Symptom Prevalence of Patients with Cancer in a Tertiary Cancer Center in Jordan

Alia Alawneh, Huda Anshasi, Ghaleb Khirfan, Hesham Yaseen, Anood Quran

King Hussein Cancer Center, Jordan

Abstract

Background: Prevalence of symptoms experienced by patients with cancer was studied in different parts of the world. In Jordan, to the best of our knowledge, there is no published data on the prevalence of symptoms among patients with cancer. The aim of this study is to estimate the prevalence of symptoms among patients with cancer in Jordan.

Method: This was a secondary analysis of cross–sectional survey that evaluate the psychometric properties of the Arabic version of the European Organization for Research and Treatment of Cancer Quality of Life 15 items Questionnaire for Palliative Care (EORTC QLQ–C15–PAL) among patients admitted to a tertiary cancer center in Jordan.

Results: A total of 175 patients with cancer participated in the study; 51.4% were males, 48.6 % were females, mean age of patients was 50 years. Median number of symptoms per patient was 6, interquartile range was 5–7. The majority of patients (143; 81%) had more than 3 non–pain symptoms each. The most frequently reported symptom was tiredness (82%), whereas the least prevalent symptom was depression (55%). Pain was prevalent in 71% of patients, median severity score was 50%.

Conclusion: Patients with cancer suffer from a large constellation of symptoms, frequent assessment with a designated tool can help early identification of these symptoms and subsequent management. This highlights the need for integrated palliative services along with other health care provision.

Keywords: Cancer, symptom, prevalence, Jordan, Arabic EORTC

Introduction

Jordan is a small country in the Middle East region with a total area up to 92.300 square kilometers, land 91,971 sq. km, and water 329 sq. km. According to 2016 census number of Jordan's population is 9.235 million1. Nearly less than half of population concentrates in and around the capital city, Amman. Arabs make up the vast majority (98%) of the population, other ethnicities are Aacharx (1%) and Armenians (1%). Population density is concentrated in the center and north of the country. In terms of religion, 92% are Sunni Muslims, 6% are Christians, most of which follow the Orthodox Church, and 2% are Druze[2].

In the past decade, the number of new cancer cases diagnosed among Jordanians has increased by 44% (3362 cases in 2000 to 4849 in 2010). The Age Standardized Incidence Rate (ASR) adjusted to the world standard population was 135.1 per 100,000, which represents an increase by 8.5% from the ASR in 2000 (124.5 per 100,000 population). Jordan's ASR for cancer is similar to other Arab countries in the region and much lower than the ASR in Europe and North America[3]. It appears that increase in cancer cases in Jordan in the recent years is due to dramatic increase in population.

The top five cancers among Jordanian cancer patients are: colorectal, lung, prostate, urinary bladder and leukemia in males, and breast, colorectal, thyroid, non–Hodgkin's lymphoma and uterine in females[3].

King Hussein Cancer Center is the only comprehensive cancer center in Jordan with a palliative care program. It is located in the capital city, Amman. Palliative care program started in 2003 as WHO demonstration project[4]. The program delivers services for inpatients, outpatients, as well as for those at home through a home health care service.

Understanding symptom prevalence is important so that health care providers can prioritize to prevent the

Corresponding Author: Alia Alawneh, M.D., Palliative Medicine Consultant, Tawam Hospital, UAE. Khalifa bin Zayed Street, Al Ain, Abu Dhabi, United Arab Emirates, Email: alawnehalia@gmail.com

Characteristics	Frequency	(%)
Gender		
Male	90	(51.4%)
Female	85	(48.6%)
Age group(years old)		
18-34	27	(15.4%)
35-54	77	(44%)
Above 55	71	(40.6)
Educational level		
Elementary	51	(29.1%)
High school	68	(38.9%)
College	22	(12.6%)
University	34	(19.4%)
Metastasis		
Yes	47	(27%)
No	127)	(73%
	131	
Palliative Performance Scale	42	(76%)
More than 50%		(24.0%)
50% or less		
Cancer primary type		
Breast	17	(9.7%)
Gastrointestinal	45	(25.7%)
Genitourinary	17	(9.7%)
Hematological	34	(19.4%)
Lung	17	(9.7%)
Sarcoma	14	(8.0%)
Brain	6	(3.4%)
Head and neck	8	(4.6%)
Others*	18	(10.3%)
Employment status		
Employed	47	(27%)
Not employed	127	(73%)

Table 1. Patients' characteristics (N=175)

*Others include other types of malignancies.

most common and most severe symptoms and have effective management plans to palliate these symptoms. These plans may include patient and family education plans, professional educational plans, patient care plans, and expanding health services.[5] Studies have shown that interdisciplinary interventions are effective in alleviating suffering and manage symptoms experienced by patients with cancer[6–8].

Generally, it is part of everyday assessment to ask patients about general condition and presence of symptoms. However, use of questionnaires is not always adapted. A systematic review showed that symptoms prevalence is highest if assessed by a questionnaire[5].

Until recently, there are considerable number of untreated symptoms in patients with cancer that needs assessment and management[9]. Not only that presence of symptoms play a major role in the quality of life, it was shown that patients' and physicians' scoring of symptoms can predict patient overall survival. [10, 11]

Methods

This was a secondary analysis of cross–sectional survey that evaluate the psychometric properties of the Arabic version of the European Organization for Research and Treatment of Cancer Quality of Life 15 items Questionnaire for Palliative Care (EORTC QLQ–C15–PAL) among patients admitted to a tertiary cancer center in Jordan[12].

A total of 175 patients participated. The survey was done between July, 2014 and September, 2014.

Inclusion criteria were: patients above 18 years old, histologically or radiologically diagnosed cancer, Patients who are alert and oriented to time, place, and person, and who are able to read and answer the questionnaire.

After obtaining written consent, researchers conducted a face to face interview where Arabic translation of European Organization for Research, and Treatment of Cancer Quality of Life 15 items Questionnaire for Palliative Care (EORTC QLQ–C15– PAL) was used to assess symptoms experienced by patients with cancer.

Patient demographics and clinical characteristics were collected during the interview and from the patients' electronic medical records. The following were collected: age, gender, educational level, employment status, cancer primary type, presence of absence of metastasis, palliative performance scale, use of medications for symptom management.

The Arabic version of the EORTC QLQ C15 Pal was used to assess symptoms experienced by patients with cancer. This tool is shortened version of the EORTC QLQ C30 designed for patients at an advanced stage[13]. Both tools, the EORTC QLQ C15 and EORTC QLQ C30 proven to be valid in several studies done in different types in cancer patients in different countries[14–25]. The Arabic version was shown to be valid and reliable tool with a high internal consistency (Cronbach's alpha coefficient met the 0.7 alpha criterion[12].

The EORTC QLQ C15 Pal contains six single item domains: nausea/vomiting, pain, dyspnea, insomnia, appetite loss, constipation and global health quality of life; two domains with two items: emotional functioning and fatigue and a three item physical functioning domain. Each item is graded from 1 to 4 (1–not at all, 2–a little,

EORTC QLQ-C15-PAL (version 1)	Prevalence Number (%)	Severity Scores		
		First quartile	Second quartile (Median)	Third quartile
Physical function [b]		20	46.7	73.3
1. Do you have any trouble taking a short walk outside of the house?	115 (66%)			
2. Do you need to stay in bed or a chair during the day?	123 (70%)			
3. Do you need help with eating, dressing, washing yourself or using the toilet?	93 (53%)			
4. Were you short of breath? [a]	99 (57%)	33.3	66.7	100
Pain [a]		33.3	50	83.3
5. Have you had pain?	125 (71%)			
12. Did pain interfere with your daily activities?	110 (63%)			
Q6. Have you had trouble sleeping? [a]	121 (69%)	33.3	66.7	100
Fatigue [a]		22.2	55.6	88.9
7. Have you felt weak?	131 (75%)			
11. Were you tired?	144 (82%)			
8. Have you lacked appetite? [a]	136 (78%)	16.7	66.7	66.7
9. Have you felt nauseated? [a]	111 (63%)	0	16.7	50
10. Have you been constipated? [a]	107 (61%)	33.3	66.7	100
Emotional Subscale [b]		41.7	66.7	83.3
13. Did you feel tense?	130 (74%)			
14. Did you feel depressed?	97 (55%)			
15. How would you rate your overall quality of life during the past week? [b]		33.3	50	83.3

Table 2. Prevalence and severity scores in quartiles for each subscale/item in the Arabic version of the EORTC–QLQ–C15 Pal

a Scores range from 0 to 100. Higher score signifies more severity.

b Scores range from 0 to 100. Higher score signifies less severity.

3–quite a bit and 4–too much). For each domain if any item was answered with 2 or more then the symptom was considered present. Symptoms were scored according to the EORTC QLQ C15 Pal scoring manual[26]. Symptom severity scores were compared on basis of gender, age, presence of metastasis and cancer primary type.

Descriptive analysis of patients' information was done. Counts and percentages were used to describe categorical data and the mean, median and range to describe continuous data. ANOVA testing was used to compare means of symptoms severity scores. IBM SPSS version 23 was used to perform the statistical analysis.

The institutional review board at King Hussein Cancer Center approved this study. The study was done in agreement of the ethical standards of the 1964 Declaration of Helsinki.

Results

A total of 175 patients participated in the study. All were admitted as inpatients. There was slightly more males (51.4%) than females. Mean age was 50 years, ranging from 35 to 54. Majority of patients did not have metastasis (73%). In addition, 131 (75%) received chemotherapy, 50 (29%) received radiotherapy, and 81 (46%) had surgery during their course of illness. Most of the participants were unemployed (73%). Table 1 shows demographics and clinical characteristics.

Median number of symptoms per patient was 6, interquartile range was 5–7. The majority of patients (143; 81%) had more than 3 non–pain symptoms each. The most frequently reported symptom was tiredness (82%), whereas the least prevalent symptom was depression (55%). Table 2 shows symptoms frequency and severity.

EORTC QLQ-C15-PAL (version 1)	Breast	Gastrointestinal	Genitourinary	Haematological	Lung	Others*	P value
Mean item/subscale severity scores (First quartile, third quartile)	(17, 9.7%)	(45, 25.7%)	(17, 9.7%)	(34, 19.4%)	(17, 9.7%)	(45, 25.7%)	
Physical function [b] 1. Do you have any trouble taking a short walk outside of the house? 2. Do you need to stay in bed or a chair during the day? 3. Do you need help with eating, dressing, washing yourself or using the toilet?	43.5	42.5	40.0	56.0	**31.4**	55.1	0.06
4. Were you short of breath? [a]	70.6	71.1	**49.0***	67.6	**51.0**	75.6	0.05
Pain [a] 5. Have you had pain? 12. Did pain interfere with your daily activities?	56.9	47.4	51.0	**65.7**	42.2	58.9	0.14
Q6. Have you had trouble sleeping? [a]	60.8	55.6	64.8	60.0	**37.3**	57.8	0.31
Fatigue [a] 7. Have you felt weak? 11. Were you tired?	57.5	55.5	60.1	44.8	**70.0**	46.7	0.12
8. Have you lacked appetite? [a]	62.7	38.5	51.0	53.9	45.1	57.8	0.10
9. Have you felt nauseated? [a]	17.7	34.5	27.5	20.6	24.5	29.3	0.38
10. Have you been constipated? [a]	66.7	63.7	60.8	74.5	52.9	65.9	0.42
Emotional Subscale [b] 13. Did you feel tense? 14. Did you feel depressed?	**71.1**	61.9	61.3	**70.0**	54.0	64.1	0.49
15. How would you rate your overall quality of life during the past week? [b]	52.0	48.5	47.1	**67.2**	50.0	54.4	0.07

Table 3. Severity scores by cancer type

*Others include other types of malignancies.

a Scores range from 0 to 100. Higher score signifies more severity.

b Scores range from 0 to 100. Higher score signifies less severity.

When symptom severity scores were compared between males and females, there was no statistically significant difference between the two groups except for item 9 "Did you have nausea?", mean score for this item in males and females was 27.0 and 27.3, respectively, (P value <0.05).

Comparison of different age groups showed that elderly patients had more severe symptoms in three domains (physical function, fatigue and global score of quality of life) than young patients did, (P value <0.05).

Patients with metastatic disease had higher symptom severity scores than patients with non−metastatic disease, all domains showed statistically significant difference except for item 9 "Did you have nausea?", (P value <0.05).

Different cancer types did not show statistically significant difference in all domains except for item 4 "Were you short of breath?". Table 3 shows symptom severity scores for each cancer type.

Pain was prevalent in 71% of patients, median severity score was 50%. At the time of the interview,

91 (52%) patients were receiving opioids. Of these, 48 (53%) patients were receiving morphine, 40 (44%) were receiving tramadol, 6 (6.5%) fentanyl, 4 (4.4%) oxycodone, and1 (1%) methadone. When compared, patients who were receiving opioids had less pain severity score than who were not, P value <0.05.

Percentage of patients utilizing opioids by malignancy type was as follow: 26% in hematological malignancies, 59% in breast cancer, 65% in genitourinary cancer, 71% in gastrointestinal, 76% in lung cancer, and 36% in other cancers group. Patients with hematological malignancies had significantly higher pain severity score, P value <0.05, and were the least to utilize opioids when compared to patients with solid malignancies, P value <0.05

Out of the 175 participants, 12 (7%) patients were receiving antipsychotic medications.

Discussion

This analysis is the first to estimate the prevalence of symptoms in cancer patients in Jordan.

Symptoms were prevalent in more than 50% for each item/subscale. The median number of symptoms per patient in our cohort was 6 which is similar to what was reported in Kuwait[27] and Saudi Arabia[28]. According to the global update of palliative care development, all three countries did not reach the level of integration of palliative care into the mainstream service provision[29]. The use of a symptom assessment tool was shown to detect higher number of symptoms per patient than open ended questions[30].

The most common prevalent symptom was fatigue, same as what was reported in other countries[27,31–33]. Pain was prevalent in 71% of patients interviewed, median severity was 50, patients with hematological malignancies had significantly higher pain severity and significantly lower percentage of patients utilizing opioids. This indicates lower and late referral rates to palliative services as was reported in previous studies[34,35.]

Despite that 25.7% responded to question 14 in the emotional subscale "Did you feel depressed" with 3,4 (quite a bit, very much), only 7% were receiving antidepressants which denotes under–diagnoses and treatment of depression. This highlights the importance of screening for depression, and be more aware of signs and symptoms of depression in cancer patients.

With exception of question number 4 "were you short of breath?", there was no significant difference in symptom severity score among patients with different types of malignancies. Similar to what Kirkova et al

reported, as symptoms of pain, fatigue, anorexia, insomnia, depression, and anxiety did not differ among cancer primary site groups[33].

Of note, 73% of participants were unemployed. This is similar to what was reported in other studies[36,37]. The high symptom burden and the need for frequent time off work to attend treatment sessions lead many patients to lose their jobs with subsequent social and existential suffering.

Limitations of our study include the cross sectional and the single institution design. A multicenter study with sequential assessment of a larger group of patients in a longitudinal design will generate a more generalizable data.

Conclusion

Patients with cancer suffer from a large constellation of symptoms, frequent assessment with a designated tool can help early identify these symptoms and subsequent management. This highlights the need for integrated palliative services along with other health care provision.

References

1. http://census.dos.gov.jo/wp–content/uploads/sites/2/2016/02/Census_results_2016.pdf, July 29th 2016.

2. Zhuang PJ, Wang X, Zhang XF, Zhou ZJ, Wang Q. Postoperative respiratory and analgesic effects of dexmedetomidine or morphine for adenotonsillectomy in children with obstructive sleep apnoea. Anaesthesia. Nov 2011;66(11):989–993.

3. Abdel–Razeq H, Attiga F, Mansour A. Cancer care in Jordan. Hematology/oncology and stem cell therapy. Feb 21 2015.

4. Stjernswärd J, Ferris F, Khleif S, et al. Jordan palliative care initiative: a WHO Demonstration Project. Journal of pain and symptom management. 2007;33(5):628–633.

5. Teunissen SC, Wesker W, Kruitwagen C, de Haes HC, Voest EE, de Graeff A. Symptom prevalence in patients with incurable cancer: a systematic review. J Pain Symptom Manage. Jul 2007;34(1):94–104.

6. Rummans TA, Clark MM, Sloan JA, et al. Impacting quality of life for patients with advanced cancer with a structured multidisciplinary intervention: a randomized controlled trial. Journal of clinical oncology: official journal of the American Society of Clinical Oncology. Feb 1 2006;24(4):635–642.

7. Yennurajalingam S, Atkinson B, Masterson J, et al. The impact of an outpatient palliative care consultation on symptom burden in advanced prostate cancer patients. Journal of palliative medicine. Jan 2012;15(1):20–24.

8. Higginson IJ, Evans CJ. What is the evidence that palliative care teams improve outcomes for cancer patients and their families? Cancer journal (Sudbury, Mass.). Sep–Oct 2010;16(5):423–435.

9. Laugsand EA, Jakobsen G, Kaasa S, Klepstad P. Inadequate symptom control in advanced cancer patients across Europe. Supportive care in cancer: official journal of the Multinational Association of Supportive Care in Cancer. Dec 2011;19(12):2005–2014.

10. Quinten C, Maringwa J, Gotay CC, et al. Patient self-reports of symptoms and clinician ratings as predictors of overall cancer survival. Journal of the National Cancer Institute. Dec 21 2011;103(24):1851–1858.

11. Quinten C, Coens C, Mauer M, et al. Baseline quality of life as a prognostic indicator of survival: a meta–analysis of individual patient data from EORTC clinical trials. The Lancet. Oncology. Sep 2009;10(9):865–871.

12. Alawneh A, Yasin H, Khirfan G, et al. Psychometric properties of the Arabic version of EORTC QLQ–C15–PAL among cancer patients in Jordan. Supportive care in cancer: official journal of the Multinational Association of Supportive Care in Cancer. Jun 2016;24(6):2455–2462.

13. Linda Dewolf MK, Galina Velikova, Colin Johnson, Neil Scott, Andrew Bottomley on behalf of the EORTC Quality of Life Group. 2009. Accessed March 7th, 2015.

14. Cheng JX, Liu BL, Zhang X, et al. The validation of the standard Chinese version of the European Organization for Research and Treatment of Cancer Quality of Life Core Questionnaire 30 (EORTC QLQ–C30) in pre–operative patients with brain tumor in China. BMC medical research methodology. 2011;11:56.

15. Demirci S, Eser E, Ozsaran Z, et al. Validation of the Turkish versions of EORTC QLQ–C30 and BR23 modules in breast cancer patients. Asian Pacific journal of cancer prevention: APJCP. 2011;12(5):1283–1287.

16. Suarez–del–Real Y, Allende–Perez S, Alferez–Mancera A, et al. Validation of the Mexican–Spanish version of the EORTC QLQ–C15–PAL questionnaire for the evaluation of health–related quality of life in patients on palliative care. Psycho–oncology. Aug 2011;20(8):889–896.

17. Cerezo O, Onate–Ocana LF, Arrieta–Joffe P, et al. Validation of the Mexican–Spanish version of the EORTC QLQ–C30 and BR23 questionnaires to assess health–related quality of life in Mexican women with breast cancer. European journal of cancer care. Sep 2012;21(5):684–691.

18. Huijer HA, Sagherian K, Tamim H. Validation of the Arabic version of the EORTC quality of life questionnaire among cancer patients in Lebanon. Quality of life research: an international journal of quality of life aspects of treatment, care and rehabilitation. Aug 2013;22(6):1473–1481.

19. Kaasa S, Bjordal K, Aaronson N, et al. The EORTC core quality of life questionnaire (QLQ–C30): validity and reliability when analysed with patients treated with palliative radiotherapy. European journal of cancer (Oxford, England: 1990). Dec 1995;31a(13–14):2260–2263.

20. Hjermstad MJ, Fayers PM, Bjordal K, Kaasa S. Health–related quality of life in the general Norwegian population assessed by the European Organization for Research and Treatment of Cancer Core Quality–of–Life Questionnaire: the QLQ=C30 (+ 3). Journal of clinical oncology: official journal of the American Society of Clinical Oncology. Mar 1998;16(3):1188–1196.

21. Chaukar DA, Das AK, Deshpande MS, et al. Quality of life of head and neck cancer patient: validation of the European organization for research and treatment of cancer QLQ–C30 and European organization for research and treatment of cancer QLQ–H&N 35 in Indian patients. Indian journal of cancer. Oct–Dec 2005;42(4):178–184.

22. Arraras Urdaniz JI, Villafranca Iturre E, Arias de la Vega F, et al. The eortc quality of life questionnaire QLQ–C30 (version 3.0). Validation study for Spanish prostate cancer patients. Archivos espanoles de urologia. Oct 2008;61(8):949–954.

23. Jayasekara H, Rajapaksa LC, Aaronson NK. Quality of life in cancer patients in South Asia: psychometric properties of the Sinhala version of the EORTC QLQ–C30 in cancer patients with heterogeneous diagnoses. Quality of life research: an international journal of quality of life aspects of treatment, care and rehabilitation. Jun 2008;17(5):783–791.

24. Park KU. Assessment of change of quality of life in terminally ill patients under cancer pain management using the EORTC Core Quality of Life Questionnaire (QLQ–C30) in a Korean sample. Oncology. 2008;74 Suppl 1:7–12.

25. Onate–Ocana LF, Alcantara–Pilar A, Vilar–Compte D, et al. Validation of the Mexican Spanish version of the EORTC C30 and STO22 questionnaires for the evaluation of health–related quality of life in patients with gastric cancer. Annals of surgical oncology. Jan 2009;16(1):88–95.

26. Group MGaMAPobotEQoL. Addendum to the EORTC QLQ–C30 Scoring Manual: Scoring of the EORTC QLQ–C15–PAL 2006; http://www.eortc.be/qol/files/SCManualQLQ–C15–PAL.pdf. Accessed March 9th, 2015.

27. Alshemmari S, Ezzat H, Samir Z, Sajnani K, Alsirafy S. Symptom burden in hospitalized patients with cancer in kuwait and the need for palliative care. The American journal of hospice & palliative care. Nov 2010;27(7):446–449.

28. Al–Shahri MZ, Eldali AM, Al–Zahrani O. Nonpain Symptoms of New and Follow–up Cancer Patients Attending a Palliative Care Outpatient Clinic in Saudi Arabia. Indian journal of palliative care. May 2012;18(2):98–102.

29. Lynch T, Connor S, Clark D. Mapping levels of palliative care development: a global update. J Pain Symptom Manage. Jun 2013;45(6):1094–1106.

30. Homsi J, Walsh D, Rivera N, et al. Symptom evaluation in palliative medicine: patient report vs systematic assessment. Supportive care in cancer: official journal of the Multinational Association of Supportive Care in Cancer. May 2006;14(5):444–453.

31. Abu–Saad Huijer H, Abboud S, Doumit M. Symptom prevalence and management of cancer patients in Lebanon. J Pain Symptom Manage. Sep 2012;44(3):386–399.

32. Stark L, Tofthagen C, Visovsky C, McMillan SC. The Symptom Experience of Patients with Cancer. Journal of hospice and palliative nursing: JHPN: the official journal of the Hospice and Palliative Nurses Association. Jan 2012;14(1):61–70.

33. Kirkova J, Rybicki L, Walsh D, Aktas A, Davis MP, Karafa MT. The relationship between symptom prevalence and severity and cancer primary site in 796 patients with advanced cancer. The American journal of hospice & palliative care. Aug 2011;28(5):350–355.

34. Fadul NA, El Osta B, Dalal S, Poulter VA, Bruera E. Comparison of symptom burden among patients referred to palliative care with hematologic malignancies versus those with solid tumors. Journal of palliative medicine. Apr 2008;11(3):422–427.

35. Hui D, Didwaniya N, Vidal M, et al. Quality of end–of–life care in patients with hematologic malignancies: a retrospective cohort study. Cancer. May 15 2014;120(10):1572–1578.

36. Paul C, Boyes A, Hall A, Bisquera A, Miller A, O'Brien L. The impact of cancer diagnosis and treatment on employment, income, treatment decisions and financial assistance and their relationship to socioeconomic and disease factors. Supportive care in cancer: official journal of the Multinational Association of Supportive Care in Cancer. Jun 30 2016.

37. Ratzon NZ, Uziely B, de Boer AG, Rottenberg Y. Unemployment risk and decreased income 2 and 4 years after thyroid cancer diagnosis: a population based study. Thyroid: official journal of the American Thyroid Association. Jul 11 2016.