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Quality of life of elderly people attending a Geriatric Club: a cross sectional study in Dakahlia governorate, Egypt

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A B S T R A C T

Introduction: *The quality of life (QoL) of older adults is largely affected with advancing age and the accompanying changes in health, independence, and social engagement. The objective of this study is to measure quality of life of the elderly adults and identify factors affecting it.*

Methods*: A cross-sectional study was conducted on 400 elderly participants attending a geriatric club in Dakahlia governorate, Egypt. QoL was assessed by using Arabic version of SF-36 scale. This instrument contains eight subscales namely physical function (PF), role-physical (RP), bodily pain (BP), general health (GH), vitality (VT), social functioning (SF), role-emotional (RE), and mental health (MH).*

Results*: The total QoL score (mean ± standard deviation) is 62.39 ± 7.76 with the lowest score obtained in VT scale (48.04±14.32), and the highest scores are in SF scale (73.87± 17.97). Independent predictors of the total QoL scale are age (regression coefficient (95% CI) = -2.1 (-3.5 to -0.7), p value = 0.004), educational level (regression coefficient (95% CI) = -3.13 (-4.5 to -1.8), p value < 0.001), marital status (regression coefficient (95% CI) = -2.1 (-3.9 to -0.7), p value = 0.004), physical activity (regression coefficient (95% CI) = -2.3 (-3.9 to -0.8), p value < 0.001), comorbidities (regression coefficient (95% CI) = -3.8 (-5 to -2.4), p value < 0.001), and hospitalization (regression coefficient (95% CI) = -2.5 (-4.3 to -0.71), p value = 0.006).*

Conclusions: *QoL of old people is affected not only by aging but also by other factors such as educational level, marital status, physical activity, comorbidities and hospitalization. Older adults with substantial predictors of lower quality of life should be given more attention.*

Keywords: *Quality of life, SF-36, Elderly*

INTRODUCTION

The number of elderly people has increased worldwide as result of demographic transition in the 20th century The percentage of individuals aged 60 years and older is predicted to double from about 11% in 2000 to 22% in 2050, with 80% of them living in developing nations [1]. Although this is one of humanity's major achievements, it also presents a challenge to society to adapt and to optimize the health and well-being of the elderly as well as their security and social engagement [2]. In Egypt, the number of elderly people is rapidly increasing. In 2019, Central agency for public mobilization statistic reported that the total number of Egyptian population was 94.8 million, with 7% of the population being 60 years of age or over [4]. By 2030, that number is predicted to rise to 12% [3].

The quality of life (QoL) assessment in older adults is critical to evaluate their well-being and understand the challenges they encounter as their age increases. Numerous measures have been developed to assess QoL and related concepts of functional status. Among them are the Sickness Impact Profile, the Medical Outcomes Study Short Forms (SF-12 and SF-36), and World Health Organization Quality of Life BREF (WHOQOL-BREF) [4]. Measuring QoL offers valuable insights into their social, mental, and physical health, enabling healthcare providers, policymakers, and caregivers to detect areas where intervention is required. Also, it helps to assess the effectiveness of interventions designed to enhance health outcomes, such as medical care, social initiatives, or community programs [5].

Moreover, it considers factors such as mobility, independence, emotional well-being, and access to health services, that are crucial for achieving healthy aging. Research has reported that improving QoL can result in longer lifespan, fewer hospitalization, and better overall health [6]. Furthermore, the World Health Organization highlights QoL assessment as a key element for designing public health strategies and age-friendly environments for aging populations [7].

QoL of the older adults is affected by numerous interconnected factors, including marital status, educational level, comorbidities, and level of physical activity [8]. Research indicates that elderly adults who are married tend to report higher levels of QoL, likely due to the social and emotional support provided by a spouse [9]. The educational level plays an important role as well, with higher educational attainment being associated with better health literacy, greater financial security and, improved access to healthcare, all of which contribute to better QoL outcomes [10]. Additionally, comorbidities, such as diabetes, hypertension, and heart conditions, that are prevalent among Egyptian older adults and negatively impact their QoL by restricting independence and mobility [11]. Lastly, physical activity is crucial; elderly individuals who engage in regular exercise tend to experience fewer health problems, improved mental well-being, and higher overall QoL [12]. Addressing these issues through targeted interventions can significantly improve the well-being of Egyptian senior citizens. Thus, this study aimed to measure quality of life and identify factors affecting it in the elderly adults attending a geriatric club in Dakahlia governorate, Egypt.

METHODS

Research design and setting

A cross-sectional study was conducted at El Saada Club, affiliated to the General Senior Citizens Association and supervised by the Ministry of Social Solidarity. The club was founded in 1996 in Talkha city, Dakahlia Governorate in Egypt. It is located directly on the Corniche of the Nile, with an area of 1,140 square meters. As of 2024, the club has 3,000 members, including 1,200 men over 60 years old and 1,800 women over 50 years old. The club offers a variety of events and activities that address cultural, religious, social, recreational and health aspects of seniors' lives, aiming to enhance their public engagement and help them use their free time in productively.

Study participants

The study targeted Egyptian adults aged 60 years and older, both males and females who are attending El Saada club and are willing to participate in the study. Markedly ill elders who were unable to communicate were excluded from the study.

Sample size and sampling technique

An external pilot study was conducted, and the estimated mean of the overall QoL score was used for calculating the sample size. The external pilot study demonstrated QoL score mean ± standard deviation of 60.86±8.32. Considering 5% alpha error, 20% beta error and 3% level of precision, sample size was calculated, using the MedCalc program for Windows (version 19.6.1), to be 398 individuals at least and the full-scale study included 400 individuals.

Data collection

Data were collected from September 2023 to April 2024 using a structured interviewer administered Arabic questionnaire. The collected data included socio-demographic characteristics including age, sex, employment, income, education, marital status, as well as some data related to physical activity, presence or absence of chronic disease (including hypertension,

diabetes mellitus, cardiovascular disease, bronchial asthma, etc.) and hospitalization within the past year.

Arabic version of the short form questionnaire, SF-36, was used to measure QoL of participants. SF-36 is the most widely used generic instrument to measure HRQOL. It has been developed in the United State of America, translated in a variety of languages and validated in many countries. According to a previous study in Saudi Arabia, the Arabic version of SF-36 is a reliable and valid measure of health-related quality of life among the general population [13]. SF-36 questionnaire includes 36 questions organized into eight sub-scales. These subscales include the following: physical functioning (PF), role limitations caused by physical health problems (RP), bodily pain (BP), general health perceptions (GH), vitality (VT), social functioning (SF), role limitations caused by emotional problems (RE), and mental health (MH). The scores of each HRQOL domains ranged from 0 to 100, with higher score indicating better HRQOL.

Ethical approval for this study was acquired from Institution Research Board (IRB) (code number: MD.21.05. 472.R1). Informed consent was obtained from respondents and the collected data were not used for any other purpose.

Data analysis

Data were coded, processed and analyzed using IBM SPSS Statistics for Windows, Version 25.0 (IBM Corp, 2017). Qualitative data were presented as numbers and percentages, while continuous data were expressed as mean ± standard deviation. Student's t-test was used to compare normally distributed continuous data between 2 groups, while Analysis of variance (ANOVA) test used to compare normally distributed continuous data between more than 2 groups with Bonferroni post hoc for multiple comparison. Stepwise multiple linear regression analysis was applied to evaluate the contribution of factors found to be significant in bivariate analysis in predicting total QOL score. Qualitative variables were included in the model as dummy variables. They are coded as 0: male sex, employed, sufficient income, > secondary education, married, no comorbidities, physically active, and no hospitalization within the past year. 1 was given for female sex, employed, insufficient income, ≤ secondary education, unmarried, no physical activity, presence of chronic diseases, hospitalization within the past year. P value ≤ 0.05 was considered statistically significant.

RESULTS

General characteristics of the participants

A total of 400 respondents were included in the study, of which 54.8% were females. More than half of respondents were married (64.7%) and had sufficient income (69.7%). Nearly half of the participants (48.7%) held a higher level of education, while only 31.8% were employed and 25.5% were physically active. A significant portion of the sample had chronic diseases (52.2%). Additionally, 18.7% had been hospitalized within the past year (Table 1).

QoL score

The total score (mean ± standard deviation) was 62.39 ± 7.76 with the lowest score obtained in vitality scale (48.04±14.32), and the highest scores are in social functioning scale (73.87± 17.97) (Table 2).

QoL score and participants characteristics

A statistically significant higher mean QOL scores were observed in respondents aged 60-64 years (mean ± standard deviation, 65.07 ± 7.75 versus 61.72 ± 7.14 and 57.77 ± 6.57, p value < 0.001) for those aged 65-69 years and ≥ 70 years, respectively. Also, males had higher mean QoL score than females (64 ± 7.96 versus 61.06 ± 7.34, p value < 0.001). Mean QoL score was also found to be significantly higher in employed participants compared to unemployed (63.6 ± 8.02 versus 61.8 ± 7.59, p value = 0.037) highly educated compared to those holding basic secondary educational level (64.8 ± 7.48 versus 60.03 ± 8.33 and 60.13 ± 6.87, p value < 0.001), married compared to unmarried (63.84 ± 7.43 versus 59.72 ± 7.66, p value < 0.001) and participants with comorbidities compared to absent comorbidities (65.18 ± 7.76 versus 59.84 ± 6.84, p value < 0.001) physically active compared to physically inactive (65.76 ± 7.46 versus 61.23 ± 7.52, p value < 0.001) and participants not admitted to hospital versus to those hospitalized within the past year (63.34 ± 7.49 versus 58.25 ± 7.49, p value < 0.001) (Table 3).

Predictors of QoL score

Significant variables in the bivariable analysis were entered into multiple linear regression analysis model, which revealed that age (regression coefficient (95% CI) = -2.1 (-3.5 to -0.7), p value = 0.004), ≤ secondary education (regression coefficient (95% CI) = -3.13 (-4.5 to -1.8), p value < 0.001), unmarried (regression coefficient (95% CI) = -2.1 (-3.9 to -0.8), p value = 0.004), physical inactivity (regression coefficient (95% CI) = -2.3 (-3.9 to -0.8), p value = 0.003) comorbidities (regression coefficient (95% CI) = -3.8 (-5 to -2.4), p value < 0.001), and hospitalization within the past year (regression coefficient (95% CI) = -2.5 (-4.3 to -0.71), p value = 0.006) were the independent predictors for overall QoL score (Table 4).

Table 1: Characters of study population

Variables	Total N (%) N=400
Age	
60-64 years	166 (41.5)
65-69 years	161 (40.3)
≥ 70 years	73 (18.2)
Sex	
Male	181 (45.2)
Female	219 (54.8)
Occupation	
Employed	127 (31.8)
Not employed / Retired	273 (68.2)
Monthly income	
Sufficient	279 (69.7)
Insufficient	121 (30.3)
Educational status	
Basic	62 (15.5)
Secondary	143 (35.8)
Higher	195 (48.7)
Marital status	
Married	259 (64.7)
Unmarried	141 (35.3)
Chronic diseases	
Absent	191 (47.8)
Present	209 (52.2)
Physical activity	
No	298 (74.5)
Yes	102 (25.5)
Hospitalization within the last year	
No	325 (81.3)
Yes	75 (18.7)

Table 2: SF-36 questionnaire total and subscales scores

Variables	Mean ± SD
Physical function (PF) scale	60.78 ±17.5
Role physical (RP) scale	58.56 ±17.2
Bodily pain (BP) scale	71.21 ± 22.7

General Health (GH) scale	50.59 ±13.7
Vitality (VT) scale	48.04±14.32
Role emotional (RE) scale	69.83±22.3
Social functioning (SF)scale	73.87± 17.97
Mental health (MH) scale	65.14± 20.6
Overall quality of life (QoL) score	62.39±7.76

Table 3: Distribution of QoL scores according to sociodemographic variables

Variables	Total	QoL score	P value
		Mean ± SD	
Age			
60-64 years	166	65.07 ± 7.75[ab]	<0.001
65-69 years	161	61.72 ± 7.14[a]	
≥ 70 years	73	57.77 ± 6.57[b]	
Sex			
Male	181	64 ± 7.96	<0.001
Female	219	61.06 ± 7.34	
Occupation			
Employed	127	63.6 ± 8.02	0.037
Not employed / Retired	273	61.8 ± 7.59	
Monthly income			
Sufficient	279	62.76 ± 7.89	0.138
Insufficient	121	61.53 ± 7.41	
Educational status			
Basic	62	60.03 ± 8.33[a]	<0.001
Secondary	143	60.13 ± 6.87[b]	
Higher	195	64.8 ± 7.48[ab]	
Marital status			
Married	259	63.84 ± 7.43	<0.001
Unmarried	141	59.72 ± 7.66	
Chronic diseases			
Absent	191	65.18 ± 7.76	<0.001
Present	209	59.84 ± 6.84	
Physical activity			
No	298	61.23 ± 7.52	<0.001
Yes	102	65.76 ± 7.46	
Hospitalization within the last year			
No	325	63.34 ± 7.49	<0.001
Yes	75	58.25 ± 7.49	

*Similar superscripted letter donates significant difference between groups within same column

Table 4: Multiple linear regression of significant independent predictors of Quality of Life

Variables	Multiple linear regression model	
	β (95% CI)	P value
Age	-2.1 (-3.5 - -0.7)	0.004
Educational level	-3.13 (-4.5 - -1.8)	< 0.001
Marital status	-2.1 (-3.9 - -0.7)	0.004

Physical activity	-2.3 (-3.9 - -0.8)	0.003
Comorbidities	-3.8 (-5 - -2.4)	< 0.001
Hospitalization within the past year	-2.5 (-4.3 - -0.71)	0.006
Constant	70.16	
Model F	25.8	
Model R^2	0.28	
P value	< 0.001	

β: regression coefficient, CI: Confidence Interval, Model F: Model Analysis of Variance F test, Model R2: Model R square. Qualitative variables were included in the model as dummy variables. They are coded as 0: age male sex, employed, sufficient income, > higher education, married, physically active, no comorbidities, no hospitalization within the past year.

DISCUSSION

The phenomenon of longer life expectancy emerging from development of medicine has increased the number of older adults suffering from chronic conditions, disabilities, and functional limitations. The primary goal of all older persons is to enjoy and maintain a good QoL [14]. Studying the determinants of QoL in the elderly is a subject of increasing interest for developing appropriate public health policy to improve healthcare and quality of life older people [15]. In this study, the mean score of the overall Qol was 62.39 ± 7.76. However, higher overall Qol score (73.55 ± 12.94) was reported in cross-sectional survey conducted among 1015 elderly people in in China [16]. On the other hand, lower overall Qol score was found in previous studies in India (56.7±17.2) [1], Iran (54.03 ± 23.56) [17], and China (47.90 ± 5.86) [18]. The variation in Qol scores among the elderly across different studies can be attributed to difference in socio-economic status, and health conditions of participants. Moreover, cultural attitudes toward aging, access to healthcare, and availability of social support, can further contribute to differences in QoL scores [6].

Significant age group differences in mean score of overall Qol were observed, with oldest old age group (≥ 70 years) having the worst scores. Furthermore, increasing age was found to be a significant predictor of worse QoL. In agreement with this finding, previous study conducted in China showed that age was a significant predictor of QoL with mean score of overall Qol progressively declined with advancing age [18]. On the contrary, previous studies in Spain [19] and Indonesia [20] showed no association between age and Qol score**.** The association between increased age and low QoL scores can be explained by the fact that along with advancing age, the incidence of chronic diseases and functional dependence increase. Difficulties in locomotion hinder the autonomy of the individual impairing Qol [10].

The present study revealed nonsignificant association between income and QoL in the elderly participants. In line with this finding, a study conducted in Spain observed that social support, health status, and lifestyle factors outweighed the influence of income in determining QoL [21]. Furthermore, a study performed in Malaysia illustrated that many elderly individuals have adapted to a fixed income and adjusted their lifestyles accordingly, reducing the perceived importance of wealth on their quality of life [22]. In contrast, previous studies Spain [19] and China [18] revealed a positive correlation between socio-economic status and Qol. The present study revealed that education was a significant predictor of poor QoL in the elderly participants. Likewise, a study conducted in Brazil revealed that the low level of schooling was associated, in both sexes, with lower score the physical and mental dimensions of Qol [23]. Conversely, a study conducted in Korea demonstrated that education level had no significant effects on any dimension of Qol [24]. The significant association between education and Qol in the current study could be explained by the fact that those with higher levels of education often receive a higher standard of health care, take better care of themselves, and avoid inappropriate lifestyles [25].

The results of this study showed that the marital status of the elderly is closely significantly associated with physical health and overall Qol. Also, it was found that being unmarried was a predictor of worse QoL score. This finding is line with previous studies in China [25], and Brazil [23]. Existence of chronic disease was significantly associated with lower QoL in the current study. Similar findings were reported by previous studies in China [18], Iran [17], and Spain [20]. The current study revealed that previous admission to hospital was a significant predictor of lower QoL. Similar findings were reported by previous studies in Brazil [26]. In contrast, a study conducted USA reported no significant association between

hospitalization QoL [27]. This result may be related to the fact that the hospitalization of the elderly is associated with the worsening of functional capability, which has the consequences of increasing dependence and decreasing autonomy impairing Qol [26].

Some limitations of this study should be considered. The study only involved participants from single locality, so the study findings cannot be generalized to all Egyptian older adults. These findings need to be confirmed by other studies involving a bigger sample. The study is a one-time cross-sectional study so couldn't ascertain the cause effect relationship between QoL and variables that could affect results. Additional research with longitudinal data would enable better understanding of QoL, and the role of complex set of variables in this process.

CONCLUSIONSQoL scores of participants were found to be moderate, with vitality scoring the lowest and social functioning the highest. QoL of old people is affected not only by aging but also by other factors such as educational level, marital status, physical activity, comorbidities and hospitalization. Older adults with substantial predictors of lower quality of life should be given more attention.

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