Brief Methodological Report

Validation of the Arabic Version of the Memorial Symptom Assessment Scale Among Lebanese Cancer Patients

Huda Abu-Saad Huijer, RN, PhD, FEANS, FAAN, Knar Sagherian, RN, MSN, and Hani Tamim, MPH, PhD

Hariri School of Nursing (H.A.-S.H.) and Biostatistics Unit (H.T.), American University of Beirut, Beirut, Lebanon; and School of Nursing (K.S.), University of Maryland, Baltimore, Maryland, USA

Abstract

Context. To our knowledge, there have been no previous attempts to translate the Memorial Symptom Assessment Scale (MSAS) into the Arabic language and validate it among the Arab cancer population.

Objectives. The purpose of this study was to validate the MSAS in Arabic (MSAS-Leb) among 190 Lebanese oncology outpatients.

Methods. The questionnaires were the MSAS-Leb and the European Organization for Research and Treatment of Cancer Quality of Life Questionnaire-Core 30 (EORTC QLQ-C30). Data were collected between 2009 and 2010 at a major teaching hospital in Lebanon. The psychometric indices used were reliability, convergent validity, principle component analysis, and confirmatory factor analysis (CFA).

Results. The Cronbach's alpha coefficients for the MSAS and its subscales ranged from 0.71 to 0.83. On convergent validity testing, the psychological and global distress index subscales were moderately correlated ($r > -0.50$; $P < 0.01$) with the emotional functioning subscale of the EORTC QLQ-C30. Correlation coefficients between the MSAS items and selected subscales from the EORTC QLQ-C30 met the standards of convergent validity ($r = -0.55$ to 0.81; $P < 0.01$) except for the nausea/vomiting subscale. On principal component analysis ($N = 95$), four meaningful clusters were recovered. The clusters represented the psychological and physical components. CFA ($N = 95$) showed an acceptable model and a good fit (goodness-of-fit index = 0.59, adjusted goodness-of-fit index = 0.51, root mean square residual = 0.05, root mean square error of approximation = 0.2) with our data set.

Conclusion. The MSAS-Leb has acceptable psychometric properties of reliability and validity. We recommend its use in clinical practice and outpatient settings among health care professionals to assess and follow-up on symptom burden among patients diagnosed with cancer. J Pain Symptom Manage 2015;50:559−565. © *2015 American Academy of Hospice and Palliative Medicine. Published by Elsevier Inc. All rights reserved.*

Key Words

Cancer, symptoms, psychometrics, scale, MSAS, lebanon

Introduction

Throughout their illness, oncology patients experience a group of symptoms that are physical and psychological in nature.[1−3] These symptoms, which occur at varying distress levels, are either cancer- or treatment related or are the side effects of prior treatments that persist over time.[4] In addition to affecting functional performance, symptoms like pain and fatigue create psychological distress and decrease quality of life (QoL).[5,6]

In clinical practice, adequate symptom control relies on the administration of tailored interventions and on proper assessment of symptomatology. The latter is addressed through the use of assessment tools that are both comprehensive and have good psychometric properties.[7] In the cancer population, one of

Address correspondence to: Huda Abu-Saad Huijer, RN, PhD, FEANS, FAAN, Hariri School of Nursing, American University of Beirut, P.O. Box 11-0236, Beirut, Lebanon. E-mail: huda.huijer@aub.edu.lb

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the frequently used symptom assessment instruments is the Memorial Symptom Assessment Scale (MSAS).[8,9]

Developed by Portenoy et al.,[10] the MSAS is a multidimensional instrument that addresses 32 cancer-related symptoms in terms of frequency, severity, and distress. Rated by patients, the gathered information assists health care professionals in properly addressing these symptoms.

The psychometric properties of the MSAS are well established in the literature. The original English version has been validated in 218 adult patients diagnosed with different types of cancer. The validation process consisted of determining the scale's items and structure, factor analyses that generated two-factor solutions, reliability that had coefficient scores of 0.83 and 0.88, and differentiation among different clinical subgroups.[10] The MSAS has been translated and validated in Chinese,[11] Turkish,[12] and Swedish,[13] all of which reported the instrument to be reliable and valid.

Despite the MSAS's popularity in oncology research[8,9] and ongoing efforts to initiate palliative care services in most of the Middle Eastern countries,[14] there has been no attempt to translate and adapt the MSAS into Arabic and validate it among the Arab cancer population. In Lebanon, Abu-Saad Huijer et al.[3] translated the MSAS into Lebanese Arabic and administered it in a study that aimed to assess symptom prevalence and management in adult cancer patients. The results showed that more than 50% of the patients complained of lack of energy, feeling nervous, and feeling sad. The most treated symptoms were pain and nausea.

The purpose of this study was to perform a secondary data analysis and examine the reliability and validity of the MSAS in the Lebanese Arabic language among a sample of adult cancer patients in Lebanon.

Methods

Sample

For the present study, an already existing data set on symptom prevalence and management was used. The findings of the main study have been published in detail elsewhere.[3] The study design was cross-sectional. The original sample included 200 adult cancer patients from three oncology units at a major tertiary teaching hospital located in the capital city of Beirut, Lebanon. These units treat patients from different socioeconomic and geographical backgrounds.

Participant enrollment took place over a one-year period (2009–2010). The inclusion criteria included Lebanese patients aged 18 years and older, diagnosed with cancer for at least one month, receiving cancer treatment, aware of their diagnoses, and willing to be interviewed.

Procedure

Data collection began after receiving the institutional review board approval from the American University of Beirut. With the assistance of the nurse managers, potential participants were identified and approached during a visit to the outpatient clinic or stay in the hospital. After securing written consent from the participants, two trained interviewers and a research assistant conducted face-to-face interviews in private settings, which included reading the instruments, explaining the rating scales, and documenting the answers.

Questionnaires

The administered questionnaires were the MSAS and the European Organization for Research and Treatment of Cancer Quality of Life Questionnaire-Core 30 (EORTC QLQ-C30).

Memorial Symptom Assessment Scale. The MSAS is a 32-item assessment tool developed to measure the prevalence and the three dimensions (frequency, severity, and distress) of physical and psychological symptoms experienced by oncology patients in the past week. A symptom score represents the average of three symptom dimensions, where higher symptom scores represent higher frequency, greater severity, and more distress. The Psychological Symptom Subscale (MSAS-PSYCH) represents the mean of six psychological symptom scores (worrying, feeling sad, feeling nervous, difficulty sleeping, feeling irritable, and difficulty concentrating), and the Physical Symptom Subscale (MSAS-PHYS) represents the mean of 12 physical symptom scores (lack of appetite, lack of energy, pain, feeling drowsy, constipation, dry mouth, nausea, vomiting, change in taste, weight loss, feeling bloated, and dizziness). The Global Distress Index (MSAS-GDI) represents the mean of the frequency of four psychological symptoms (feeling sad, worrying, feeling irritable, and feeling nervous) and the distress of six physical symptoms (lack of appetite, lack of energy, pain, feeling drowsy, constipation, and dry mouth). The total MSAS is the average of the symptom scores of all 32 symptoms in the instrument. The MSAS has good results for reliability and validity in the cancer population.[10]

EORTC QLQ-C30. The EORTC QLQ-C30 is a 30-item questionnaire that measures five functional (physical, role, cognitive, emotional, and social), one global health status/QoL, and three symptoms (fatigue, pain, and dyspnea) subscales. In addition, there are five single symptom items assessing insomnia, appetite loss, constipation, diarrhea, and financial difficulties. The calculated scores are based on the instrument's scoring manual.[15] Subscale scores ranged from 0 to 100, where higher scores in the functional scales represent higher levels of functioning/fewer problems in that area, contrary to the symptom scales where higher scores represent greater symptomatology and more problems. The reliability and validity of the Lebanese Arabic version of the EORTC QLQ-C30 has been established in the Lebanese cancer population.[3]

Translation and Pilot Study

To establish language validity, the MSAS was translated into Lebanese Arabic using the back-translation method, a method of forward and backward translations that ensures a semantic and culturally equivalent instrument.[16] At first, the researchers translated the MSAS into Lebanese Arabic (forward translation), followed by back translation that was done by an independent bilingual translator who had no prior knowledge of the existing instrument and was not involved in the study. A team of four experts; one in oncology, two in research design and instrument development, and a clinical psychologist rated the translated version for cultural adaptability, understandability, and appropriateness. Based on their feedback, the only modifications were related to removing the two symptoms; feeling irritable and feeling drowsy. This decision was based on the fact that when these two symptoms were translated into Lebanese Arabic, they were synonymous to feeling nervous and dizziness. Thus, the final version contained a total of 30 symptoms.

The MSAS-Leb was pilot tested among 10 oncology patients for clarity, length, and ease of understanding. The administration time was found to be feasible; it took on average 20 minutes. The pilot group did not report any problems, and thus no further changes were implemented.

Statistical Analysis

For the psychometrics study, we excluded 10 inpatients from the original sample to validate the MSAS-Leb in the outpatient population ($N = 190$) only. First, we assessed the pattern for missing values on all the items of the scales.

The reliability (internal consistency) of the MSAS-Leb and its subscales was assessed using Cronbach's alpha coefficients; an alpha of ≥ 0.70 was sought.[17] Convergent validity was tested using Pearson's correlations between the MSAS-Leb and subscales from the EORTC QLQ-C30. We hypothesized that the MSAS-PSYCH and MSAS-GDI would correlate with the emotional functioning and the MSAS-PHYS with the physical functioning subscales. In addition, selected MSAS-Leb items were correlated with subscales from the EORTC QLQ-C30 and hypothesized to yield moderate to strong correlations. Convergent validity was established, if a correlation coefficient was found to be ≥ 0.4.[17]

Data analyses were performed using the Statistical Package for Social Sciences (SPSS), version 21 (SPSS/IBM, Armonk, NY). A P-value of ≤ 0.05 was considered statistically significant.

Factor analyses were conducted allocating half of the sample ($N = 95$) for exploratory principal component factor analysis (EFA) with varimax rotation and the other half ($N = 95$) for confirmatory factor analysis (CFA). The goodness-of-fit indices we used to assess the fit of the model were goodness-of-fit index (GFI), root mean square error of approximation (RMSEA), root mean square residual (RMR), and adjusted goodness-of-fit index (AGFI). The GFI and AGFI values range from 0 to 1, where higher values indicate a good fit. An RMSEA value closer to 0 indicates the best fit, and an RMR value of ≤ 0.08 is indicative of an acceptable model. The program used for factor analyses was SPSS AMOS, version 21.

Results

The response rate of the participants was 80.3%. Of the 190 outpatients, most were females (63.7%), had a mean age of 54.32 years (SD = 13.64), were married (77.9%), and were unemployed (61.1%). Breast cancer (45.8%) was the most common diagnosis among the study group, followed by cancer of the gastrointestinal tract (17.4%). More than half of the sample (63.5%) did not know the stage of their cancer, and the most administered oncologic treatments were chemotherapy, surgical interventions, and radiotherapy. Table 1 gives a detailed summary of the sample characteristics.

MSAS-Leb and Reliability

For the MSAS-Leb, the percentage of missing values of all observations for each dimension (severity, frequency, and distress) was calculated separately and found to be less than 1.0%. Table 2 presents the prevalence and mean scores of 30 symptoms. The most prevalent symptom was lack of energy ($N = 120$; 63.2%), followed by feeling nervous ($N = 103$; 54.2%), and feeling sad ($N = 94$; 49.5%). The least prevalent symptoms were difficulty swallowing ($N = 18$; 9.5%) and vomiting ($N = 16$; 8.4%). The symptoms with the highest mean scores were problems with sexual interest (score = 2.92; SD = .63), "I don't look like myself" (score = 2.75; SD = .88), and pain (score = 2.70; SD = .80).

Table 1
Characteristics of Participants ($N = 190$)

Variables	n	%
Age, yrs		
Mean (SD) (range 19–86)	54.32	SD = 13.64
Gender		
Female	121	63.7
Male	69	36.3
Marital status		
Single	23	12.1
Married	148	77.9
Divorced/separated/widowed	19	10.0
Level of education		
High school (elementary/ secondary/technical)	105	55.3
University	85	44.7
Work status		
Employed	74	38.9
Unemployed/retired because of ill health	116	61.1
Days lost from work in past six months		
Mean (SD) (range 0–180)	43.28	SD = 51.03
Primary cancer site		
Breast	87	45.8
Gastrointestinal	33	17.4
Leukemia	18	9.5
Lymphoma	12	6.3
Lung	10	5.3
Reproductive tract	11	5.8
Head and neck	10	5.3
Urinary tract	4	2.1
Bones	4	2.1
Time since diagnosis (months)		
Mean (SD) (range 1–228)	31.80	SD = 41.52
Cancer stage		
Stage I–II	41	21.7
Stage III–IV	28	14.8
I do not know	120	63.5
Metastatic disease	65	34.2
Treatment received		
Chemotherapy	113	59.7
Surgery	103	54.2
Radiation	47	24.7
Hormone therapy	15	7.9
Other (therapy combinations/bone marrow transplantation)	17	8.8

Table 3 displays the Cronbach's alpha coefficients and the mean scores of the MSAS-Leb subscales. The MSAS-Leb and its subscales (PSYCH, PHYS, and GDI) met the standards of reliability (internal consistency), with coefficients ranging between 0.71 and 0.83.

The total MSAS-Leb had a mean score of 2.30 (SD = .51); the highest mean score among the three subscales was found to be the MSAS-PSYCH (score = 2.46; SD = .68).

Convergent Validity

The MSAS-PSYCH ($r = -0.59$; $P < 0.01$) and GDI ($r = -0.51$; $P < 0.01$) had satisfactory correlations with the emotional functioning subscale only, thus meeting the standards of convergent validity. However, the correlations between the physical functioning and the MSAS-PHYS ($r = -0.35$; $P < 0.01$) and GDI ($r = -0.27$; $P < 0.01$) subscales were below the set standards and did not support convergent validity.

Table 4 summarizes the correlation coefficients between the MSAS-Leb items and selected subscales from the EORTC QLQ-C30. All correlation coefficients met the standards of convergent validity ($r = -0.55$ to 0.81; $P < 0.01$) except for the MSAS-vomiting and the nausea/vomiting (NV) subscale. The strongest correlations were found between MSAS-lack of energy and the fatigue subscale ($r = 0.81$; $P < 0.01$) and MSAS-nausea with the NV subscale ($r = 0.73$; $P < 0.01$).

Factor Analyses

Table 5 presents the results of the factor loadings. A principal component factor analysis was computed using the average of the frequency, severity, and distress scores for each of the 30 items. The findings showed loading on 10 factors. According to the number of variables loading on these factors, we recovered four major meaningful clusters. Cluster 1 contained worrying, feeling nervous, dizziness, difficulty sleeping, mouth sores, feeling bloated, and problems in urination. Cluster 2 contained difficulty concentrating, feeling sad, feeling nervous, worrying, "I don't look like myself," pain, diarrhea, and constipation. The two clusters had symptoms that were mostly psychological in nature. In Cluster 3, the symptoms were numbness/tingling, pain, dry mouth, cough, changes in skin, and problem in urination. The fourth cluster contained lack of energy, change in food taste, lack of appetite, and constipation. These two clusters represent symptoms that are physical in nature.

On CFA, the results showed a GFI of 0.59 and an AGFI of 0.51, both indicating a good fit. The RMSEA had a value of 0.2 indicating an acceptable fit. The RMR was 0.02, less than the set value of 0.08, thus indicating an acceptable model, too.

Discussion

The present study validated the Lebanese Arabic version of the MSAS among a convenience sample of 190 adult oncology patients for the first time. The MSAS-Leb showed adequate psychometric properties in terms of internal consistency and convergent validity. Factor analyses showed that the present data did correspond with the original MSAS subscales with few exceptions.

During testing for linguistic and cultural appropriateness, the MSAS-Leb was shortened from 32 to 30 items. The items "feeling irritable" and "feeling drowsy" were removed because they were found to be similar in Arabic to "feeling nervous" and "dizziness" and are used interchangeably in the Lebanese culture. In comparison with other psychometric

Table 2
MSAS Symptom Prevalence and Mean Scores ($N = 190$)

During the Past Week	n (%)	Minimum−Maximum	Mean (SD) Score
Lack of energy	120 (63.2)	1.00−4.00	2.47 (0.80)
Feeling nervous	103 (54.2)	0.67−4.00	2.52 (0.84)
Feeling sad	94 (49.5)	0.67−4.00	2.52 (0.89)
Dry mouth	89 (46.8)	0.67−4.00	2.21 (0.94)
Difficulty sleeping	86 (45.5)	1.00−4.00	2.63 (0.79)
Pain	86 (45.3)	0.67−4.00	2.70 (0.80)
Worrying	79 (41.6)	1.00−4.00	2.68 (0.85)
Numbness/tingling in hands/feet	71 (37.4)	0.67−4.00	2.30 (0.95)
Lack of appetite	66 (34.9)	1.00−4.00	2.47 (0.88)
Nausea	66 (34.7)	0.67−4.00	2.30 (0.95)
"I don't look like myself"	64 (33.7)	1.00−4.00	2.75 (0.88)
Change in the way food tastes	62 (32.6)	1.00−4.00	2.67 (1.04)
Feeling bloated	61 (32.4)	1.00−4.00	2.51 (0.88)
Hair loss	56 (29.8)	0.67−4.00	2.34 (0.94)
Cough	50 (26.5)	0.67−4.00	2.11 (0.92)
Dizziness	48 (25.3)	0.67−4.00	1.89 (0.90)
Constipation	48 (25.5)	1.00−4.00	2.65 (0.75)
Change in skin	44 (23.4)	1.00−4.00	2.56 (0.72)
Difficulty concentrating	40 (21.1)	1.00−4.00	2.23 (0.76)
Sweats	40 (21.2)	0.67−4.00	2.45 (0.92)
Diarrhea	36 (19.1)	1.00−4.00	2.17 (0.88)
Weight loss	35 (18.5)	0.67−4.00	1.89 (0.89)
Swelling of arms/legs	34 (18.0)	0.67−4.00	2.32 (0.81)
Shortness of breath	31 (16.4)	0.67−3.33	2.00 (0.75)
Problems with sexual interest	29 (15.4)	1.67−4.00	2.92 (0.63)
Mouth sores	26 (13.8)	1.00−4.00	2.61 (0.86)
Itching	25 (13.3)	1.00−4.00	2.12 (0.96)
Problems with urination	23 (12.2)	0.67−4.00	2.43 (1.05)
Difficulty swallowing	18 (9.5)	1.33−4.00	2.68 (0.97)
Vomiting	16 (8.4)	0.67−4.00	2.08 (0.68)

MSAS = Memorial Symptom Assessment Scale.

studies from Turkey, Sweden, and China, none of those reported similar linguistic concerns and item reductions during the initial translation phase of the instrument.

The adapted MSAS-Leb and its subscales had satisfactory Cronbach's alpha coefficients of 0.71−0.83. Our findings were similar to the validation study by Yildirim et al.[12] among 120 cancer patients from Turkey, where reliability coefficients ranged from 0.75 to 0.84. Compared with reliability coefficients reported by Browall et al.[13] and Cheng et al.[11] in their Swedish and Chinese versions, our findings were slightly lower, and when compared with the original English version;[10] the results of the alpha coefficients were 0.83 and 0.88 for the psychological and physical subscales, respectively.

As for convergent validity, our results supported the hypothesized relationship between MSAS-PSYCH, GDI, and EORTC QLQ-C30 emotional functioning subscales only. A possible explanation for the weak correlation between the MSAS-PHYS and the physical functioning subscale may be related to the questions comprising the subscale itself. The MSAS-PHYS is more comprehensive in nature, addressing energy levels, pain, and gastrointestinal symptoms, whereas the EORTC QLQ-C30 physical functioning subscale focuses on activity tolerance and the need for physical assistance in daily activities. However, item correlations between the MSAS and selected subscales from the EORTC QLQ-C30, as hypothesized, met the standards of convergent validity. The only exception was related to the MSAS-vomiting and the NV subscale, which may be attributed to the low vomiting prevalence in the sample or to the adequate symptom management of outpatients experiencing vomiting episodes during the interview. For convergent validity,

Table 3
Mean Scores and Cronbach's Alpha Coefficients of the MSAS Subscales

MSAS Subscales	Mean (SD)	Range (Minimum−Maximum)	Cronbach's Alpha
MSAS-PSYCH	2.46 (0.68)	0.67−4.00	0.73
MSAS-PHYS	2.23 (0.62)	0.67−4.00	0.73
MSAS-GDI	2.24 (0.78)	0.00−4.00	0.71
Total MSAS	2.30 (0.51)	0.67−3.55	0.83

MSAS = Memorial Symptom Assessment Scale; MSAS-PSYCH = psychological symptom subscale; MSAS-PHYS = physical symptom subscale; MSAS-GDI = global distress index.

Table 4
Correlations Between MSAS-Leb Symptom Items and Selected Subscales from the Lebanese EORTC QLQ-C30

MSAS Item Mean Scores	Lebanese EORTC QLQ-C30 Subscales	Questions Representing the Subscales	Correlation Coefficients
Q1: Difficulty concentrating	Cognitive functioning	Q20. Have you had difficulty in concentrating on things, like a newspaper or watching television?	−0.58
		Q25. Have you had difficulty remembering things?	
Q9: Pain	Pain	Q9. Have you had pain?	0.71
		Q19. Did pain interfere with your daily activities?	
Q6: Lack of energy	Fatigue	Q10. Did you need to rest?	0.81
		Q12. Have you felt weak?	
		Q18. Were you tired?	
Q2: Feeling nervous	Emotional functioning	Q21. Did you feel tense?	−0.55
Q3: Feeling sad		Q22. Did you worry?	−0.66
Q4: Worrying		Q23. Did you feel nervous [irritable]?	−0.72
Q12: Nausea	Nausea and Vomiting	Q14. Have you felt nauseated?	0.73
Q13: Vomiting		Q15. Have you vomited?	0.25

MSAS = Memorial Symptom Assessment Scale; EORTC QLQ-C30 = European Organization for Research and Treatment of Cancer Quality of Life Questionnaire-Core 30.
Pearson's correlation coefficients. All correlations were significant at the 0.01 level (two-tailed) except for the vomiting and nausea/vomiting subscale (not significant).

a slightly different approach was used in the Swedish study,[13] where the MSAS symptom scores were correlated with individual items from the EORTC QLQ-C30 and found to be significant.

With respect to EFA, our findings showed four meaningful clusters that were psychological and physiological in nature. To a greater extent, our findings were comparable to the original English version with few exceptions.[10] There were a number of gastrointestinal symptoms that conceptually did not belong to the clusters representing the psychological subscale. Interestingly, "pain" loaded on both physical and psychological clusters, indicating the symptom experience to be relevant to both domains. On CFA, the different fit statistics indicated an acceptable model and fit between the hypothesized model and our current sample of 95 oncology outpatients. Our findings provided some evidence in confirming the construct validity of the MSAS-Leb. However, further studies using the Arabic version are recommended

Table 5
Principal Components Factor Analysis With Varimax Rotation Using 30 Symptom Scores (N = 95)

Symptoms	F1	F2	F3	F4	F5	F6	F7	F8	F9	F10
Difficulty concentrating		0.69								
Feeling sad		0.60								
Feeling nervous	0.38	0.35							0.47	
Worrying	0.64	0.35								
"I don't look like myself"		0.51			0.50					
Lack of energy				0.66						
Numbness/tingling			0.77							
Dizziness	0.77									
Pain		0.48	0.43							
Difficulty sleeping	0.80									
Dry mouth	0.32		0.54			0.37				
Nausea						0.82				
Vomiting						0.68				
Change in food taste				0.64	0.34					
Lack of appetite				0.77						
Weight loss										
Difficulty swallowing										
Cough			0.64							
Shortness of breath									0.83	
Swelling								0.74		
Sweats										
Itching										0.64
Mouth sores	0.31								0.42	
Hair loss							0.78			
Change in skin			0.41				0.42	0.55		
Feeling bloated	0.34				0.39					
Problems with urination	0.33		0.44							
Diarrhea		0.45								
Constipation		0.30		0.52						0.30
Sexual interest					0.82					

A symptom score represents the average of the frequency, severity, and distress of a symptom. Loading factors with values less than 0.30 are suppressed.

to complement our psychometric evaluation. An alternative statistical approach is the Rasch analysis, which would provide an in-depth structure examination of the MSAS-Leb. In view of the literature validating the MSAS in different languages and cultures, the differences in our findings may be related to the removal of two items from the instrument, and to the characteristics of the sample, which comprised outpatients from the clinics and with nine different types of cancer.

Limitations

This study had a number of limitations. One limitation is related to the study's cross-sectional design, which prevented both measuring the responsiveness of patients over time and limited the performance of test-retest reliability. Recall bias is possible because the MSAS assesses symptom experience in the past seven days. Another possible limitation is related to respondent burden, where similar items were present both in the EORTC QLQ-C30 and the MSAS instruments. The use of the EORTC QLQ-C30 for convergent validity may not be optimal because its primary purpose is to measure QoL rather than symptom assessment. Another limitation is related to our heterogeneous sample where subgroup differences were limited because of small sample sizes for each cancer type or stage.

Conclusion

Overall, the psychometric properties of the MSAS-Leb were adequate. However, further research studies are needed that include equal proportions of patients with different types of cancer, in different clinical settings, and assessment over time to confidently establish the instrument's construct validity among the Lebanese population. We recommend that health care providers use the MSAS-Leb in clinical practice as an outcome indicator that measures patients' progress and responsiveness to treatment during the course of the disease.

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References

1. Collins JJ, Byrnes ME, Dunkel IJ, et al. The measurement of symptoms in children with cancer. J Pain Symptom Manage 2000;19:363–377.

2. Karabulu N, Erci B, Ozer B, Ozdemir S. Symptoms clusters and experiences of patients with cancer. J Adv Nurs 2010;66:1011–1021.

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

4. Minasian LM, O'Mara AM, Reeve BB, et al. Health-related quality of life and symptom management research sponsored by the National Cancer Institute. J Clin Oncol 2007;25:5128–5132.

5. Chang VT, Hwang SS, Feuerman M, Kasimis BS. Symptom and quality of life survey of medical oncology patients at a Veterans Affairs Medical Center: a role for symptom assessment. Cancer 2000;88:1175–1183.

6. Kutner JS, Bryant LL, Beaty BL, Fairclough DL. Time course and characteristics of symptom distress and quality of life at the end of life. J Pain Symptom Manage 2007;34:227–236.

7. Paice J. Assessment of symptom clusters in people with cancer. J Natl Cancer Inst Monographs 2004;32:98–102.

8. Kirkova J, Davis MP, Walsh D, et al. Cancer symptom assessment instruments: a systematic review. J Clin Oncol 2006;24:1459–1473.

9. Teunissen SCCM, Wesker W, Kruitwagen C, et al. Symptom prevalence in patients with incurable cancer: a systematic review. J Pain Symptom Manage 2007;34:94–104.

10. Portenoy RK, Thaler HT, Kornblith AB, et al. The Memorial Symptom Assessment Scale: an instrument for the evaluation of symptom prevalence, characteristics and distress. Eur J Cancer 1994;30A:1326–1336.

11. Cheng KKF, Wong EMC, Ling WN, Chan WHC, Thompson DR. Measuring the symptom experience of Chinese cancer patients: a validation of the Chinese version of the Memorial Symptom Assessment Scale. J Pain Symptom Manage 2009;37:44–57.

12. Yildirim Y, Tokem Y, Bozkurt N, et al. Reliability and validity of the Turkish version of the Memorial Symptom Assessment Scale in cancer patients. Asian Pac J Cancer Prev 2011;12:3389–3396.

13. Browall M, Kenne Sarenmalm E, Nasic S, Wengström Y, Gaston-Johansson F. Validity and reliability of the Swedish version of the Memorial Symptom Assessment Scale (MSAS): an instrument for the evaluation of symptom prevalence, characteristics, and distress. J Pain Symptom Manage 2013;46:131–141.

14. Abu Zeinah GF, Al-Kindi SG, Hassan AA. Middle East experience in palliative care. Am J Hosp Palliat Care 2013;30:94–99.

15. Fayers PM, Aaronson NK, Bjordal K, et al. on behalf of the EORTC Quality of Life Group. The EORTC QLQ-C30 scoring manual, 3rd ed. Brussels: European Organisation for Research and Treatment of Cancer, 2001.

16. Varricchio CG. Measurements issues concerning linguistic translations. In: Frank-Stromborg M, Olsen J, eds. Instruments for Clinical Health-Care Research. Sudbury: Jones and Bartlett, 2004:56–64.

17. Nunnally JC, Bernstein IH. Psychometric theory, 3rd ed. New York: McGraw-Hill, 1994.