants have better role functioning (assessed by performing daily activities and hobbies) than male participants. On the contrary, male participants have better social functioning (assessed by social and family activities). Perhaps the nature of gender-based roles among Arabs is linked to these variations, as females are responsible for completing house chores while males are more responsible for family relations and fulfilling the family's needs.

In terms of living conditions, patients who live alone have better functioning than participants who live with their families. This finding contradicts the findings of a previous study [34], in which patients who live alone experienced more psychological distress that affected their functioning and increased their care needs. It is necessary to differentiate between living alone (which was significant in the current study) and loneliness (which was not measured in the current study). According to Lim and Kua [35], the feeling of loneliness rather than living alone is the factor that affects people's psychological status and hence their functioning. In the context of the current study, the cultural bonds among Kuwaitis support frequent visits to the elderly, especially if they live alone, which minimizes their loneliness and eliminates the effect on their functioning levels.

The type of cancer also affected the cognitive functioning levels among participants. Participants diagnosed with colon cancer have lower cognitive functioning than participants diagnosed with prostate cancer. According to Cruzado *et al.* [36], administering chemotherapy to patients diagnosed with colon cancer can induce cognitive and memory impairment, although it might be mild and temporary. In terms of the stage of cancer, patients in the advanced stage have lower physical, cognitive, and emotional functioning than others. This might be due to the impact of extensive disease on general health status. Patients with advanced disease have multiple symptoms. They suffer from anticancer treatments and have low QOL, which cumulatively impair their functioning [37].

Patients who did not start treatment yet have better role functioning, emotional functioning, and social functioning than other participants who started treatment. According to Cotogni *et al.* [38], anticancer treatments negatively affect physical, emotional, and role functioning over time. Furthermore, participants who received chemotherapy have lower cognitive function than participants who received radiotherapy or surgical treatment. According to King *et al.* [25], chemotherapy treatment is associated with greater psychosocial distress, greater fear of relapse, and worse levels of functioning.

4.3. Symptoms Burden

The burden of eight symptoms (fatigue, nausea and vomiting, pain, dyspnea, insomnia, poor appetite (anorexia), constipation, and diarrhea) and the financial burden were assessed. The symptom with the highest severity/ burden was insomnia. According to Savard and Moren [39], insomnia was a neglected symptom that occurred in up to 50% of patients under active treatment and in 45% of patients who have been under treatment for 3-5 years. The second most common symptom was fatigue. It is noteworthy to state that sleep disturbances and fatigue were among the first five most common symptoms reported by Kuwaiti oncology patients [14]. Both symptoms are interrelated; fatigue and daytime dysfunctioning are potential consequences of sleep disturbances [39,40].

Previous international studies reported different findings on the matter of common symptoms among oncology patients. For instance, Caterino *et al.* [6] reported pain, followed by shortness of breath, as the most common symptom among patients in Ohio. In the Netherlands, dyspnea, followed by pain, was the most frequently reported symptom [8]. Bostwick *et al.* [41] reported pain, dyspnea, and fatigue as the most common symptoms. This variation in patients' experiences necessitates an individualized assessment to determine the symptom burden among each patient group and ensure tailored care.

Patients in the current study complained of several symptoms that varied according to their personal and disease characteristics. Less severity of symptoms was found among patients who live alone. Moreover, symptoms were less severe among patients diagnosed with prostate cancer. Furthermore, a variation in symptoms that are disease-specific was observed; for instance, dyspnea was more severe among lung cancer, while elimination symptoms (constipation and diarrhea) were more severe in colon cancer. This is congruent with the results of a previous study [42] highlighting that different primary cancer diseases have different disease trajectories and different levels of symptom burden.

On the contrary, higher severity of symptoms was reported by unemployed patients, those in an advanced stage, and who started anticancer therapies (more specifically, those who received chemotherapy or had surgical treatment). Being in an advanced stage and receiving anticancer treatments expose the patient to extra burdens and exacerbate the severity of symptoms [13].

4.4. Nursing Implications

The main implication of the current study is derived from the reported patients' burdens. Apparently, there is a need to develop a care model that adequately assesses oncology patients in outpatient settings. Nurses must act proactively to determine the risk of developing specific symptoms among their patients and manage them appropriately. Furthermore, the limitation in patients' functioning necessitates conducting psychosocial support referrals to improve their well-being and QOL, emphasizing holistic nursing care and supporting nurses' role in fulfilling their patients' needs. The limited number of palliative care referrals in light of the functioning levels necessitates the activation of early consultation and referral to the palliative care team. The current study provides baseline data for patients' conditions that alarms policy-makers about the provision of palliative care services in Kuwait. On the regional level, the findings may inspire nurses who care for Arab patients with a similar cultural background, especially in the Middle East.

Furthermore, the current study provides insight into several future research studies. For instance, future studies might examine the relationship between the severity of reported symptoms and functioning needs. Another recommendation might be a longitudinal study that investigates changes in symptom burden and functioning over time in relation to different treatment types. Another promising research implication is examining patients' experiences through a qualitative study to understand the patients functioning and symptoms burden.

CONCLUSION

In conclusion, this study has reported that Kuwaiti patients diagnosed with cancer have poor QOL and functioning. The best level of functioning among the patients was cognitive functioning, followed by physical functioning, and the lowest functioning was emotional functioning. In terms of symptom burden, generally, the patients had low levels of symptom severity/ burden (all symptoms scored less than 50%). Furthermore, the highest severity was in terms of insomnia, followed by fatigue. Apparently, there is a need to develop a care model that adequately assesses oncology patients in outpatient settings and meets their needs. The reported limitation in patients' functioning necessitates conducting psychosocial support referrals to improve their well-being and QOL.

LIST OF ABBREVIATIONS

KCCC = Kuwait Cancer Control Center
IRB = Institutional Review Board

ETHICS APPROVAL AND CONSENT TO PARTICIPATE

Ethical approvals were obtained from the Institutional Review Board (IRB) at the School of Nursing / University of Jordan, the Ministry of Health in Kuwait, and the selected hospitals.

HUMAN AND ANIMAL RIGHTS

No animals were used that are the basis of this study. All the human experiments were performed in accordance with the Helsinki Declaration.

CONSENT FOR PUBLICATION

Informed consent was obtained from all the participants (implied consent that required responding to the electronic questionnaire as an acceptance to participate).

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The authors did not receive any funds to conduct this study.

STANDARDS OF REPORTING

STROBE guidelines were followed.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

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