Predictors of quality of life in older adult patients in Lebanon: a cross sectional study

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Background: The older adult population in Lebanon is anticipated to double by year 2030. The health care resources available for the geriatric population is limited and there is much reliance on the social support of family caregivers. Older adults have double the rate of hospital utilization in comparison to the regular Lebanese population where 4.5% are hospitalized more than once per year. This study aims to describe self-reported quality of life (QoL) among hospitalized patients "with palliative care needs" and investigate the relationship with its four health domains.
Methods: An observational survey design with a convenience sample of 203 hospitalized patients with palliative care needs above 65 years of age were recruited from three hospitals. Descriptive statistics and regression analysis were used to describe and determine the association between health domains and QoL.
Results: Mean age of participants was 78.5 years with the majority being male and married. Participants reported low overall QoL with a mean score of 35.43 (SD =23.45). Anxiety and depression were common findings. "Worrying" (83%), "Feeling nervous" (80%), "Feeling sad" (76%) were dominant psychological symptoms. Low scores were also observed for physical, role and social functioning. Participants suffered from lack of energy (94%), pain (72%), difficulty sleeping (73%) and shortness of breath (64%).
Conclusions: The findings suggest that QoL in the aging Lebanese population is burdened with physical and psychological symptoms. A comprehensive approach that attends to the psychosocial as well as the physical problems in older adults with early integration of symptom management and palliation could improve QoL.

Keywords: Older adults; hospitalization; quality of life (QoL); palliative care; observational survey

Introduction

The world population is aging. By 2050, it is estimated that number of older adults above 80 will triple in number from 2017, reaching 425 million (1). The average growth rate is expected to be 2.6% and 3.8% for those 65+ and 80+ years, respectively (2). In 2012, people aged 65+ constituted 10% of the Lebanese population, and are expected to double by 2030 (3). The outmigration of its youth in pursuit of better job opportunities influences the availability and accessibility of social resources, and consequently the experience of aging. Moreover, it deprives the elderly from the social networks and family support that is embedded in Lebanese culture of close intergenerational ties (4). The quality of life (QoL) of older adults is affected due to the shortage of nursing homes, limited funding for health services and

limited number of health care professionals. Hospitals lack a specialized geriatric ward and many medical or nursing schools have insufficient gerontology training (5). Aging is stigmatized and geriatrics is rather an unappealing specialty to the graduate medical students, leaving geriatric care in the hands of general practitioners (6).

Multiple comorbidities and their interrelatedness not only affects the health care utilization pattern, and costs, but also quality of care provided and consequently patient outcomes (7). The Lebanese older adult's health profile is characterized by multiple non-communicable diseases as well as mental health conditions demanding extensive health care services (8). The Lebanese older person is prescribed around 8 to 9 drug per year (8). Moreover, this person requires hospitalization more than twice the average population with 4.5 % being hospitalised more than one time per year (9).

Accordingly, older people with comorbidities are likely to experience negative effects of their comorbidities at the end of life. Palliative care services could be integrated in the health system and tailored to meet the patient specific needs of this vulnerable population (10). Palliative care aims to preserve the QoL and the dignity of patients and their families towards end of life, reducing the excessive

use of futile interventions that merely prolong suffering. Its services aim at providing physical and psychosocial aspects of care.

The concept of QoL in older adults is related to various factors at the societal and individual levels. Physical and psychological related variables as well as environmental resources, have all been studied to examine how they affect QoL in the Western countries (11-14). Studying QoL in Lebanese context would shed light on how it differs from the international evidence. The meaning of QoL according to the understanding of nursing home residents in Lebanon emerged as "maintaining family connectedness", "engaging in meaningful activities" and "keeping spiritual beliefs" as core constructs of the phenomenon (15). Mild depression and low functionality were found to be common in Lebanese residents in nursing homes (16).

The availability of research on the QoL of older adults in Lebanon is limited, and is restricted to the hospitalization phase. Since many older adults spend their last days in hospitals (9), it is important to explore how their QoL is perceived. The study aims to describe the self-reported QoL of hospitalized older Lebanese adults, aged 65 and above, and investigate its association with the four World Health Organization Quality of Life (WHOQOL) domain predictors (physical, psychological, social and environmental domains). We present the following article in accordance with the STROBE reporting checklist (available at https://apm.amegroups.com/article/view/10.21037/apm-22-619/rc).

Methods

Study design, setting, and sample

This is an observational survey design that targets Lebanese hospitalized patients 65 years and older, with palliative care needs. The definition of an older adult in this paper is any person whose age is 65 years and above. The participants were suffering from multiple chronic illnesses who qualified for palliative care when screened by the NECPAL from Necesidades Paliativas in Spanish (Palliative Needs) assessment tool and accepted to participate in the study (17). Older adults, who were distressed, cognitively challenged, or receiving end-of-life care, were excluded from participation.

We started by purposively selecting three medical teaching hospitals; from those hospitals a convenience sample of older adults (N=203) was recruited. Sample size

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Highlight box

Key findings
- This study aims to describe self-reported quality of life (QoL) among hospitalized patients with palliative care needs. Results showed low overall QoL and presence of anxiety and depression. Worrying, feeling nervous, and feeling sad were dominant psychological symptoms. Older adults also suffered from lack of energy, pain, difficulty sleeping, and shortness of breath. Low scores were also observed for physical, role and social functioning.

What is known and what is new
- This study presents new findings on QoL among older adults in Lebanon and suggests that QoL is burdened with physical and psychological symptoms.

What is the implication, and what should change now?
- A comprehensive approach integrating palliative care services alongside curative treatment and focusing on comprehensive assessment of the geriatric patient rather than focusing only on curative strategies may result in better patient outcomes. This implies education of health care providers, developing clear health management pathways, and instituting a collaborative approach to facilitate access to specialist palliative care teams are highly needed.

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was calculated for a multiple linear regression with eight health domains and a moderate effect size. For 80% power and 5% alpha, the needed sample size was 109. However, since stratification by age and gender was intended, a sample size of 200 was recruited. Data collection was conducted by three research assistants. End of life patients were excluded to avoid over burdening them.

Theoretical framework

The WHOQOL framework recognizes the multi-dimensional nature of QoL and elaborates the relationship between QoL and several life domains (11). Therefore, the above framework was selected to explore the association between physical, psychological, social and environmental wellbeing, and self-reported QoL in hospitalized older adults in a Lebanese context.

Accordingly, the aims of the current study were to (I) describe self-reported QoL among Lebanese hospitalized older patients; and to (II) investigate the relationship between four WHOQOL domain predictors and self-reported QoL.

Data sources, variables and measurements

The study was conducted in accordance with the Declaration of Helsinki (as revised in 2013). The study had gained approval from the ethics committee at the American University of Beirut (No. NUR.HA.09). The participants were informed that the enrollment in the study was voluntary without imposing and any rejection will not affect the quality of care provided. Face to face interviews using the Arabic language were conducted by trained research assistants after securing an informed consent from the participants. Data collection took place in the hospital settings.

Outcome variable

Overall QoL status was measured using Global Health Status sub-scale from the European Organization for Research & Treatment of Cancer (EORTC QLQ-C30) instrument (18). The subscale included 2 items: patient self-perceived overall quality of health, and QoL, measured on a 7-point Likert scale. The EORTC QLQ-C30 measures functional subscales that were computed by averaging the items in each subscale, and then linearly transforming the scores to take values from 0-100 based on the EORTC QLQ-C 30 scoring manual. A

higher score on a functional subscale indicates a high level of functioning and a high score for the global health status indicates a high QoL. Anything below 50 would be considered low and anything above 60 would be considered high with average scores ranging from 50–60. Cronbach's alpha for the QoL subscale in this study was 0.86 (18). The Arabic version of the EORTC was used that was found to be valid and reliable (six out of nine subscales had Cronbach's alpha coefficients above 0.70) (19).

Explanatory variables

Socio-demographic variables including age, gender, marital status, and companionship) were captured from the patients at the beginning of the interview.

Each of the four major domains is assessed using a specific measurement scale. The following section describes the assessment instrument of each domain.

Physical domain

Physical health was measured using the 24 items from the Memorial Symptom Assessment Scale (MSAS) (20). The validated Arabic version of the MSAS was used whose Cronbach's alpha coefficients ranged from 0.71 to 0.83 (21). Symptoms included the prevalence of experienced symptoms in the past week prior to the survey. Kuder-Richarson (KR-20) reliability coefficient of the 24 items in this study was 0.92. A total score was computed ranging from 0 to 24, with a higher score indicating a higher reporting of physical symptoms. Physical functioning and role functioning were also assessed using 5-item and 2-item subscales from the EORTC-QLQ-C30 instrument, respectively (18). The items were measured using 4-point Likert scale (1= not at all; 2= a little; 3= quite a bit; 4= very much). Cronbach's alphas in the current study were 0.91 for physical and 0.89 for role functioning.

Psychological domain

Presence of anxiety and/or depression among participants was assessed using the Hospital Anxiety Depression Scale (HADS). It is divided into both an anxiety 7-item subscale (HADS-A, Cronbach alpha 0.83) and a depression 7-item subscale (HADS-D, Cronbach alpha 0.82) (22). The Arabic version of HADS (Cronbach's alpha for the anxiety subscale was 0.83 and 0.77 for the depression subscale) (23). Other Psychological symptoms were measured via six symptom items subscale from the Memorial Symptom Assessment Scale (MSAS) (20). KR-20 coefficient of the 6 items in the current study was 0.75. A total score was computed ranging from 0 to 6, with a higher score indicating a higher reporting of psychological symptoms.

Cognitive function was assessed through one item from the EORTC-QLQ-C30 on whether the patient is having difficulty remembering things (18). A 4-point Likert scale (1= not at all; 2= a little; 3= quite a bit; 4= very much) was used. Spirituality was measured using a five-item subscale on spiritual and existential matters extracted from the Needs at End of life Screening Tool (NEST) by Emanuel, Alpert (24). The first item was reverse coded before the average score of the five items was computed. Cronbach's alpha of the spiritual subscale in this study was 0.66.

Social relationship domain

Social functioning was measured using two items from the EORTC-QLQ-C30 (18). Cronbach's alpha was 0.92.

Social support as part of social functioning was assessed using a two-item subscale from the NEST (24) on (I) having someone to confide to; and (II) to spend good time with. Cronbach's alpha of the two items was 0.90.

Professional support was measured via two items derived from the NEST (24) describing the patients` perception on (I) whether they feel that their doctor/nurse listens to them about their illnesses; and (II) if participants have difficulty expressing their feelings to their doctor/nurse. The second item was reverse coded and average score of the two items was computed. (Cronbach's alpha for these two items was 0.24).

Environmental domain

Financial burden was measured using a 2-item subscale on financial burden and one item that was investigator-developed. The 2-item subscale assessed the financial hardship of patients and their families due to illness and the problem with health insurance to cover treatment expenditure. The questions used to produce this scale were part of the NEST (24). The items were measured using a scale of 1–10 (1= not at all; 10= great deal) and averaged. The subscale's Cronbach's alpha was 0.68. The investigator-developed item captured the monthly average expenditure on medications and doctors' visits.

Statistical analysis

Descriptive statistics was applied. Linear regression analysis was used to determine the association between health domains and QoL among the participants. Significant variables at the univariate level were entered in the stepwise multivariable regression model. Normality of the residuals was inspected graphically and by the Shapiro-Wilk normality test. Collinearity between the predictors was assessed by variance inflation factors (VIF), where a VIF greater than 4 indicated the presence of collinearity. Data entry, management, and analyses were done in SPSS version 24.0 for Windows. A P value of <0.05 was considered significant. In the stepwise selection procedure, significant variables were entered in the model one at a time, starting with the strongest predictor; at every new entry, the variables already in the model were checked to see if any of them lost its significance and should therefore be removed.

Results

Sample characteristics

A total of 203 patients participated in this study. Background characteristics of the participants are presented in *Table 1*. The participants had a mean age of 78.61 years (SD =7.73) with the majority being males (58.9%) and married (68%) and only very few reported living alone (5.4%). The majority (68.1%) reported spending less than $333 per month for medical expenditures and reported mean score on financial burden of 4.00 out of 10 (SD =2.46). This indicates that the participants did not suffer from a major financial burden, though the spent sum constitutes one fourth of the average monthly income of a Lebanese citizen (25). This might reflect that the participants belonged to a middle or above middle socio-economic class. Higher mean scores were reported for spirituality (mean =6.55, SD =1.91), social support (mean =6.85, SD =2.86) and professional support (mean =6.98, SD =2.11) in comparison to other factors. Average anxiety score was 7.90 (SD =5.02) and average depression score was 9.97 (SD =10.95).

Self-reported physical and emotional symptoms

Physical well-being were assessed by 24 symptoms. The most frequently reported were: "Lack of energy" (94%), "Pain" (71%), "Shortness of breath" (67%), "Lack of appetite" (66%) and "Weight loss" (64%). The least reported symptoms were "Sweats" (32%), "Mouth sores" (30%), and "Hair loss" (27%). The average score was 12.08 and 4.37 respectively.

The symptoms related to psychological well-being were assessed by 6 symptoms: "Worrying (83%)", "Feeling nervous (80%)", "Feeling sad (76%)", "Difficulty in sleeping" (73%), "I don't look like myself" (69%), and "Difficulty concentrating (55%)". Average psychological well-being score was 4.37/6 (SD =1.74) (*Table 2*).

Self-reported quality of life (EORTC QLQ-C30 subscales)

QoL subscales are summarized in *Table 3*. Subjects reported low overall QoL with a mean score of 35.43 (SD =23.45). Low levels were also observed for physical, role and social functioning. Cognitive functioning showed a higher score but still indicated a low level of functioning.

Table 1 Demographic characteristics of the study sample (categorical variables)

Variables	N (sample size)	%
Gender		
Male	119	58.9
Female	83	41.1
Marital status		
Married	136	68.0
Single/divorced/widowed	64	32.0
Companionship		
Live alone	11	5.4
Live with others	192	94.6
Expenditures		
≤$333	130	68.1
>$333	61	31.9

Relationship between WHOQOL four domains and self-reported QoL

At the univariate level, physical symptoms, spirituality, social support, professional support, health expenditures, all the functional subscales, as well as the depression and anxiety scores were significantly associated with QoL and were therefore entered in the stepwise multivariable regression model. This process was repeated until all remaining variables were significant. In the final model, physical functioning, cognitive functioning, and anxiety remained significantly associated with QoL and explained 25% of the total variability in QoL scores (*Table 4*).

Discussion

The overall reported QoL was considerably low with a mean score of 35.43 (SD =23.45). We considered the scores to be low, based on the EORTC QLQ-C 30 scoring manual, which considers 50 as the decisive value. Even on the subscale level, individual scores were low, i.e., on the physical, emotional and social functioning dimensions. This implies that the complex needs of this vulnerable population are not met sufficiently. The cognitive functioning score was slightly higher than the other three scales, nevertheless, this can't be conclusive since only one item was used for its measurement. In comparison to the existing

Table 2 Multi-Domain Assessment of the study sample (continuous variables)

Variables	Mean	Median	Standard deviation	Minimum	Maximum
Age and Health Domain in years	78.61	79.00	7.73	65.00	97.00
Spirituality [1–10]	6.55	6.80	1.91	1.20	10.00
Social support [1–10]	6.85	7.00	2.86	1.00	10.00
Professional support [1–10]	6.98	6.50	2.11	1.00	10.00
Financial burden [1–10]	4.00	4.00	2.46	1.00	10.00
Hospital anxiety and depression scale (HADS) [0–21]	9.97	9.00	10.95	0	21
HADS anxiety [0–21]	7.90	7.00	5.02	0	21
Physical symptoms [0–24]	12.08	10.00	6.80	0	24
Psychological symptoms [0–6]	4.37	5.00	1.74	0	6

Table 3 Distribution of quality of life scores

Variables	Mean	Standard deviation	Median	Minimum	Maximum
Quality of life score	35.43	23.45	33.33	0	83
Physical functioning	36.24	28.08	33.33	0	100
Role functioning	28.14	28.68	33.33	0	100
Cognitive functioning	57.64	30.23	66.67	0	100
Social functioning	39.08	31.33	33.33	0	100

Table 4 Relationship between WHOQOL four domains and self-reported quality of life

Variables	Unadjusted		Adjusted	
	B (unstandardized beta)	95% CI	B	95% CI
Socio-demographics				
Age (years)	0.26	(−0.16, 0.68)		
Gender (reference)	−4.05	(−10.67, 2.56)		
Marital status	−5.35	(−12.38, 1.68)		
Companionship	2.21	(−12.16,16.58)		
Physical domain				
Physical symptoms	0.54	(0.06, 1.02)		
Physical functioning	0.35**	(0.24, 0.45)	0.20	(0.07, 0.32)
Role functioning	0.33**	(0.23, 0.44)		
Psychological domain				
HADS depression	−0.32	(−0.62, −0.02)		
HADS anxiety	−1.69**	(−2.30, −1.10)	−1.20**	(−1.83, −0.57)
Psychological symptoms	−0.69	(−2.56, 1.19)		
Cognitive functioning	0.27**	(0.17, 0.37)	0.13	(0.01, 0.24)
Spirituality	2.33	(0.66, 4.00)		
Social domain				
Social functioning	0.30**	(0.21, 0.40)		
Social support	2.26**	(1.16, 3.36)		
Professional support	2.83**	(1.33, 4.33)		
Environmental Domain				
Financial burden	−0.40	(−1.72, 0.93)		
Expenditures	−11.43*	(−18.28, −4.58)		

Adjusted R^2=0.25. *$P \leq 0.05$; **$P \leq 0.01$. WHOQOL, World Health Organization Quality of Life; B, beta; CI, confidence interval; HADS, Hospital Anxiety Depression Scale.

literature (12), this low perceived QoL was alarming in the Lebanese hospitalized elderly population. The low QoL score can be explained by the fact that the sample was drawn from hospitalized participants with a high symptom burden as they were considered to be eligible for palliative care as per the NECPAL screening. Although this was the case, they received no referral to a specialist palliative care team according to the patients' medical files.

This is a common finding in Lebanon, where hospitalized patients are facing aggressive treatments till the end of life and palliative care services are offered only at the very end (26).

Despite the evidence that early integration of palliative care enhances QoL and reduces health costs, Health care workers tend to focus on curing the disease rather than preserving patient QoL.

Physical and cognitive functioning were found to be significantly associated with QoL. Previous research has found cognitive function and physical symptoms to be associated with poor QoL (12,27,28). Social support that is unique to the Lebanese family set-up, as well as health care professional support were reported relatively high, thus protective to the older adult's QoL (29).

Anxiety and depression were found to be significantly associated with QoL, which is congruent with previous QoL studies where optimum psychological resources are associated with successful aging (29,30). Our finding suggests that more than 80% of older adults worry, are nervous, unhappy and suffering from impaired sleep. This flags a great need for psychological support. This could be due to limited resources, inadequate training of health providers in the identification of geriatric needs, and the late involvement of palliative care services (31).

Furthermore, existing studies have shown a correlation between spirituality and financial burden with self-reported QoL, which was not evident in our study (32-34). At the unadjusted level, expenditures and spiritually had a significant association with QoL, but this association was lost once they were added to the multiple regression model. Although the associations are significant but because they are small, they may not be clinically relevant. This is in contrast to previous evidence where spirituality is acknowledged as a significant component for good QoL in older adults (15). However, if religious practices had been assess as part of spirituality in the survey tool, the results might have been different. Thus, further investigation is warranted.

Limitations

The main limitation of this study is the use of convenience sampling that potentiates selection bias. The disease type was not assessed since all patients have multiple morbidities. The sites of recruitment are not representative of the whole Lebanese older adult population as it just captures patients with palliative care needs hospitalized in particular tertiary hospitals reflecting the affluent layer of the population who is financially capable to access these services. Another limitation lies in the fact that QoL was not studied in relation to disease diagnosis or the presence of multiple comorbidities nor its severity, limiting the understanding of diagnosis specific variations. Thus, the results should be interpreted with great caution and are not to be generalized to all hospitalized patients. Another limitation worth mentioning is the used European assessment tool of QoL the EORTC QLQ-C30 that is specifically tailored to cancer patients and might not sufficiently capture the Lebanese Middle-eastern psychosocial dimension particularly that of spirituality and family connectedness that bear a unique meaning and weight. EORTC QLQ-C30 was however validated by patients from Lebanon.

Conclusions

The Lebanese older adult is at a precarious position because living longer does not necessarily translate to successful aging. The changing demographics requires a robust policy framework and infrastructure in terms of the preparation of human and environmental resources to respond to the complex needs of aging populations (34).

Integrating palliative care services alongside curative treatment and focusing on comprehensive assessment of the geriatric patient rather than focusing only on curative strategies may result in better patient outcomes (26).

This implies education of the health providers, developing clear health management pathways, collaborative approach and facilitating access to specialist palliative care teams (8).

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Footnote

Reporting Checklist: The authors have completed the STROBE reporting checklist. Available at https://apm.amegroups.com/article/view/10.21037/apm-22-619/rc

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