

# Assessment of Quality of Life among Elderly Patients Attending Primary Healthcare Centers in Aseer Region, Saudi Arabia

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## Abstract

**Aim of study:** Aim of study: To explore quality of life (QOL) among elderly population and to identify the factors associated with their QOL.

**Methods:** Following an observational cross-sectional research design, this study included 405 elderly patients attending the primary healthcare centers (PHCCs) in Aseer Region, Saudi Arabia. A self-administered questionnaire was constructed and utilized for data collection. It included personal and socio-demographic characteristics, lifestyle habits, clinical data and the WHOQOL-BREF Questionnaire to assess participants' QOL.

**Results:** About half of participants (53.3%) were males, 65.7% was less than 70 years old, 89.4% were Saudi, and 68.1% were currently married. Regular exercise was practiced by 19.3% of participants, while 8.4% were smokers. About two-thirds of participants were hypertensive (64%), or diabetic (63.2%), while 49.6% had musculoskeletal diseases, about one third had visual problems (38.8%), eye diseases (34.8%), or dyslipidemia (33.6%), while 23.2% had heart disease. The mean overall percent score for WHOQOL was 66.4±11.4%, while the lowest mean percent score was for their physical health (64.5±11.4%), while that for psychological domain was 66.2±11.5%, that for social relationships was 68.1±17.7%, and for environment was 67.6±14.6%,

while negative feelings were always felt by 4%, very often by 23%, and quite often by 45%. Participants' WHOQOL mean percent scores differed significantly according to their age group ( $p<0.001$ ), marital status ( $p<0.001$ ), educational status ( $p<0.001$ ), occupational status ( $p=0.001$ ), monthly income ( $p<0.001$ ), residence ( $p=0.004$ ), and regular practice of exercise ( $p<0.001$ ).

**Conclusions:** Elderly people attending PHC centers in Aseer Region have suboptimal overall QOL, with their physical health being the lowest manifestation. Several chronic diseases are highly prevalent among elderly people, such as hypertension, diabetes, sensory problems, musculoskeletal diseases, heart and urinary diseases. Therefore, it is necessary to provide high attention toward geriatric care in order to enhance their QOL.

**Key words:** Elderly, primary health care, Quality of life, life style, WHOQOL.

## Introduction

Globally, there is an increasing in longevity as a result of improvements in economics, living status and health, and Saudi Arabia is not an exception. By 2021, the estimated worldwide elderly population represented 21.1% of the population, with an expected rise to about two billion by 2050 (1). In the Kingdom of Saudi Arabia, life expectancy of men is 73.5 years and that of women 76.5 years and overall, 74.8 years and Saudi Arabia ranked the 84th position all over the world (2).

According to the World Health Organization (WHO), almost 15% of elderly population aged 60 years and over having neuropsychiatric disorders; commonly dementia and depression (3). Also, the world Health Organization declared that “aging must be accompanied by continuous opportunities for good health, participation, and security” to make it a positive experience (4). In order to achieve this, there should be comprehensive and multidisciplinary care for elderly people, considering the nature of their living environment (5).

The WHO defines the concept of quality of life (QOL) as “an individual’s perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards, and concerns” (6).

With increasing in the proportion of elderly population in the community, health demands and other social requirements increase (7). Studies have shown that aging is associated with deterioration of physical health, mental and memory weakness as well as psychological disturbance (8). The elderly population often faces various forms of pressure, such as health-care expenditures, work migration, financial disciplines, and reduced family size, which can adversely affect their life (9).

The most important aspects of QOL assessment among elderly people are autonomy, self-decision-making, absence of suffering and pain, competent sensory abilities, social support, sufficient financial level, feeling usefulness to others, self-sufficiency and happiness (10).

Determinants of quality of life among elderly people are numerous including demographic factors such as age and gender, socio-economic factors such as educational level, marital status, financial status and, social support, cultural values, health-related factors such as chronic illness, functional status, availability of health care services, and finally personal factors in the form of coping mechanisms and self-efficacy (7, 10-12).

This study aimed to explore quality of life among elderly population in Aseer Region, Kingdom Saudi Arabia and to identify the factors associated with their quality of life.

## Methodology

This study followed an observational cross-sectional research design. Elderly patients attending the governmental primary healthcare centers (PHCCs) in Aseer Region, Saudi Arabia constitute the target study population.

The minimum sample size was calculated according to Bartlett et al (13). to be 384, according to the formula:  $(n=Z^2 \times p \times q / d^2)$ , where (n) is the calculated sample size; (Z) is the z-value for the selected level of confidence = 1.96; (p) is the prevalence of poor QOL, which has been assumed to be 50%, (i.e., 0.05); (q) is (1-P), i.e., 0.50; and (d) is the maximum acceptable error (0.05). However, the sample size was increased to 405 to compensate for possible non-response and missing values.

Recruitment of participants took place during the period from July to August 2021. A multi-stage random sampling technique was applied. In the first stage, two out of the four geographical regions (East, West, North and South) Aseer Region were selected by simple random sampling. In the second stage, one PHCC was selected from each selected region by simple random technique. Moreover, the PHCC affiliated to King Khalid University was purposively selected. Finally, 135 elderly patients attending each of these three PHCCs were consecutively interviewed and recruited to the present study.

### Data collection tools

A self-administered questionnaire was constructed and utilized for data collection. It included the following parts: Personal and socio-demographic characteristics, including age in years, gender, highest educational level, marital status, average monthly income and current residence.

- Lifestyle habits: smoking, regular practice of physical exercise.

- Clinical data: history of associated co-morbidity e.g., diabetes, hypertension, cardiac disease, respiratory diseases, renal diseases, cancer, arthralgia, paralysis, hearing impairment and vision impairment, using moving aid.

- The WHOQOL-BREF Questionnaire to assess participants’ QOL. It is a 26-item reliable and validated tool assessing quality of life (QOL) in the domains of physical health, psychological health, social relationships and environment (14, 15). This tool has been tested across cultures including in general Arabic population and showed very good psychometric properties, such as construct validity and internal consistency with Cronbach’s alpha superior to other QOL assessment tools (16, 17). For categorization of the quality of life, the following values of the WHOQOL-BREF score were extracted from the reviewed studies and were applied in the current study: score  $\leq 45$ , poor HRQOL; score 46–65, moderate HRQOL; and score  $> 65$ , relatively high HRQOL (18).

### Data collection technique

After obtaining the necessary ethical approval (ECM# 2021-3601, on 21-2-2021) the researchers visited the selected three study PHCCs. Prior to data collection, the researchers briefly introduced themselves and offered a clear explanation of the study purpose to all PHC physicians and potential participants (or their caregivers). Approximately 10-15 elderly participants could be recruited daily. Interviews were conducted during participants' waiting times. Data were collected during the period from March till May 2021.

### Data entry and statistical analysis

Descriptive and analytic statistical methods and tests were adopted using the Statistical Package for Social Sciences (IBM, SPSS version 25). Frequency and percentage were calculated for all categorical variables, while mean and standard deviation were calculated for quantitative variables. Hypotheses testing was conducted using the chi square test ( $\chi^2$ ) to detect relationships between categorical variables, while independent t-test, or analysis of variance (ANOVA) were applied to compared means between groups. Level of significance was decided at  $p < 0.05$ .

All official approvals were fulfilled before conducting the research. Before start of data collection, an informed consent has been asked from every potential participant who was informed that he/she has the full right not to participate in the study or to withdraw prior to its completion. Confidentiality and privacy were guaranteed for all participants.

## Results

Table (1) shows that 53.3% of participants were males, 65.7% was less than 70 years old, 89.4% were Saudi, and 68.1% were currently married. About one-third of participants (36%) were illiterate, while 15.8% were university educated. The monthly income of 47.9% was less than 5000 SR. Residence of most participants (78%) was urban.

Table (2) shows that regular exercise was practiced by 19.3% of participants, while 8.4% were smokers.

Table (3) and Figure (1) show that about two-thirds of participants were hypertensive (64%), or diabetic (63.2%), while 49.6% had musculoskeletal diseases, about one third had visual problems (38.8%), eye diseases (34.8%), or dyslipidemia (33.6%), while almost one-fourth had heart disease (23.2%) or urinary problems (21%). Almost one-fifth of participants had kidney disease (19%) or hearing problems (18.5%). Moreover, 7.2% had stroke and 4% had cancer.

Table (4) and Figure (2) show that the mean overall percent score for WHOQOL was  $66.4 \pm 11.4\%$ , while the lowest mean percent score was for their physical health ( $64.5 \pm 11.4\%$ ), while that for psychological domain was  $66.2 \pm 11.5\%$ , that for social relationships was  $68.1 \pm 17.7\%$ , and for environment was  $67.6 \pm 14.6\%$

Figure (3) shows that negative feelings were always felt by 4%, very often by 23%, and quite often by 45%.

Table (5) shows that participants' WHOQOL mean percent scores differed significantly according to their age group ( $p < 0.001$ ), being lowest among those aged 70+ years, their marital status ( $p < 0.001$ ), being lowest among single participants, their educational status ( $p < 0.001$ ), being lowest among illiterate participants, their occupational status ( $p = 0.001$ ), being lowest among unemployed participants, their monthly income ( $p < 0.001$ ), being lowest among participants with lower income, and their residence ( $p = 0.004$ ), being lower among rural residents. However, participants' WHOQOL mean percent scores did not differ significantly according to their gender or nationality.

Table (6) shows that participants' WHOQOL mean percent scores differed significantly according to regular practice of exercise ( $p < 0.001$ ), being lower among those who do not practice regular exercise. However, participants' WHOQOL mean percent scores did not differ significantly according to their smoking status.

Table (7) shows that regarding the physical domain, participants' QOL differed significantly according to their age group ( $p < 0.001$ ), being lowest among those aged 70+ years, their nationality ( $p = 0.005$ ), being lower among Saudi participants, their marital status ( $p = 0.001$ ), being lowest among single participants, their educational status ( $p < 0.001$ ), being lowest among illiterate participants, differed significantly according to their occupational status ( $p < 0.001$ ), being lowest among unemployed participants, and according to their monthly income ( $p = 0.036$ ), being lowest among participants with lower income.

Regarding the psychological domain, participants' QOL differed significantly according to their age group ( $p < 0.001$ ), being lowest among those aged 70+ years, their nationality ( $p < 0.001$ ), being lower among Saudi participants, their marital status ( $p = 0.001$ ), being lowest among divorced participants, their educational status ( $p < 0.001$ ), being lowest among illiterate participants, differed significantly according to their occupational status ( $p = 0.004$ ), being lowest among unemployed participants, their monthly income ( $p = 0.001$ ), being lowest among participants with lower income, and according to their residence ( $p = 0.037$ ), being lower among rural residents.

Regarding the social domain, participants' QOL differed significantly according to their age group ( $p < 0.001$ ), being lowest among those aged 70+ years, their marital status ( $p = 0.005$ ), being lowest among divorced participants, their educational status ( $p < 0.001$ ), being lowest among illiterate participants, differed significantly according to their occupational status ( $p = 0.011$ ), being lowest among retired participants, their monthly income ( $p = 0.059$ ), being lowest among participants with lower income, and according to their residence ( $p = 0.022$ ), being lower among rural residents.

Participants' QOL differed significantly according to their age group ( $p<0.001$ ), being lowest among those aged 70+ years, their marital status ( $p<0.001$ ), being lowest among single participants, their educational status ( $p<0.001$ ), being lowest among illiterate participants, differed significantly according to their occupational status ( $p=0.009$ ), being lowest among unemployed participants, their monthly income ( $p<0.001$ ), being lowest among participants with lower income, and according to their residence ( $p=0.001$ ), being lower among rural residents.

Table (8) shows that regarding the physical, psychological and environment domains, participants' QOL differed significantly according to their regular practice of exercise ( $p<0.001$  for all), being lower among those who do not practice regular exercise. Regarding their social domain, participants' QOL differed significantly according to their regular practice of exercise ( $p<0.001$ ), being lower among those who do not practice regular exercise, and according to their smoking status ( $p=0.046$ ), being lowest among current smokers.

**Table 1: Personal characteristics of elderly participants (n=405)**

Personal characteristics	No.	%
<b>Gender</b>		
• Male	216	53.3
• Female	189	46.7
<b>Age groups</b>		
• <70 years	266	65.7
• 70-80 years	101	24.9
• >80 years	38	9.4
<b>Nationality</b>		
• Saudi	362	89.4
• Non-Saudi	43	10.6
<b>Marital status</b>		
• Married	276	68.1
• Single	5	1.2
• Widow	97	24.0
• Divorced	27	6.7
<b>Educational status</b>		
• Illiterate	146	36.0
• Primary	87	21.5
• Intermediate	48	11.9
• Secondary	60	14.8
• University	64	15.8
<b>Occupational status</b>		
• Unemployed	77	19.0
• Retired	172	42.5
• Housewife	88	21.7
• Private business	15	3.7
• Full time	29	7.2
• Part time	24	5.9
<b>Monthly income (SR)</b>		
• 15,000+	47	11.6
• 10,000-14,999	68	16.8
• 5,000-9,999	96	23.7
• <5,000	194	47.9
<b>Residence</b>		
• Rural	89	22.0
• Urban	316	78.0

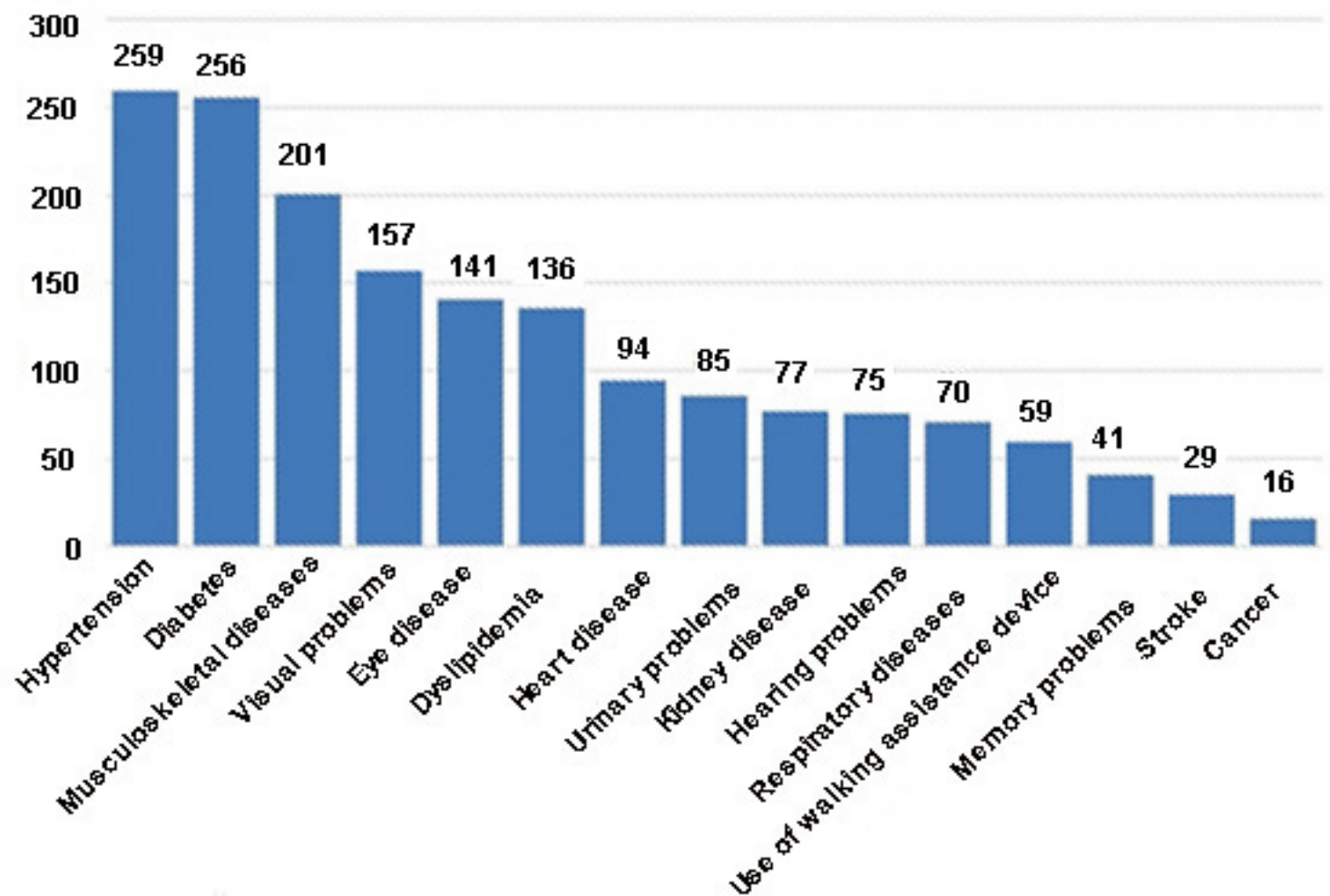
**Table 2: Life style habits of elderly participants (n=405)**

Life style habits	No.	%
Regular practice of exercise	78	19.3
Smoking status		
• Current smoker	34	8.4
• Ex-smoker	65	16.0
• Non-smoker	306	75.6

**Table 3: Prevalence of different morbidities among participants**

Morbidities	No.	%
Hypertension	259	64.0
Diabetes	256	63.2
Musculoskeletal diseases	201	49.6
Visual problems	157	38.8
Eye disease	141	34.8
Dyslipidemia	136	33.6
Heart disease	94	23.2
Urinary problems	85	21.0
Kidney disease	77	19.0
Hearing problems	75	18.5
Respiratory diseases	70	17.3
Use of walking assistance device	59	14.6
Memory problems	41	10.1
Stroke	29	7.2
Cancer	16	4.0

**Figure 1: Associated comorbidities**



**Table 4: Participants' WHOQOL domain mean percent scores**

Domains	Mean	SD
Physical Health	64.5	11.4
Psychological	66.2	11.5
Social Relationships	68.1	17.7
Environment	67.6	14.6
Overall	66.4	11.4

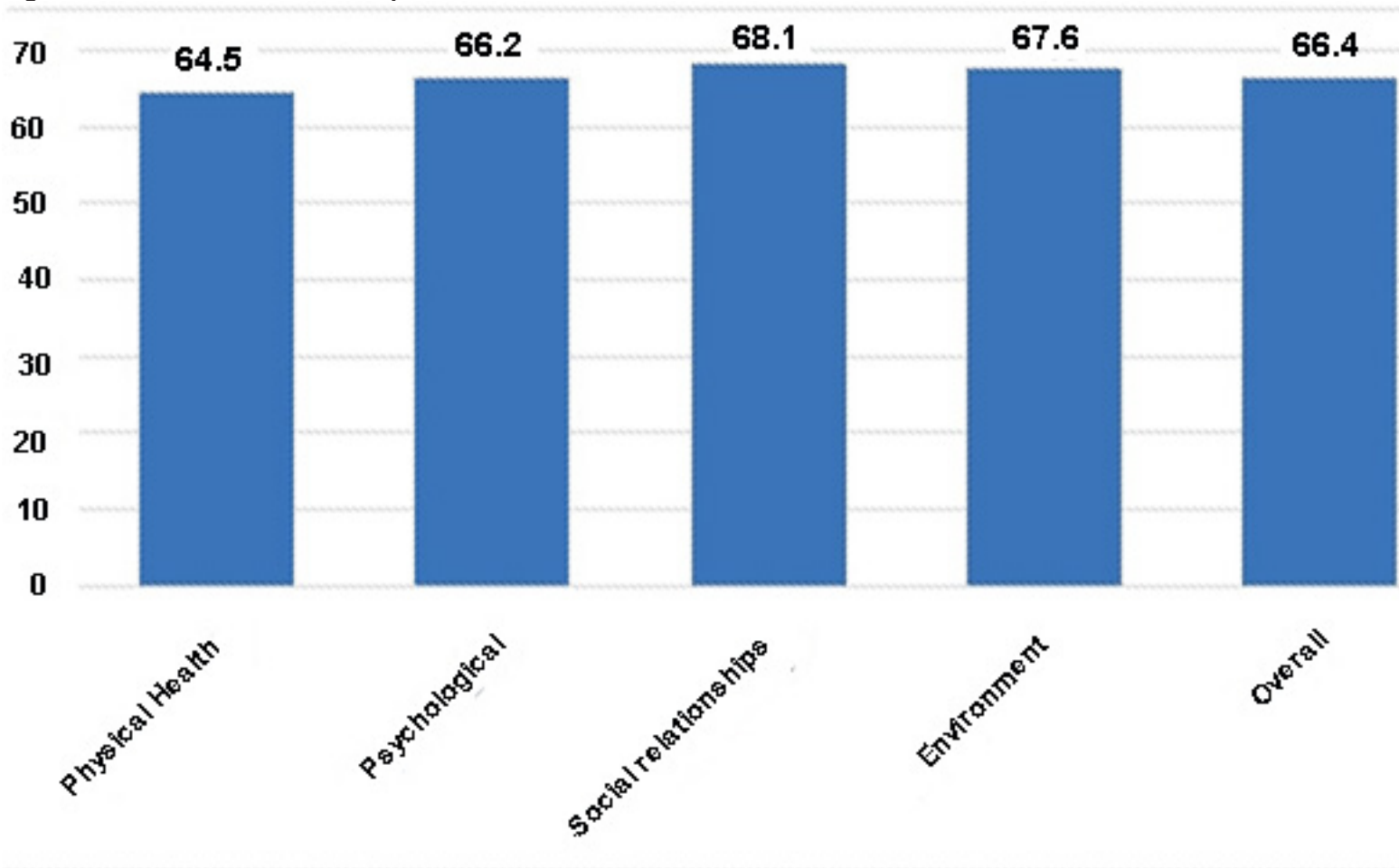
**Figure 2: WHOQOL domain mean percent scores**

Figure 3: How often does the elderly participant have negative feelings

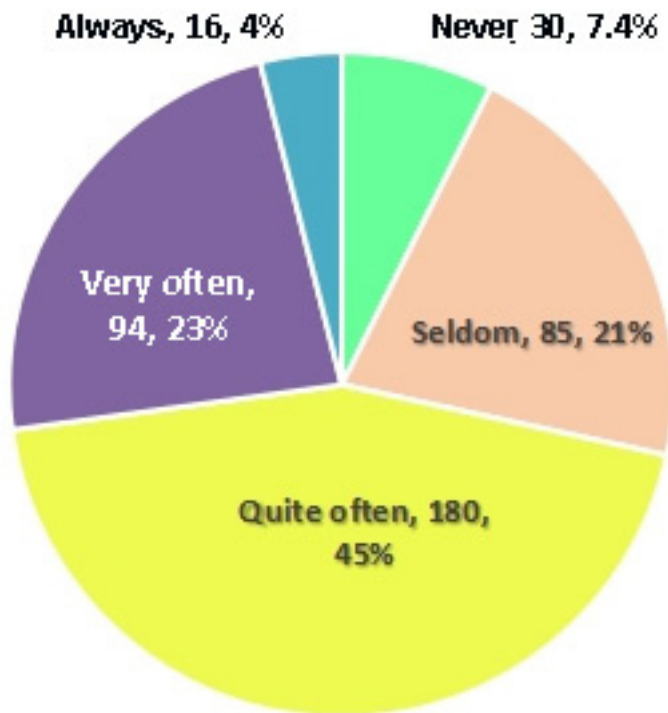


Table 5: Participants' overall WHOQOL mean percent scores according to their personal characteristics

Personal characteristics	No.	Mean	SD	P-value
Gender				
• Male	216	66.5	11.6	
• Female	189	66.3	11.1	0.895
Age groups				
• <70 years	266	69.0	11.1	
• 70-80 years	101	61.2	10.1	
• >80 years	38	62.1	10.4	<0.001†
Nationality				
• Saudi	362	66.1	11.5	
• Non-Saudi	43	69.4	9.8	0.068
Marital status				
• Married	276	68.3	11.2	
• Single	5	59.2	7.7	
• Widow	97	62.4	10.4	
• Divorced	27	62.5	12.2	<0.001†
Educational status				
• Illiterate	146	62.1	9.9	
• Primary	87	67.9	11.8	
• Intermediate	48	70.6	10.9	
• Secondary	60	65.7	12.1	
• University	64	71.7	9.8	<0.001†
Occupational status				
• Unemployed	77	62.9	11.6	
• Retired	172	66.1	11.3	
• Housewife	88	66.7	10.7	
• Private business	15	68.3	12.6	
• Full time	29	73.4	9.3	
• Part time	24	69.3	11.4	0.001†
Family monthly income (SR)				
• 15,000+	47	73.2	10.7	
• 10,000-14,999	68	69.1	12.2	
• 5,000-9,999	96	66.1	11.1	
• <5,000	194	64.0	10.5	<0.001†
Residence				
• Rural	89	63.4	10.9	
• Urban	316	67.3	11.4	0.004†

Table 6: Participants' overall WHOQOL mean percent scores according to their life style habits

Life style habits	No.	Mean	SD	P-value
Regular practice of exercise				
• No	327	64.7	11.0	
• Yes	78	73.4	9.9	<0.001†
Smoking status				
• Smoker	34	65.3	12.2	
• Ex-smoker	65	64.3	11.2	
• Non-smoker	306	67.0	11.3	0.180



Table 7: Participants' WHOQOL domain mean percent scores according to their personal characteristics

Personal Characteristics	No.	Physical		Psychological		Social		Environment	
		Mean	SD	Mean	SD	Mean	SD	Mean	SD
<b>Gender</b>									
• Male	216	64.8	10.9	66.7	12.0	66.1	17.4	67.9	15.0
• Female	189	64.2	12.0	65.6	11.3	70.3	17.8	67.3	14.1
• P-value		0.581		0.355		0.017†		0.641	
<b>Age groups</b>									
• <70 years	266	66.8	11.3	68.6	11.3	71.9	16.9	70.3	13.8
• 70-80 years	101	60.1	10.3	61.6	10.6	60.3	17.1	62.2	14.1
• >80 years	38	60.7	10.9	61.6	10.1	62.3	16.6	63.6	16.6
• P-value		<0.001†		<0.001†		<0.001†		<0.001†	
<b>Nationality</b>									
• Saudi	362	64.0	11.4	65.4	11.4	67.5	17.8	67.8	14.6
• Non-Saudi	43	69.1	10.5	72.7	9.5	72.7	16.1	65.9	14.2
• P-value		0.005†		P<0.001†		0.069		0.422	
<b>Marital status</b>									
• Married	276	65.9	11.0	68.0	11.1	69.9	17.5	70.1	14.1
• Single	5	66.3	13.6	64.0	15.2	49.3	16.1	53.0	3.3
• Widow	97	60.5	11.3	62.3	10.4	65.2	16.7	63.1	14.5
• Divorced	27	64.6	12.9	62.0	13.8	63.5	19.9	60.8	13.6
• P-value		0.001†		<0.001†		0.005†		<0.001†	
<b>Educational status</b>									
• Illiterate	146	60.2	10.2	62.5	10.3	63.6	16.8	63.0	14.1
• Primary	87	66.3	12.3	67.1	11.7	73.2	18.7	67.9	14.6
• Intermediate	48	68.2	10.1	68.7	10.5	71.4	17.5	74.0	14.8
• Secondary	60	64.3	12.3	65.9	12.8	64.1	17.3	67.3	13.4
• University	64	69.4	9.4	71.7	10.5	72.6	15.8	73.4	13.0
• P-value		<0.001†		<0.001†		<0.001†		<0.001†	
<b>Occupational status</b>									
• Unemployed	77	59.5	11.6	63.0	11.2	67.5	18.4	64.0	16.5
• Retired	172	64.3	10.8	66.1	11.3	65.0	17.0	68.1	14.5
• Housewife	88	65.7	11.6	65.9	11.4	70.3	17.4	66.9	12.7
• Private business	15	70.5	13.9	68.7	14.1	70.2	17.8	65.3	14.6
• Fulltime	29	70.2	9.8	72.5	9.4	76.3	17.4	75.7	10.8
• Parttime	24	67.1	8.9	68.9	11.0	72.5	18.2	70.4	16.1
• P-value		<0.001†		0.004†		0.011†		0.009†	
<b>Monthly income (SR)</b>									
• 15,000+	47	68.3	11.0	71.7	12.2	72.1	19.6	79.0	12.8
• 10,000-14,999	68	65.7	11.2	67.4	12.0	70.6	19.8	72.8	14.8
• 5,000-9,999	96	64.4	10.7	64.3	11.4	69.0	16.3	67.7	14.1
• <5,000	194	63.2	11.8	65.3	10.7	65.7	16.9	63.0	13.1
• P-value		0.036		0.001†		0.059		<0.001†	
<b>Residence</b>									
• Rural	89	63.0	11.3	64.0	11.3	64.3	18.4	63.0	14.5
• Urban	316	65.0	11.4	66.8	11.5	69.1	17.4	68.9	14.4
• P-value		0.142		0.037†		0.022†		0.001†	

† Statistically significant p&lt;0.05

**Table (8): Participants' WHOQOL domain mean percent scores according to their life style habits**

Life style habits	No.	Physical		Psychological		Social		Environment	
		Mean	SD	Mean	SD	Mean	SD	Mean	SD
Regular practice of exercise									
• No	327	62.8	11.2	64.5	11.1	66.3	17.6	66.0	14.4
• Yes	78	71.6	9.6	73.1	10.5	75.6	16.2	74.5	13.3
• P-value		<0.001†		<0.001†		<0.001†		<0.001†	
Smoking status									
• Current smoker	34	66.2	13.1	66.3	12.5	64.1	16.1	64.2	14.0
• Ex-smoker	65	62.6	9.5	64.7	11.1	64.5	16.1	65.4	15.4
• Non-smoker	306	64.7	11.6	66.5	11.4	69.3	18.1	68.5	14.4
• P-value		0.269		0.535		0.046†		0.107	

† Statistically significant  $p < 0.05$

## Discussion

Findings of the present study revealed that elderly overall QOL were significantly lower among those who are aged above 70 years, single, illiterate participants, unemployed, with low monthly income, rural residents, who do not practice regular exercise. All QOL domains were significantly affected by participants' sociodemographic characteristics, such as their age, marital status, education, occupation, income and residence. Moreover, negative feelings were always felt by 4%, very often by 23%, and quite often by 45%.

These findings are in accordance with those reported by several national and international studies. In Riyadh Al-Surimi et al. assessed the QOL among elderly patients at the Home Health Care program of the Ministry of National Guard Health Affairs. They reported that their overall QOL was significantly affected by their socio-demographic characteristics, e.g., marital status. Educational level was a significant determinant for physical health and environment domains, while age, was a significant determinant for psychological domain. Marital status was the only significant determinant for the social domain (19). Karlin et al. reported that the majority of elderly in Saudi Arabia were concerned regarding their physical functioning, financial resources, and their daily obligations (20).

In Turkey, Asilar and Bakar reported that elderly's education, income level, and social support were directly proportional to their quality of life, while cigarette smoking negatively affected their quality of life (21). In Slovakia, Soósová reported that the highest QOL was observed in the domains of social relationships, whereas the lowest QOL was observed in the domains of physical health, and social participation (10).

Our study revealed that the elderly's overall QOL is suboptimal, with a mean overall percent score of  $66.4 \pm 11.4\%$ , with the lowest mean percent score being for physical health ( $64.5 \pm 11.4\%$ ), while that for psychological domain was  $66.2 \pm 11.5\%$ ,  $68.1 \pm 17.7\%$  for social relationships, and  $67.6 \pm 14.6\%$  for environment.

Similarly, Cheraghi et al. who conducted a systematic review and meta-analysis to assess the QOL of the elderly population using WHO-QOL-BRIEF questionnaire reported that the pooled overall mean QOL percent score was  $60.1 \pm 4.6\%$ , that for physical health

was 55.13%, for environment was 51.8%, for psychological was 56.68% and for the social relationship was 57.82% (21). In India, Devraj and D'mello reported that the average overall QOL percent score among elderly was 74.3%. elderly's age, gender, marital status, education, job status, and socioeconomic status, were significant determinants of QOL of the participants (7).

These findings reflect the necessity to provide high attention and urgent care toward physical, social, environmental and mental health to elderly in order to enhance their QOL (23).

Our study showed that most elderly participants had various chronic diseases, such as hypertension, diabetes sensory problems, heart or renal diseases, in addition to stroke and cancer.

This is in agreement with that reported by Shah et al., in India, who found that common chronic health problems among elderly participants were joint pain, visual and eye problems, hypertension, and diabetes mellitus. Domains of quality of life were better among educated and married elderly people (12). In Brazil, Miranda et al. reported that the lowest QOL score was observed regarding the environmental domain. Advanced age, physical activity, diabetes, musculoskeletal diseases, and hypertension were significant determinants of QOL (24).

These findings indicate the importance of geriatric care which allows elderly people to receive the highly needed specialized care and takes into consideration their special needs, especially while facing several chronic conditions that require specialized care management. Moreover, elderly people should be encouraged to receive preventive care to enhance prolonged health and their independence.

## Conclusions

Based on findings of the present study, it can be concluded that elderly people attending PHC centers in Aseer Region have suboptimal overall QOL, with their physical health being the lowest manifestation. Several chronic diseases are highly prevalent among elderly people, such as hypertension, diabetes, sensory problems, musculoskeletal diseases, heart and urinary diseases. Therefore, it is necessary to provide high attention toward geriatric care in order to enhance their QOL.

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