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Review Article

Quality of Life in Elderly Iranian Population Using the QOL-brief Questionnaire: A Systematic Review

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Abstract

Background: Due to the increase in the elderly population in different societies, their primary needs, physical and mental health, and quality of life, is important. This study aimed to estimate the overall mean score of the QOL based on the Qol-Brief questionnaire in the elderly population of Iran.

Methods: The international and national databases, including; Medline, Scopus, Science Direct, MagIran, and SID were searched up to Feb 2015. All studies, addressed the quality of life among the healthy Iranian elderly population using WHO-QOL-BRIEF questionnaire, were included. The random effect model was used for data analysis and the results were reported with a 95% confidence.

Results: Out of 2150 studies, seven studies involved 1366 elderly participants were included in the meta-analysis. The pooled mean score of total QOL was 60.1±4.6. The pooled mean score of quality of life for physical health was 55.13 [51.03, 59.22], for environmental was 51.80 [45.50, 58.10], for psychological was 56.68 [53.29, 60.08] and for the social relationship was 57.82 [55.79, 59.86]. The men had a better status and in two health domains, including; physical and psychological health.

Conclusion: The results of this study stress the necessity of attention to the quality of life in the domains of physical health (especially in women), and environmental health in the elderly population.

Keywords: Quality of life, Systematic review, Elderly

Introduction

Population ageing is a common phenomenon that occurs due to increased life expectancy, improvement of the health care services, and decreased mortality rate. This phenomenon is observed in nearly all countries throughout the world (1, 2). According to a report by WHO in 2013, the global elderly population (aged 60 yr and over) increased from 9.2% in 1990 to 11.7% in 2013 and will reach 21.1% in 2050 (3).

According to the results of the National Population and Housing Census in 2011, the proportion of the elderly population of Iran has been 8.19% (4). Due to the increase in the elderly population in different societies, it is important to consider their primary needs, physical and mental health, and improvement of the quality of life (QOL). According to the WHO definition, the QOL is the understanding people from their position in life in terms of culture, appraisal, goals, hope, standards, and preferences (5). Several different tools are available to measure the QOL such as the SF-36 questionnaire, WHO-QOL-Brief ques-

tionnaire, Lipad questionnaire, etc. (6-8). The WHO-QOL-Brief can assess the quality of life in a variety of societies and population groups (6). This questionnaire has been standardized in many countries, so we could able to compare the quality of life in different populations. On the other hand, the age structure is rapidly changing in Iran, so we need to compare the QOL status between the Iranian elderly population and other developing countries.

So far, limited and sporadic studies have been conducted to investigate the QOL in the Iranian elderly population (9-16) and their results are inconsistent. This meta-analysis aimed to estimate the overall mean score of the QOL based on the Qol-Brief questionnaire in the elderly population of Iran.

Methods

Instrument

The WHOQOL-BREF is a standard tool for assessing the quality of life based on four domains of physical health, psychological health, social relationships and environmental health. The physical health domain includes energy and fatigue, pain and discomfort, sleep and rest. The psychological domain includes bodily image and appearance, negative feelings, positive feelings, self-esteem, thinking, learning, memory and concentration, religion /spirituality/personal beliefs. The social domain involves personal relationships, social support and sexual activity, and finally the environmental domain includes the financial resources, freedom, physical safety and security, health and social care, accessibility and quality of home environment, opportunities for acquiring new information and skills participation and opportunities for recreation/leisure, environment (pollution/noise/climate) and transport (6).

Searching

International and national databases were searched using following key words: "quality of life", "aging", "aged", "elderly" and "Iran". International databases including Medline, Scopus and Science Direct were searched up to Feb 2015. National databases including Science Information Database, MagIran, IranMedex and Irandoc were searched up to Feb 2015. Moreover, to obtain additional studies, the reference lists of all selected studies were scanned manually, and the authors of included studies were contacted.

Criteria for including studies

All cross-sectional studies addressed the QOL in the healthy Iranian elderly population using the WHO-QOL-BRIEF questionnaire were included irrespective of the time of the study and the language of the publication. The Iranian elderly population was considered the study population regardless of sex and age. The main outcome of interest was the mean scores of the domains of the quality of life.

Data extraction and management

Two authors (PCh. and ADI) screened the title and abstract of the retrieved citations independently; in the next stage, they reviewed the full text of the selected studies to extract the studies that met the inclusion criteria for this meta-analysis. Any disagreement between authors in the selection of the studies was resolved by discussion and adjudication of a third author. In the case of missing data, we contacted the corresponding author of the study. Two authors (PCh, ADI) extracted the following variables for data analysis: the year of publication, location of the study (city), mean or median of age, gender, residence of participants, sample size, mean score of the QOL based on domains (physical health, psychological, social and environmental) and theirs standard deviation.

Assessment risk of bias

Seven selected items from the STROBE checklist (17) were used for evaluating the quality of the included studies. These items included the following; 1) presence of the key elements of the study design; 2) the inclusion and exclusion criteria; 3) the outcome, i.e., quality of life; 4) calculation of the sample size; 5) the setting of the study (location and date); 6) the precision of the estimates, i.e., standard deviation or confidence

interval and 7) the statistical methods for data analysis. Studies that satisfied all mentioned criteria were classified as high quality, studies that did not meet one item were classified as moderated quality, and studies that did not meet more than one item were classified as low quality.

Assessment of heterogeneity

Statistical heterogeneity was explored using the chi-squared test at a significance level of 10%. I^2 was used for quantifying the heterogeneity across the included studies (18). The variance between the studies was estimated using tau-squared statistics (19).

Estimation of summary measures

A meta-analysis was performed to estimate the pooled mean score of the QOL among the elderly population. The pooled estimation of the QOL was reported for each domain of the WHO-QOL-BREF questionnaire separately. The inverse variance (IV) method was used for calculating the pooled estimations. Sub-group analysis was accomplished according to the age group, sex, residence, and the quality of the included studies. Both Review Manager 5 (20) and Stata 11 (StataCorp, College Station, TX, USA) were employed for data analysis. The random effect model (21) was used for data analysis and the results were reported with a 95% confidence interval.

Results

Description of studies

We retrieved 2150 records; 470 references were excluded because of duplication, 1000 reference were excluded because they were not related to the objective of the review, and 653 references were excluded because they were not eligible to be included in the meta-analysis after checking the full text. Finally, seven articles (10, 11, 13, 15, 22-24) remained for meta-analysis (Fig. 1 and Table 1), including 1366 Iranian elderly participants with a mean age of 70.8±2.3 yr.

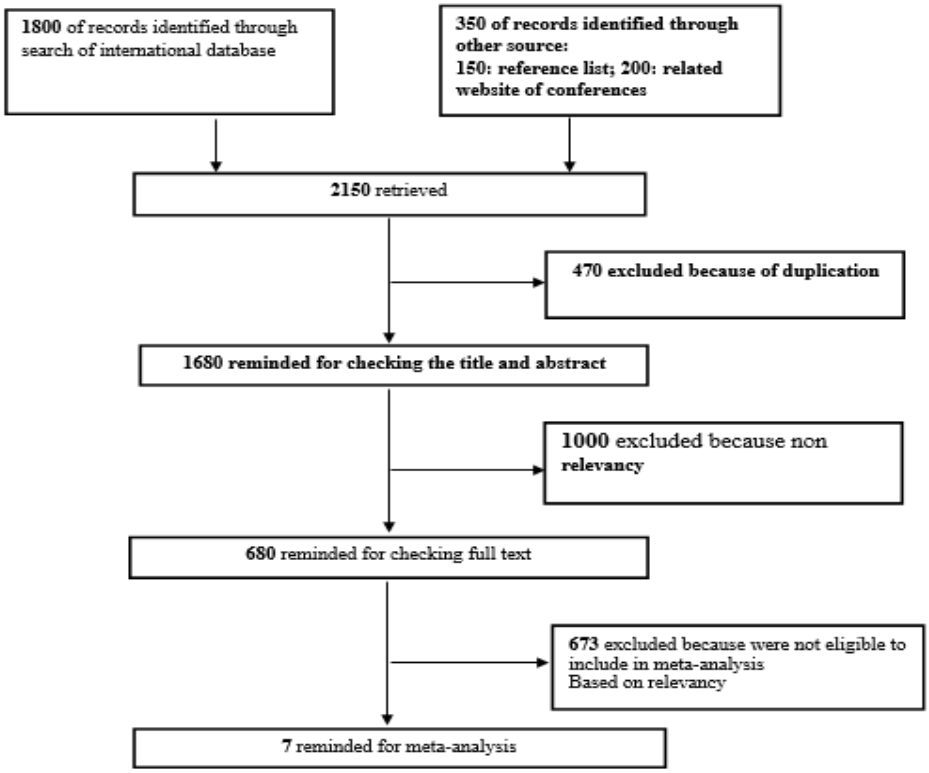

Fig. 1: Flow chart of study identification process

Table 1: Characteristic of included studies in meta-analysis

Author	Year	Province	Sex	Resident	Sample Size	Habitat	Age
Ahangari	2007	Tehran	Male/Female	Nursing Home	523	City	68.08
Panaghi	2010	Tehran	Male/Female	Nursing Home/ Home	243	City	71.41
Hasani	2011	Tehran	Male/Female	Nursing Home	130	City/Rural	73.19
Khoosheh Mehri	2005	Alborz	Male/Female	Nursing Home	62	City	Not reported
Amirhosseini	2015	Tehran	Male/Female	Nursing Home/ Home	408	City/Rural	Not reported
Payahoo	2013	Tabriz	Male/Female	Home	184	City	69.4
Zaeri	2014	Tehran	Male/Female	Home	287	City	67.3

Quality assessment

Eighty percent of the studies (five studies) referred to all (seven) STROBE items while others (two studies; 20%) referred to six STROBE items. No study referred to five items or less.

Heterogeneity assessment

The heterogeneity of the studies was assessed using the Chi^2 test and the I^2 statistics. The results of Chi^2 test and I^2 for all domains of the WHO QOL-Brief were as follows: physical health (I^2 =99% and Chi^2=1044.10), psychological (I^2 =96% and Chi^2 =224.16), environmental (I^2 =99% and Chi^2 =1044.10), social (I^2 =88% and Chi^2 =76.92), and overall (I^2=100% and Chi^2 =1436.1) (Fig. 2).

Publication Bias: We assessed publication bias using the funnel plot as well as Begg's and Egger's tests. The results of Begg's and Egger's tests for physical health (*P*=0.325), psychological health (*P*=0.106) and social relationship (P=0.295) confirmed the absence of publication bias and for environmental (*P*=0.024) confirmed presence of publication bias.

The Mean Score of the Quality of life

The pooled mean score of the total QOL was 60.1±4.6. The pooled mean score of the quality of life was 55.13 [51.03, 59.22] for physical health, 51.80 [45.50, 58.10] for environmental health, 56.68 [53.29, 60.08] for psychological health, and 57.82 [55.79, 59.86] for social relationships. Therefore, the maximum and minimum-pooled mean scores were obtained in social relationship and environmental domains, respectively.

Subgroup Analysis

We developed a sub-group analysis according to available variables (gender and the quality of reporting the studies). Men had a better status and a higher mean score in two health domains including physical health (62.6 vs. 49.7, *P*<0.001) and psychological health (62.4 vs. 55.4, *P* <0.001) as well as the total mean score of the quality of life (61.4 vs. 58.4, *P*<0.001). In addition, these mean differences were statistically significant. Women had a slightly better status than men in the two remaining health domains including social relationships (59.1 vs. 58.5, *P*=0.82) and the environmental domain (52.2 vs. 51.0, *P*=0.85). However, the mean differences were not statistically significant.

Studies with more risk of bias had reported a higher mean scores in comparison to studies with low risk of bias (including; in the psychological (61.55 vs. 55.29, *P*<0.001), in the environmental health (60.70 vs. 49.45, *P*<0.001), in social relationship (60.65 vs. 56.94, *P*=0.77)). Although both types of studies (low risk and high risk of bias) had equal status (58.33 vs. 58.34, *P*=0.99) (Table 2).

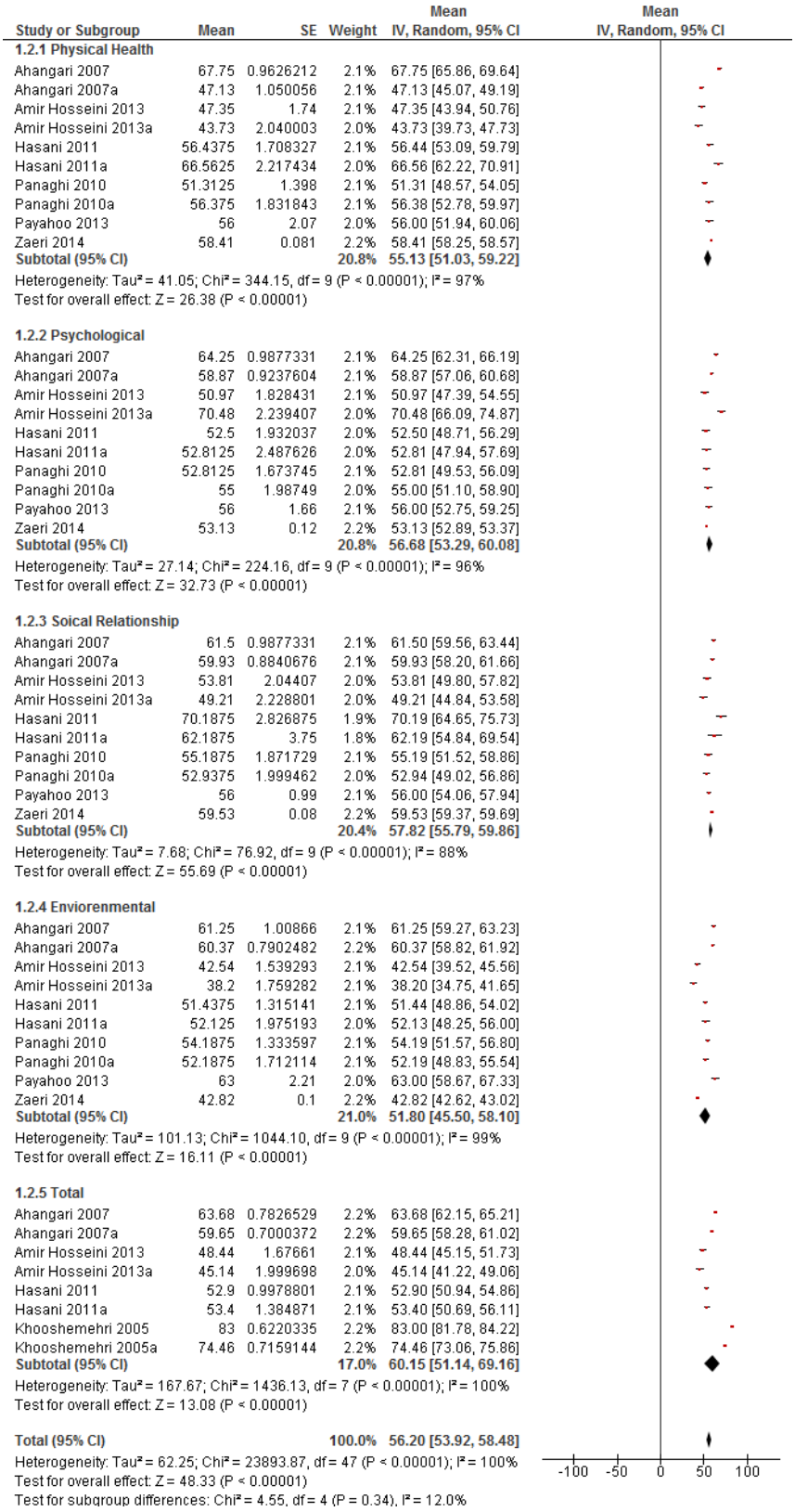

Fig. 2: Forest plot of pooled mean score of quality of life in four domains

Table 2: Subgroup analysis of mean score of quality of life and four domains according some factor affecting on quality of life

Domains	Variables	Categories	N* (%)	Pooled M	95% CI	I^2	*P*-value**
Physical Health	Gender	Male	4 (0.50)	62.59	[61.13, 64.04]	0.98	<0.001
		Female	4 (0.50)	49.71	[48.36, 51.07]	0.88	
	Quality of Study	Low Risk Bias	4 (0.40)	58.34	[58.18, 58.50]	0.95	0.99
		Moderate Risk of Bias	6 (0.60)	58.33	[56.94, 59.72]	0.100	
Psychological	Gender	Male	4 (0.50)	62.45	[60.92, 63.98]	0.93	<0.001
		Female	4 (0.50)	55.90	[54.54, 57.25]	0.98	
	Quality of Study	Low Risk Bias	8 (0.80)	55.29	[52.28, 58.30]	0.89	<0.001
		Moderate Risk of Bias	2 (0.20)	61.55	[56.28, 66.82]	0.94	
Social Relationship	Gender	Male	4 (0.50)	58.55	[56.97, 60.12]	0.92	0.82
		Female	4 (0.50)	59.07	[57.67, 60.48]	0.69	
	Quality of Study	Low Risk Bias	8 (0.80)	56.97	[53.94, 60.01]	0.90	0.77
		Moderate Risk of Bias	2 (0.20)	60.65	[59.12, 62.19]	0.29	
Environmental	Gender	Male	4 (0.50)	50.99	[40.81, 61.17]	0.98	0.85
		Female	4 (0.50)	52.20	[44.79, 59.61]	0.97	
	Quality of Study	Low Risk Bias	8 (0.80)	49.45	[44.59, 54.32]	0.97	<0.001
		Moderate Risk of Bias	2 (0.20)	60.70	[59.49, 61.92]	0.00	
Total Mean of Quality of Life	Gender	Male	4 (0.50)	61.37	[45.61, 77.13]	0.97	0.30
		Female	4 (0.50)	58.92	[47.93, 69.90]	0.99	
	Quality of Study	Low Risk Bias	4 (0.50)	51.37	[50.03, 52.71]	0.83	<0.001
		Moderate Risk of Bias	4 (0.50)	71.32	[70.64, 72.01]	0.100	

*Number of Studies/ ** *P*-Value of Subgroup Difference

Discussion

The results of this study as the first meta-analysis on WHO-QOL-Brief revealed that the total mean score of the QOL among the Iranian elderly people was 60.1±4.6. In addition, the maximum and minimum-pooled mean score was obtained in the domains of social relationships and environmental health, respectively. The overall mean score of the QOL in the elderly population was less than the mean score of the QOL (76.95) in the general population of Iran (25). Moreover in our study, all mean scores were less than in comparison to Skevingto study (that included the information of 23 countries) (26), including; in physical health (54.6 vs. 63.7), in psychological health (57.3 vs. 63.1), in social relationship (57.9 vs. 63.7) and in environmental health (51.6 vs. 61.2).

Furthermore, another important result was that the elderly men had a markedly better QOL in the physical health domain (62.6 vs. 49.7). The difference was about 13 scores. The elderly men had a better status in the psychological domain (62.4 vs. 55.9). The total pooled mean score of the QOL in men was significantly more than women (61.4 vs. 58.9). This finding was concordant with the results of some studies that evaluated the QOL using the WHO-QOL-Brief questionnaire (10, 11, 15) and other tools (12, 14, 16, 27). The reason for the better QOL in men rather than women may be due to the better socioeconomic status and having the role of guardianship in the families in developing countries, and more communication and interaction in the community. In addition, the latter result was concordant with another study in Iran (9) showed female gender significantly associated with a lower quality of life. However, the male gender is associated with a higher level of education, higher socioeconomic status, and better job position in the Iranian elderly population, and these factors are associated with the better QOL among men.

In addition, the pooled mean score of the QOL in the physical health domain was more in men when compared with women. This finding was acceptable according to health statistics at the national level; for example, the prevalence of ob-

esity was 14.9% and 19% in men and women respectively, according to the results of the second round of Urban Heart Tehran Experience (28). The lower mean score of the QOL in women may be associated with less physical activity and higher prevalence of obesity in them.

Both genders had an equal status in the environmental domain of the QOL. This finding is similar to the results of a study (9) (in the adjusted and unadjusted analysis) as well as other studies (11, 15, 29) that suggest environmental factors have a negligible relationship with individual wellbeing.

We could not assess the association of demographic variables such as marital status, level of education, employment status, income, and living status (having a personal house or living in the nursing home) with the overall QOL because the included primary studies in this meta-analysis did not evaluate the association of these factors with the QOL. Therefore, we recommend that further primary studies should be conducted to assess the potential predictors of the QOL in the Iranian elderly population.

In this meta-analysis, the included studies were limited to three provinces of Iran (Tehran, Alborz and Tabriz). Eighty and twenty percent of the studies were conducted in Tehran and Alborz provinces, respectively. We did not find the similar studies in the elderly population in other provinces of Iran. The measurement and assessment of the QOL in the elderly population in different societies are necessary for decision making for the promotion of their health status and well-being. There appears to be a major gap in the quality of life research in other provinces of Iran.

We performed sub-group analysis based on the potential source of heterogeneity, but heterogeneity remained in sub-groups. The considerable heterogeneity in results of included studies may be related to different settings of the studies (such as different geographic regions, with different cultures and lifestyles) consequently, the QOL may be affected by these factors. However, we pooled the results of included studies using the random effect model in order to estimate the overall QOL, because of public health importance of QOL for the elderly population and health policy makers. If the results of meta-analysis were a guide for health decision-making, it is possible to pool the results of heterogeneous studies (30).

Conclusion

The results of this study stress the necessity of attention to the quality of life in the domains of physical health (especially in women), and environmental health in the elderly population.

Ethical considerations

Ethical issues (Including plagiarism, informed consent, misconduct, data fabrication and/or falsification, double publication and/or submission, redundancy, etc.) have been completely observed by the authors.

Acknowledgement

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