

Article

Quality of Life for the Elderly in Taiwan

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Abstract: Taiwan will become a super-aged society in 2025, and people's concerns are no longer just prolonging life but how to improve the quality of life. We investigated the quality of life and its influencing factors on the elderly. 300 questionnaires were distributed and collected with an 85% recovery rate. A structured questionnaire with the WHO version of the Quality of Life was used for the participants. The questionnaire consisted of five major parts: demographic variables, physical quality, psychological quality, social relationship, and environmental safety. The data were analyzed by using descriptive statistics, t-tests, one-way ANOVA, and multiple regression analysis using SPSS22.0. The scores of the Quality of Life (QOL) were in order of physical quality, social relationship, environmental safety, and psychological quality. The education level, occupation, source of income, psychological quality, and environmental safety were important factors for overall quality of life with an explanatory power of 62.7%. The government must focus on leisure and health-related education to promote the quality of life of the old and combine the different resources for the elderly's social participation.

Keywords: Physical quality, Psychological quality, Social relationship, Environmental safety, QOL

1. Introduction

Internationally, when the population over the age of 65 reaches 7, 14, and 20% of the total population, the society is called the aging, the aged, and the super-aged society. Taiwan has become an aging society in 1993 and turned into an aged society in 2018. According to the National Development Council in 2020, Taiwan will enter a super-aged society in 2026, and the rate of aging is even faster than in Japan. By 2065, the proportion of the elderly population in Taiwan will exceed 40%. As the world gradually enters the aged society, the issues people are concerned about are no longer just prolonging life. The quality of life needs to be improved for the continuation of a meaningful, healthy, and happy life. In addition to promoting physical and mental health, people want to maintain a good quality of life. WHO defines the degree of Quality of Life (QOL) to measure how individuals feel about their goals, expectations, standards, and concerns, including a person's physical health, mental state, independence degree, social relationships, personal beliefs, and the environment. In 2002, the concept of active aging was proposed, and health, social participation, and safety are the main pillars to improve the quality of life after old age. Through the process and integration of life, the elderly can move towards a positive and meaningful life. The topics explored in this study are as follows.

- (1) What is the situation of the QOL for the elderly?
- (2) Is the QOL affected by demographic variables?
- (3) What are there correlations between the QOL of the elderly and their physical quality, psychological quality, social relationship, and environmental safety?
- (4) What are the predictors of the QOL in the elderly?

WHO defined QOL in 1997 as the degree of an individual's feeling in the cultural value system in which they live. This feeling is related to the individual's goals, expectations, standards, concerns, and other aspects. It contains a person's subjective feelings in six aspects: physical health, psychological state, degree of independence, social relations, personal beliefs, and the environment. The objective indicators of QOL are only indirect factors affecting life experience as objective conditions do not fully and correctly reflect people's feelings about their quality of life. Subjective indicators of quality of life are more emphasized personal subjective feelings which evaluate the quality of life from the perspective of the individual itself [1]. Belau [2] and Bullinger, Schmidt, and Petersen [3] pointed out that if an individual believes that he or she has reached a state of psychological, physical, and social well-being, he or she has a good quality of life. Farrans and Powers divided the quality of life into four aspects: "health and functioning,

socioeconomic, psychological/spiritual, and family” [4]. The quality of life is the satisfaction of six structural aspects: psychological state, physical health, independence, social relations, personal beliefs, and the environment. It is an individual’s self-assessment and feeling of life, not external objective conditions. To sum up, the quality of life contains different ideas on the level of personal life experience, maintenance of family functions, work attitude, and health attention due to the environment and background knowledge, which cause individuals to have different physiological, psychological, social relations, and environmental of different levels of satisfaction. Huang pointed out that the higher the emotional intelligence, the healthier the psychology and physiology, the better social relations and living environment, and the higher the satisfaction with the quality of life [5]. Szemik, Kowalska, and Kulik found in the quality of life, the social relationship score was highest; the environment was lowest, and indicated that age was important as a psychological quality factor [6]. Chiu showed that different health conditions had significant differences in the quality of life and found that marital status had significant differences in physical health, psychology, social care, and environment [7]. Therefore, it is required to explore the following.

- (1) Current situation of the QOL of the elderly in Taiwan;
- (2) Physical quality, social relationship, environmental safety, and psychological quality due to different demographic variables;
- (3) Importance of the QOL of the elderly in Taiwan related to physical quality, social relationships, environmental safety, and psychological quality;
- (4) Important factors for the QOL of the elderly in Taiwan.

With the above, important assumptions of this study were proposed as follows.

- Hypothesis 1: there are differences in the QOL of the elderly in Taiwan with different demographic variables.
- Hypothesis 2: the total quality of life of the elderly is related to physical quality, social relationships, environmental safety, and psychological quality.
- Hypothesis 3, physical quality, social relationship, environmental safety, and psychological quality are the predictors of the importance of QOL.

2. Materials and Methods

We adopted a cross-sectional questionnaire survey method and took Taiwanese people as the research object. The target group met the following selection criteria.

- (1) Age over 50;
- (2) With clear consciousness, participants could communicate in Mandarin and Taiwanese;
- (3) They agreed to answer the questions. During the survey, they could continue to answer or stop answering at any time.

The questionnaires were distributed at the activity centers for the elderly in various regions of Taiwan. Considering the age and education level of the elderly, they were helped to fill out the questionnaires to reduce missing values. It took about 10–15 minutes to complete the questionnaire. The survey was conducted from 2021/3/15 to 2021/4/31. The QOL questionnaire in this study was taken from Taiwan’s simplified version of the World Health Organization Quality of Life Questionnaire (WHOQOL-BREF) [8] with permission. The questionnaire included questions about physical quality, psychological quality, social relationships, environmental safety, and overall quality of life. The 5-point Likert scale was used to measure the level of QOL, and the higher the score, the better the quality of life. The questionnaire was completed with the consent of the participants. 300 questionnaires were distributed using “purposive sampling”, and the effective questionnaire recovery rate was 85%. To test whether the results of the questionnaire were consistent and stable, we conducted an internal consistency reliability analysis and tested the reliability QOL of the life scale. The overall internal consistency using Cronbach’s α was 0.937, and the Cronbach’s α of each factor ranged from 0.770 to 0.834. After the questionnaire data were collected, statistical analysis was carried out with SPSS 22.0. The statistical methods included descriptive statistical analysis, t-tests, one-way ANOVA, Pearson correlation analysis, and multiple regression.

3. Results and Discussion

3.1. Descriptive Statistics of Quality of Life

The mean of the QOL factors was in the order of physical quality (mean = 3.49, standard deviation (SD) = 0.616), social relationship (mean = 3.42, SD = 0.614), environmental safety (mean = 3.37, SD = 0.580), and psychological quality (mean = 3.26, SD = 0.633). The results indicated that the respondents felt they had a relatively strong quality of life in physical quality. It was slightly different from the WHO Taiwan Concise Quality of Life Questionnaire in descending order: physical quality, social relationship, psychological quality, and environmental safety. The participants for the WHO survey were over 18 years old, while

those in this study were over 50 years old. However, the highest scores were found in the physical quality. No matter what age group, physical quality was most important [9].

Questions with higher scores were “I usually get the food I want.” (mean = 3.77, SD = 0.805), “I am satisfied with the convenience of health care services.” (mean = 3.62, SD = 0.752), “I am satisfied with the transportation.” (mean = 3.59, SD = 0.824), and “I have good mobility.” (mean = 3.56, SD = 0.903). Questions with lower average scores were “I enjoy life.” (mean = 2.93, SD = 0.990), “I have enough money to meet my living needs.” (mean = 3.07, SD = 0.989), and “I can participate in leisure activities.” (mean = 3.09, SD = 1.038).

3.2. t-Tests and ANOVA

We used t-test and ANOVA analysis to explore whether there are differences in demographics to the four dimensions of quality of life. The t-test analysis was carried out on the genders in the quality of life of the elderly, which was the same as the findings in Ref. [10]. ANOVA analysis was used on age, source of income, number of children, educational level, marital status, occupation, conscious health status, and perceived well-being to QOL. Gender and age showed no significant difference in QOL., which was the same as the findings in Ref. [10]. de Belvis et al. [11] found that women’s mental health and physical health were significantly higher than men’s, but marital status, education level, occupation, number of children, source of income, conscious of health and perceived well-being of demographic variables with significant differences in QOL ($p < 0.05$). This finding was the same as that in Ref. [6]. The difference was due to the sample size and research objects. The post-hoc test analysis was used to understand the difference. According to Cheff’s method, the following was found (Tables 1 and 2).

- (1) Married people had a better quality of life in physical quality ($p = 0.034$) and social relationships ($p = 0.033$), which was the same in Refs. [7] and [12].
- (2) People with high education levels had a better QOL in physical quality ($p = 0.0000$), psychological quality ($p = 0.003$), social relationships ($p = 0.002$), and environment ($p = 0.000$). Graduates from universities or higher education had higher levels than those from junior high school, which was the same in Ref. [13]. The participants with higher education levels paid more attention to quality of life. Liu [14] found that different levels of education had no significant difference in QOL.
- (3) Participants with different occupations showed significant differences in physical quality ($p = 0.019$) and environment ($p = 0.009$). According to Scheff’s method, self-employed people showed higher levels of physical quality, and civil servants had higher levels than industry workers and the self-employed in environmental safety.
- (4) Those with no children had higher levels than those with multiple children in environmental safety.
- (5) In the “source of income”, retirees or participants with higher salaries had higher levels and others in social relationships, which was different from the results in Ref. [14].
- (6) Those who had better “consciousness of health” had higher levels of physical quality, psychological quality, social relationship, and environmental safety ($p < 0.000$).
- (7) There were significant differences in physical quality, psychological quality, social relationship, and environmental safety ($p < 0.000$) between participants with wealth and those with no wealth.

Table 1. T/ANOVA test of quality of life dimensions of physical quality and psychological quality.

		Physical Quality			Psychological Quality		
		Mean	<i>p</i>	Scheffé	Mean	<i>p</i>	Scheffé
Gender	a female	3.49	0.777		3.26	0.692	
	b male	3.51			3.29		
Age	a 50–54	3.57	0.261		3.31	0.621	
	b 55–59	3.45			3.26		
	c 60–64	3.36			3.17		
	d ≥65	3.52			3.25		
		3.36					
Marital status	a single	3.63	0.034*	b > c	3.37	0.230	
	b married	3.53		3.28			
	c others	3.29		3.13			

Table 1. Cont.

		Physical Quality			Psychological Quality		
		Mean	<i>p</i>	Scheffé	Mean	<i>p</i>	Scheffé
Education level	a graduate	3.98	0.000***	a > d	3.69	0.003**	b > d
	b university	3.68			3.43		
	c high school	3.50			3.27		
	d junior	3.29			3.08		
Occupation	a civil servants	3.68	0.019*	c > d	3.53	0.055	
	b industry	3.43			3.15		
	c business	3.71			3.45		
	d self-employed	3.33			3.17		
	e service industry	3.61			3.35		
	f others	3.40			3.13		
Number of children	a 0	3.61	0.594		3.35	0.337	
	b 1	3.40			3.14		
	c 2	3.52			3.33		
	d ≥ 3	3.48			3.22		
Source of income	a salary	3.50	0.097		3.28	0.241	
	b child support	3.42			3.16		
	c pension	3.76			3.45		
	d others	3.35			3.13		
Conscious of health	a very good	4.00	0.000***	a > b > c > d	3.73	0.000***	a,b > c > d
	b good	3.71			3.51		
	c ordinary	3.24			2.99		
	d poor	2.43			2.19		
Perceived well-being	a very good	3.94	0.000***	a > b > c > d	3.71	0.000***	a > b > c > d
	b good	3.65			3.45		
	c ordinary	3.18			2.91		
	d poor	2.84			2.53		

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Table 2. T/ANOVA test of quality of life dimensions of social relationship and environmental safety.

		Social Relationship			Environmental Safety		
		Mean	<i>p</i>	Scheffé	Mean	<i>p</i>	Scheffé
Gender	a female	3.41	0.601		3.35	0.402	
	b male	3.45			3.42		
Age	a 50–54	3.43	0.453		3.44	0.166	
		3.44					
	b 55–59	3.36			3.39		
		3.52					
	c 60–64	3.30			3.21		
	d ≥ 65	3.52			3.37		
Marital status	a single	3.38	0.033*	b > c	3.66	0.037*	a > c
	b married	3.48			3.39		
	c others	3.20	2		3.22		

Table 2. Cont.

		Social Relationship			Environmental Safety		
		Mean	<i>p</i>	Scheffé	Mean	<i>p</i>	Scheffé
Education level	a graduate	3.75	0.002**	b > d	3.65	0.000***	b,c > d
	b university	3.59			3.56		
	c high school	3.47			3.43		
	d junior	3.21			3.14		
Occupation	a civil servants	3.70	0.113		3.88	0.009*	a > b,d
	b industry	3.33			3.29		
	c business	3.67			3.59		
	d self-employed	3.35			3.28		
	e service industry	3.40			3.41		
	f others	3.41			3.30		
Number of children	a 0	3.34	0.905		3.69	0.043*	a > d
	b 1	3.43			3.29		
	c 2	3.41			3.40		
	d ≥ 3	3.45			3.32		
Source of income	a salary	3.39	0.014*	c > a,d	3.38	0.946	
	b child support	3.46			3.26		
	c pension	3.82			3.62		
	d others	3.32			3.29		
Conscious of health	a very good	3.85	0.000***	a,b > c > d	3.88	0.000***	a > b > c > d
	b good	3.62			3.51		
	c ordinary	3.15			3.14		
	d poor	2.70			2.63		
Perceived well-being	a very good	3.86	0.000***	a > b > c > d	3.79	0.000***	a > b > c,d
	b good	3.56			3.49		
	c ordinary	3.12			3.10		
	d poor	2.69			2.86		

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

3.3. Correlation Analysis

The correlation coefficients of physical quality, psychological quality, social relationship, environmental safety, and overall quality of life reached a significant level ($p < 0.001$) with all positive, showing a positive correlation, and the four quality of life factors were moderately correlated with QOL ($r = 0.570$ to 0.691 , $p < 0.001$). The results are shown in Table 3.

Table 3. Correlation analysis between life qualities and QOL.

Variable	Physical Quality	Psychological Quality	Social Relationship	Environmental Safety
Total quality	0.000***(0.661) ¹	0.000***(0.691)	0.000***(0.570)	0.000***(0.655)

¹ p -value (r), *** $p < 0.001$.

3.4. Multiple Regression

In order to explore the impact factors of the demographic variables and the effect of quality of life on QOL, taking gender, age, marital status, education level, occupation, number of children, source of income, consciousness of health, perceived well-being as independent variables, and the importance of QOL as the dependent variable, the causal relationship was explored through multiple

regression. The results are shown in Table 4. In model 1, the consciousness of health and perceived well-being was the predictor of the “importance of QOL”. Its explanatory power was 43.5%. In model 2, physical quality, psychological quality, social relationship, and environmental safety were added. The education level, source of income, consciousness of health, and perceived well-being were the predictors of the “importance of QOL” with an explanatory power of 62.7%. Therefore, H1 “the elderly with different demographic variables have differences in QOL” was partially supported. H2 “the total quality of life of the elderly is related to physical quality, social relationships, environmental safety, and psychological quality” was supported. H3 “physical quality, social relationships, environmental safety, and psychological quality were predictors of the importance of quality of life” and was partially supported.

Table 4. Regression model of importance of QOL.

Independent Variable	Dependent Variable	Importance of QOL	
		Model 1 Beta Coefficients	Model 2 Beta Coefficients
Gender	male/control group (female)	-0.044	-0.026
	50~54	-0.024	-0.018
Age	55~59	-0.094	-0.132
	60~64/control group (≥65)	-0.048	-0.025
Marital status	single	0.295	0.400
	married/control group (others)	0.168	0.189
Marital status	graduate	-0.435	0.429*
	university	0.007	0.100
Education level	high school/control group (junior)	0.136	0.045
	salary	-0.108	-0.079
Education level	child support	-0.127	-0.270*
	pension/control group (others)	-0.014	-0.247
Number of children	1	-0.128	-0.110
	2	0.023	-0.003
Occupation	>3/control group (0)	-0.007	-0.078
	very good	1.242***	0.071*
Conscious of health	good	1.228***	0.003***
	ordinary/control group (poor)	0.775***	-0.122*
Perceive well-being	very good	0.557**	0.072
	good	0.348	0.260
	ordinary/control group (poor)	0.150	0.078
	Physical quality		0.072
	Psychological quality		0.260**
	Social relationship		0.078
	Environmental safety		0.300**
	R ² /Adj - R ²	0.435/0.382	0.627/0.574
	F/P	8.192/0.000	11.937/0.000

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

4. Conclusions

In order to improve the QOL of the elderly, the government and related industries must advocate and publicize the concept of “active aging” and enhance the health promotion of the elderly, social participation, and environmental safety through the course of life and integration. They must help the elderly have positive and meaningful QOL. Therefore, the government needs to organize diverse courses and clubs to meet the needs of the elderly so that they can have appropriate exercise and diet habits. The elderly must expand interpersonal relationships in relevant units. For example, the government cooperates with private enterprises to

promote the “Respect for the Elderly Caring Store” for the elderly to go out and be motivated. By participating in society and interacting with the crowd, they can regain their societal role and positioning. In addition, places and community learning stations for learning for the elderly need to be provided with the help of senior learning institutions to improve their physical and psychological quality. The government must plan relevant aging knowledge courses for all age groups to enhance their self-awareness and achieve self-affirmation.

Everyone experiences the process of birth, aging, illness, and death. Correct aging is necessary for the elderly to have rich memory, experience, and wisdom. Finding the meaning of life in the aging process will help the elderly develop independence, health, dignity, and self-realization in their later years, improve the quality of life in old age, and make life more colorful. As the sources of income are mostly salary and pensions, they need to promote financial management to prevent emergencies. The results of this study contribute to understanding the factors that influence the quality of life of the elderly and provide information for nursing and health professionals to intervene in the community of the elderly to enhance their quality of life.

Because of limited time, funds, and manpower, the questionnaires in this study were collected from the elderly in activity centers using an intentional sampling method, which caused sampling deviation and affected the results. Stratified systematic random sampling needs to be used to increase the number of samples to ensure the representativeness of data. We adopted a cross-sectional method to understand the quality of life in a specific period, which might not present the long-term QOL of the elderly in Taiwan. In the survey, it is necessary to include qualitative interviews to obtain information that quantitative data may not contain. With a voluntary self-administered questionnaire, subjective feelings can be reflected which may cause bias and cannot express the actual situation.

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