Elderly Health Journal 2024; 10(2): 97-103.
Shahid Sadoughi University of Medical Sciences, Yazd, Iran
Journal Website : http://ehj.ssu.ac.ir

Original Article

Health-Related Quality of Life and Gender Differences in Elderly People: a Cross-Sectional Study

Pegah Bahrami [1, 2], Ehsan Mosa Farkhani [2], Sima Nourbakhsh [3], Maryam Sarkhosh [3*]

1. School of Medicine, Mashhad University of Medical Sciences, Mashhad, Iran
2. Department of Epidemiology, Faculty of Health, Mashhad University of Medical Sciences, Mashhad, Iran
3. Department of Environmental Health Engineering, School of Health, Mashhad University of Medical Sciences, Mashhad, Iran

[*] **Corresponding Author:** Department of Environmental Health Engineering, School of Health, Mashhad University of Medical Sciences, Mashhad, Iran. **Tel:** +98 5131892001**, Email address**: SarkhoshM@mums.ac.ir

Article history
Received 30 Oct 2024
Accepted 11 Dec 2024

Citation: Bahrami P, Mosa Farkhani E, Nourbakhsh S, Sarkhosh M. Health-related quality of life and gender differences in elderly people: a cross-sectional study . Elderly Health Journal. 2024; 10(2): 97-103.

A B S T R A C T

Introduction: As the population is aging, concerns are raised regarding the quality of life of elderly people. Men and women tend to experience aging differently due to socioeconomic differences. Therefore, this study aims to investigate the state of health-related quality of life and its gender-related discrepancies in the elderly population in Mashhad, Iran.

Methods: This cross-sectional study was conducted on 200 elderly population in Mashhad, Iran. Following a multi-staged stratified sampling, participants were selected, and in order to complete the questionaries interviewed at their homes or the Health Center according to the participants' priorities using the RAND 36-Item Health Survey (RAND-36). The survey consists of 8 scales of physical functioning (PF), role limitations caused by physical health problems (RP), role limitations caused by emotional problems (RE), social functioning (SF), emotional well-being (EW), energy/fatigue (EF), pain (P), and general health (GH). Data were analyzed using Chi-Square test.

Results: Men exhibited significantly higher scores on PF (71.38 (± 24.13) vs 57.63 (± 24.75), p =0.00), SF (74.22 (± 17.99) vs 67.27 (± 18.61), p =0.01), and p (77.38 (± 23.76) vs 64.79 (± 27.77), p =0.00) dimensions compared to women. Post-hoc analyses revealed that the main factors influencing the differences were variations between ages (60-65) with (70-75) and over 80 regarding PF, ages (60-65) with over 80 in RP, and finally, the difference attributed to ages (60-65) with (65-70) in GH. The comparison between the states of employment revealed that the employed individuals ranked higher in all dimensions except pain.

Conclusion: This study provides an overall description of the state of the health-related quality of life of the elderly in Mashhad underscoring the differences that genders exhibit in each dimension which calls for a broader gender-based assessment of quality of life in this population in Mashhad and Iran.

Keywords: Aged, Quality of Life, Gender, Epidemiology, Health

Introduction

It is forecasted that in 2050 the number of people above 60 will outnumber the younger generation (1). As aging has become a global phenomenon, concerns have arisen regarding the aging quality. Increased lifespan may lead to a greater number of chronic diseases like cardiovascular and metabolic

[DOI: 10.18502/ehj.v10i2.17363]

diseases and cancer, the coexistence of several chronic diseases, a higher number of medications and inevitably their side effects and interactions, and overall longer years with disease morbidity, and frailty (2). Moreover, mild cognitive impairment, dementia, and mental health disorders, with depression being the most prevalent, are on the rise which extensively affects the overall quality of life (QoL) (2). Therefore, healthy aging is currently a major concern to the extent that 2021 to 2030 has been named the decade for healthy ageing by the United Nations (UN) (3). QoL is described by WHO as "An individual's perception of their position in life, in the context of the culture in which they live and concerning their goals, expectations, standards, and concerns" (4). Health-related quality of life (HRQoL), as a subsection of QoL holds significant importance in assessing elderly well-being concerning the individual's integrated perception of their state in physical and psychosocial domains (5).

Studies have shown that HRQoL attributed to the elderly people in Iran is rather inadequate (6, 7). Several factors have been attributed to how individuals in Iran may go through a healthy or poor QoL in their elderly. Living in nursing homes, lower economic strength, lower education, and the female gender have been among the conditions contributing to low HRQoL score (6, 8). Interestingly, the male gender is found to be positively correlated with QoL in the elderly in a city in north Iran, and men compared to females exhibited higher QoL scores in all dimensions (8). However, QoL is a multi-dimensional aspect that often integrates psychosocial, socio-economic, environmental, and religious conditions which is well explained by the difference seen in both overall scores and gender-based scores in various cities in Iran (7, 8). Therefore, sub-national studies are necessary to elucidate the state of QoL of the elderly in different cities. Here in, this study aims to evaluate the determinants of HRQoL of life in people over 60 in Mashhad, Iran.

Methods

Study design

This was a descriptive cross-sectional study conducted on the general elderly population in Mashhad, Iran in 2021.

Participants

Following the UN definition of elderly people, age 60 was set as the cut-off point (9). The study, however, did not include individuals with severe or end-stage diseases.

The sample size was calculated according to similar study conducted in Iran, in which the average QoL of an Iranian was 54.8 (± 22.62) (10). Therefore, with a confidence interval of 95% and 3% accuracy, a sample size of 220 participants was obtained.

Data collection

Following a multi-staged stratified sampling, Health Centers for all 5 districts of Mashhad City, Iran were included in the study, and 5 health centers from each district were randomly selected. Thereafter, by considering the population coverage of each center, specific sample sizes were attributed to each center. Subsequently, with the utilization of the Mashhad University's integrated health electronic database called SINA participants were selected through a Table of Random Numbers method from each stratum.

Procedure

The study protocol was explained to all participants. Individuals willing to participate in the project provided their signed consent. Finally, all participants were interviewed at their homes or the health center according to the participants' priorities.

Instruments

A derivative form of SF-36 questionnaire, a reliable and valid means of health measurement concentrating on physical and mental dimensions (11), called the RAND 36-Item Health Survey is a generic measure of health-related quality of life throughout the world (12). RAND-36's reliability has been approved and is found to be reliable in Iranian studies (13, 14). RAND 36-Item Health Survey was used as the assessment tool for HRQoL of the participants. The survey consists of 8 scales of physical functioning (PF, 10 questions), role limitations caused by physical health problems (RP, 4 questions), role limitations caused by emotional problems (RE, 3 questions), social functioning (SF, 2 questions), emotional wellbeing (EW, 5 questions), energy/fatigue (EF, 4 questions), pain (P, 2 questions), and a comprehensive general health scale that demonstrates the individual's perception on their health in the past 12 months (GH, 5 questions). The maximum score is 100.

Independent variables

Personal data about the participants consisted of their age, gender, employment status, and living conditions. Participants' ages were registered individually and categorized into age decadal scales. Employment status was defined as "Retired", "Un-Employed", and "Employed". The "Un-employed" category encompassed housewives and unemployed individuals with employment history who had not yet retired. Similarly, living conditions were classified into 3 groups "House owner", "Rental house", and "Living with children".

Statistical analysis

The study analysis was conducted using SPSS version 22. To provide a descriptive analysis of the data, mean and standard deviation were calculated. To obtain information on gender differences, employment status, and living conditions were

[DOI: 10.18502/ehj.v10i2.17363]

compared between men and women using the Chi-Square test. Subsequently, data distribution was assessed using the Kolmogorov-Smirnov test. Analyses of the HRQoL dimensions between men and women were conducted using Mann-Whitney tests for all dimensions except GH, for which the T-test was used. To compare employment status, the Kruskal-Wallis test was performed for PF, PW, and P, and One-way ANOVA was performed for the rest of the dimensions. Lastly, the Kruskal-Wallis test was employed for RP, EW, and P to determine the differences between living conditions. Post-hoc tests were conducted by SPSS software accordingly. A significance level of 0.05 was set for all the results.

Ethics considerations

Written informed consent was obtained from all participants. Ethical approval was obtained by the Ethics Committee of Mashhad University of Medical Sciences (IR.MUMS.FHMPM.REC.1401.011).

Results

Baseline and demographic characteristics

Overall, 200 elderly individuals above age 60 participated in the study, and all filled out the RAND 36-Item Health Survey thoroughly, hence no one was excluded from the study and no missing data was reported. The average age of the participants was 66.32 with the highest being 83. Most participants were women (110 compared to 90 males). Regarding the employment status of the individuals, 18 (9%) people were employed and the rest were either unemployed or retired. Moreover, among the 200 participating individuals 29 (14.5%) people were reported to live with their children whereas the remaining 171 people lived in their residencies (rental or house owner). (Table 1)

Table 1. Demographical characteristics of participants

Sociodemographic characteristics	Participants (n = 200) (mean, SD) / (n, %)
Age (years)	66.32 (± 5.03)
Gender	
Male	90 (45.00%)
Female	110 (55.00%)
Employment	
Retired	98 (49.00%)
Unemployed	84 (42.00%)
Employed	18 (9.00%)
Living conditions	
House owner	135 (67.50%)
In rental house	36 (18.00%)
Living with children	29 (14.5%)

Analysis and Comparison of HRQoL factors across Age, Gender, Employment, and Housing status

The overall descriptive characteristics of HRQoL dimensions, extracted from RAND-36 results, are exhibited in Table 2. Furthermore, differences between males and females, various age groups, employment status, and housing conditions are shown in Table 3.

Gender differences

Men exhibited higher scores on all HRQoL dimensions compared to women. The differences were found statistically significant in PF, SF, and P scores. The lowest average score in both men and women was seen in the E/F dimension), respectively. The highest scores however differed regarding the dimension between the two genders with women scoring highest in the SF dimension (67.27 ± 18.61) and men in the P dimension (77.38 ± 27.77).

Age differences

The only health dimension not exhibiting a significant difference between ages was the E/F score ($p = 0.37$). Subsequently, the post-hoc test revealed that the main factors influencing the differences were variations between ages 60-65 with 70-75 and over 80 regarding PF, ages 60-65 with over 80 in RP, and finally the difference attributed to ages 60-65 with 65-70 in GH.

Differences in employment status

The comparison between the states of employment revealed that the employed individuals ranked higher in all the HRQoL scores except P in which the retired participants obtained the highest mean. P and PF were the areas where the ANOVA test showed a statistically significant difference, mainly linked to the variances between unemployed and retired individuals.

Differences in living conditions

In contrast to the other groups, housing states demonstrated heterogeneity in the scores across different levels of the dimensions. No one housing group remained lowest or highest through the HRQoL dimensions. Statistically significant differences were observed in the RP, EW, and P. The post hoc test unveiled that the variations contributed to the disparities between house owners and individuals in rental houses in the RP, and P dimensions. Additionally, significant differences were also observed between house owners and those living with their children regarding the pain dimension with the latter having a higher average P score. Lastly, the difference in the EW dimension similarly contributed to the HRQoL variation between house owners and participants living with their children, however, in this dimension individuals who lived with their children scored lowest. (Table 4)

[DOI: 10.18502/ehj.v10i2.17363]

Table 2. Descriptive summary of the dimensions of quality of life among participants

Dimensions of quality of life	Min	Max	First quarter	Second quarter	Third quarter	Mean
PF	5	100	45	70	80	63.82
RP	0	100	25	50	100	59.37
RE	0	100	33.33	66.66	100	62.29
E/F	15	95	45	60	70	57.50
EW	12	100	52	68	76	64.30
SF	25	100	56.875	75	87.5	70.40
P	0	100	55	77.5	90	70.46
GH	20	100	50	60	70	60.62

PF; Physical functioning, RP; Role limitations caused by physical health problems, RE; role limitations caused by emotional health problems, E/F; Energy/Fatigue, EW; Emotional wellbeing, SF; Social functioning, P; Pain, GH; General health

Table 3. Comparison between gender and age groups regarding quality of life dimensions

Quality of Life	Gender (Mean (SD))		p	Age Groups (Mean (SD))					p
	Male	Female		60-65	65-70	70-75	75-80	> 80	
PF	71.38 (24.13)	57.63 (24.75)	0.00	72.03 (19.56)	65.92 (19.65)	40.41 (29.30)	50.71 (41.57)	33.75 (35.33)	< 0.01
RP	62.22 (36.95)	57.04 (34.70)	0.30	64.28 (32.73)	60.35 (33.91)	55.20 (39.68)	39.28 (45.31)	25.00 (46.29)	0.03
RE	62.12 (33.52)	62.42 (38.34)	0.79	68.40 (33.78)	57.61 (36.30)	56.94 (37.40)	33.33 (33.33)	75.00 (46.29)	0.03
E/F	59.88 (19.24)	55.54 (18.36)	0.95	59.12 (18.37)	58.35 (15.48)	51.87 (25.14)	55.71 (13.36)	50.00 (30.70)	0.37
EW	66.44 (18.89)	62.54 (16.80)	0.06	66.46 (15.78)	66.51 (14.67)	56.66 (25.83)	54.28 (12.18)	52.00 (28.52)	0.01
SF	74.22 (17.99)	67.27 (18.61)	0.01	72.52 (17.29)	72.03 (17.65)	63.02 (20.34)	57.14 (24.85)	65.62 (23.85)	0.05
P	77.38 (23.76)	64.79 (27.77)	0.00	74.36 (28.87)	70.50 (24.15)	59.16 (27.86)	58.57 (9.44)	70.00 (20.95)	0.01
GH	61.83 (14.92)	59.63 (16.61)	0.20	65.71 (16.22)	56.64 (12.41)	55.83 (17.23)	52.85 (5.66)	58.75 (24.89)	0.00

PF; Physical functioning, RP; Role limitations caused by physical health problems, RE; role limitations caused by emotional health problems, E/F; Energy/Fatigue, EW; Emotional wellbeing, SF; Social functioning, P; Pain, GH; General health

Table 4. Comparison between employment and housing groups regarding quality of life dimensions

Dimensions of quality of life	Employment (Mean (SD))			p	Housing (Mean (SD))			p
	Retired	Un-employed	Employed		House owner	Rental house	Living with children	
PF	68.01 (25.32)	56.90 (24.29)	73.33 (23.57)	0.00	63.88 (23.60)	67.91 (20.40)	58.44 (36.52)	0.83
RP	59.43 (36.69)	57.14 (36.31)	69.44 (26.5)	0.47	55.00 (35.43)	75.60 (32.45)	59.48 (36.23)	0.00
RE	61.90 (33.16)	61.90 (40.78)	66.20 (29.90)	0.87	60.43 (35.49)	59.25 (37.46)	74.71 (36.35)	0.09
E/F	58.01 (19.90)	55.29 (18.68)	65.00 (10.28)	0.13	57.25 (17.52)	62.91 (24.70)	51.89 (14.84)	0.06
EW	61.90 (33.16)	61.38 (17.70)	71.77 (12.38)	0.10	64.97 (16.96)	68.88 (21.01)	55.44 (14.84)	0.00
SF	71.73 (17.11)	68.54 (19.19)	71.80 (23.58)	0.63	71.11 (18.49)	68.88 (22.30)	68.96 (14.02)	0.64
P	77.95 (21.10)	62.76 (29.67)	65.55 (29.68)	0.00	65.87 (26.37)	77.77 (29.57)	82.75 (17.37)	0.00
GH	60.56 (15.17)	59.40 (17.36)	66.66 (10.84)	0.19	59.33 (14.27)	64.16 (18.87)	62.24 (18.54)	0.32

PF; Physical functioning, RP; Role limitations caused by physical health problems, RE; role limitations caused by emotional health problems, E/F; Energy/Fatigue, EW; Emotional wellbeing, SF; Social functioning, P; Pain, GH; General health

Discussion

The present study demonstrated a descriptive analysis of RAND-36-driven HRQoL dimensions of 200 elderly living in Mashhad, Iran, to gain a better understanding of how close Iranian individuals are to experiencing healthy elderly days. This study investigated the differences between different ages, genders, employment status, and living conditions. Overall, the mean values of all dimensions were over average. While living conditions did not demonstrate a consistent trend along the dimensions, younger

[DOI: 10.18502/ehj.v10i2.17363]

individuals, individuals with employed status, and men exhibited higher scores in most of the dimensions, although not all were statistically significant.

Healthy ageing is a multidimensional concept that ties intrinsic (physical state, mental/cognitive state, individual characteristics and demographics, and personal purposes and goals in life) and extrinsic (socioeconomic state, politics, government, culture, and education) aspects to one's life in a manner that preserves an ideal life expectancy and quality by accommodating to ongoing changes (15). The current study depicts that the general health of individuals with older ages is significantly lower than others, indicating the role of ageing in one's overall well-being. Similarly, in a cross-sectional study of 400 elderly people over 60 in Zanjan, Iran, participants' ages had a negative correlation with their respective QoL obtained from the Anderson model (16). This decline in well-being by ageing may be explained by the diminished daily activities and the subsequent loss of autonomy in their lives (17). Confirming this theory, among 1371 Chinese elderly, older individuals living in nursing homes with less financial sufficiency and subsequently higher dependence on others, faced the worst intrinsic capacity (18). Moreover, the decrease in physical activity and locomotion, in turn, increases the risk of developing frailty (19, 20). Although frailty may frequently be seen in underweight elderly with chronic diseases who take multiple medications, older age itself constitutes an independent contributing factor (21).

The major differences in quality of life between age groups in the present study were more attributed to physical aspects rather than mental dimensions, which may suggest that the care provided by the healthcare centers has not yielded the anticipated outcomes (22). This inadequacy in the health services in Iran stems from a multidimensional perspective, ranging from the insufficient awareness, literacy, or economics state of the elderly to the healthcare-related factors including the low quality of equipment, challenging access to the centers' locations and their scattered distributions, the low number of physician and healthcare providers with extensive experience and knowledge on geriatrics' care, and inadequate coverage of expenses by insurance agencies (23-26). Similarly, the healthy ageing model by Rivadeneira et al., demonstrated a lower probability of healthy ageing in women, elderly over 85 years, elderly without secondary education, individuals with unfavorable economic states, and individuals with a low perception of one's overall health condition (27), which resonates with the findings of our study on men scoring higher on all dimensions compared to women.

Our findings on the difference between QoL of men and women are consistent with the findings of other studies in the north, south, and capital of Iran (6, 7, 28). The gap in quality of life between the two genders widens with advanced age (29). A discrepancy between genders was evident in the findings of the current study as well, as men exhibited higher HRQoL scores in all health spheres compared to women. This agrees with the results of similar larger studies in Iran (8, 30). Moreover, health-related gender differences have been reported in many regions including China (29), Pakistan (31), India (32), Germany (33), and Chile (34). This variance is believed to be attributed to life experience in its entirety, rather than focusing solely on the days of older age (35). Possessing a strong financial ability throughout one's life cycle provides a higher quality preventive, primary, and secondary healthcare (36). The higher and statistically significant rates of unemployment in this study, further confirm the role of financial equity in balancing HRQoL gender differences. These differences, whether inherent or caused by extrinsic and community-related factors, must raise attention to implementing health policies that take gender discrepancies into account, rather than the current gender-neutral social welfare policies (29).

In contrast to our study, overall mental and physical aspects of health in the participants have been assessed in several other studies in Iran. A similar study by Tajvar et al., on the Tehran population using SF-36 questionnaire reported higher than average mental components summary (MCS), and physical component summary (PCS) (7). Furthermore, a systematic review of studies conducted on the QoL of elderly people in Iranians up to 2018 by Tourani et al., obtained higher than average pooled MCS (57.58), and PCS (53.65) (11). Evaluation of the overall mental and physical aspects of health was not achievable in this study due to the inherent restrictions of the survey used.

Conclusion

The overall HRQoL of elderly individuals in Mashhad was found to be average with women scoring lower in all dimensions with significant differences in physical and social functioning, and pain. The findings of this study demonstrate a lower quality in the lives of elderly women in Mashhad, consistent with other cities in Iran, which prompts urgent and integrated attempts in health policies regarding female geriatrics.

Study limitations

This study has several limitations, namely, the health center-based sampling of the participants, the small sample size, and the inability of the questionnaire to demonstrate overall health aspects. It is suggested that in the future, studies with larger populations obtained from various origins be conducted in Iran.

Conflict of interest

The authors have no conflict of interest to declare.

Acknowledgements

All the people who contributed to the study are included as authors.

Funding

None

[DOI: 10.18502/ehj.v10i2.17363]

Authors' contributions

All authors have read and approved the manuscript. Study concept and design: MS, EMF, and SN; Methodology: MS, EMF; Data gathering and curation: SN, Analysis and interpretation of data: PB and SN; Drafting of the manuscript: PB; Critical revision of the manuscript for important intellectual content: MS, EMF, and PB.

References

1. Rudnicka E, Napierała P, Podfigurna A, Męczekalski B, Smolarczyk R, Grymowicz M. The World Health Organization (WHO) approach to healthy ageing. Maturitas. 2020; 139: 6-11.
2. Scuteri A, Nilsson PM. Aging population: challenges and opportunities in a life course perspective. In: Cunha PG, Nilsson PM, Olsen MH, Boutouyrie P, Laurent S, editors. Early vascular aging (eva) (second edition). Boston: Academic Press; 2024. p. 35-9.
3. Chen X, Giles J, Yao Y, Yip W, Meng Q, Berkman L, et al. The path to healthy ageing in China: a Peking University-Lancet Commission. The Lancet. 2022; 400(10367): 1967-2006.
4. Kim S. World Health Organization Quality of Life (WHOQOL) Assessment. In: Maggino F, editor. Encyclopedia of quality of life and well-being research. Cham: Springer International Publishing; 2020. p. 7866-7.
5. Shanbehzadeh S, Zanjari N, Yassin M, Yassin Z, Tavahomi M. Association between long COVID, functional activity, and health-related quality of life in older adults. BMC Geriatrics. 2023; 23(1): 1-11.
6. Heydari J, Khani S, Shahhosseini Z. Health-related quality of life of elderly living in nursing home and homes in a district of Iran: Implications for policy makers. Indian Journal of Science and Technology. 2012; 5(5): 2782-7.
7. Tajvar M, Arab M, Montazeri A. Determinants of health-related quality of life in elderly in Tehran, Iran. BMC Public Health. 2008; 8: 1-8.
8. Hajian-Tilaki K, Heidari B, Hajian-Tilaki A. Health related quality of life and its socio-demographic determinants among Iranian elderly people: a population based cross-sectional study. Journal of Caring Sciences. 2017; 6(1): 39-47.
9. Kowal P, Dowd JE. Definition of an older person. Proposed working definition of an older person in Africa for the MDS project. World Health Organization, Geneva. 2001; 10(2.1): 5188-9286.
10. Tourani S, Behzadifar M, Martini M, Aryankhesal A, Taheri Mirghaed M, Salemi M, et al. Health-related quality of life among healthy elderly Iranians: a systematic review and meta-analysis of the literature. Health and Quality of Life Outcomes. 2018; 16(1): 1-9.
11. Tapak L, Cheraghi F, Sadeghi A, Shirmohammadi N, Feizybarnaji A. Usefulness of the SF-36 Health Survey questionnaire in screening for health-related quality of life among parents of children with cancer: Latent profile analysis. Journal of Preventive Medicine and Hygiene. 2022; 63(1): 142-51.
12. Hays RD, Morales LS. The RAND-36 measure of health-related quality of life. Annals of Medicine. 2001; 33(5): 350-7.
13. Ahmadi M, Rohani C, Beiranvand S, Matbooei M, Poormansouri S. Health-related quality of life and predictive role of self-efficacy in Iranian patients with sickle cell disease. Iranian Journal of Blood and Cancer. 2018; 10(1): 1-8.
14. Mirzaei S, Tame AI, Anbiaie R, Moradipour F, Nasiri M, Rohani C. Emotional Intelligence as a predictor of health-related quality of life in breast cancer survivors. Asia-Pacific Journal of Oncology Nursing. 2019; 6(3): 261-8.
15. Menassa M, Stronks K, Khatmi F, Roa Díaz ZM, Espinola OP, Gamba M, et al. Concepts and definitions of healthy ageing: a systematic review and synthesis of theoretical models. EClinicalMedicine. 2023; 56: 101821.
16. Nazari S, Kamali K, Hajimiri K. Predictive factors of quality of life among the elderly in Iran: Application of Andersen's behavioral model. Journal of Education and Health Promotion. 2021; 10: 70.
17. Beltz S, Gloystein S, Litschko T, Laag S, van den Berg N. Multivariate analysis of independent determinants of ADL/IADL and quality of life in the elderly. BMC Geriatrics. 2022; 22(1):894.
18. Yu R, Lai D, Leung G, Woo J. Trajectories of Intrinsic Capacity: Determinants and Associations with Disability. The Journal of Nutrition, Health and Aging. 2023; 27(3): 174-81.
19. Sentandreu-Mañó T, Badenes-Ribera L, Fernández I, Oliver A, Burks DJ, Tomás JM. Frailty in the old age as a direct marker of quality of life and health: Gender differences. Social Indicators Research. 2022; 160(2): 429-43.
20. Homma D, Minato I, Imai N, Miyasaka D, Horigome Y, Suzuki H, et al. Associations of lower-limb phase angle with locomotion and motor function in Japanese community-dwelling older adults. Geriatrics. 2023; 8(6):121.
21. Lv J, Li R, Yuan L, Yang Xl, Wang Y, Ye ZW, et al. Research on the frailty status and adverse outcomes of elderly patients with multimorbidity. BMC Geriatrics. 2022; 22(1): 560.
22. Skarupski KA, de Leon CFM, Bienias JL, Scherr PA, Zack MM, Moriarty DG, et al. Black–white differences in health-related quality of life among older adults. Quality of Life Research. 2007; 16(2): 287-96.
23. Moghadasi AM, Sum S, Matlabi H. Why do older people not use the public health services of the integrated aging program? A multidimensional approach in a qualitative study. BMC Health Services Research. 2022; 22(1): 1288.
24. Bidarpoor F, Rahmani K, Akhavan B, Rahimzadeh A, Pourmoradi A. Identifying reasons of non-attendance of urban households in the comprehensive centers of health services in sanandaj: a combination of two quantitative and qualitative approaches. Iranian Journal of Epidemiology. 2019; 14(4): 302-11.
25. Soleimanvandi Azar N, Mohaqeqi Kamal SH, Sajadi H, Ghaedamini Harouni GR, Karimi S, Foroozan AS. Barriers and facilitators of the outpatient

[DOI: 10.18502/ehj.v10i2.17363]

health service use by the elderly. Iranian Journal of Ageing. 2020; 15(3): 258-77. [Persian]
26. Tajvar M, Yaseri M, Karami B, Mohammadi M. Pattern of outpatient health service utilization by older people in Iran. Iranian Journal of Ageing.. 2021; 15(4): 410-27. [Persian]
27. Rivadeneira MF, Mendieta MJ, Villavicencio J, Caicedo-Gallardo J, Buendía P. A multidimensional model of healthy ageing: proposal and evaluation of determinants based on a population survey in Ecuador. BMC Geriatrics. 2021; 21(1): 1-11.
28. Aghamolaei T, Tavafian SS, Zare S. Health related quality of life in elderly people living in Bandar Abbas, Iran: a population-based study. Acta Medica Iranica. 2010; 48(3): 185-91.
29. Lu M, Wang X, Shen K, Ji C, Li W. Change trend and gender differences in disability-free life expectancy among older adults in China, 2010–2020. Frontiers in Public Health. 2023; 11: 1-9.
30. Farzianpour F, Arab M, Foroushani AR, Zali Mehran EM. Evaluation of the criteria for quality of life of elderly health care centers in Tehran Province, Iran. Global Journal of Health Science. 2015; 8(7): 68-76.
31. Kurian A, Baidya J, Saha R, Dikshit S, Ratna V, Chakravarty S. Quality of life among the elderly: exploring gender, language and religion differences. Multimedia System. 2023; 10(4): 931-96.
32. Banerjee S, Gogoi P. Exploring the role of financial empowerment in mitigating the gender differentials in subjective and objective health outcomes among the older population in India. Plos One. 2023; 18(1): 1-24.
33. Kurth BM, Ellert U. The SF-36 questionnaire and its usefulness in population studies: results of the German Health Interview and Examination Survey 1998. Soz Praventivmed. 2002; 47(4): 266-77.
34. Lera L, Fuentes-García A, Sánchez H, Albala C. Validity and reliability of the SF-36 in Chilean older adults: the ALEXANDROS study. European Journal of Ageing. 2013; 10(2): 127-34.
35. Lu M, Wang XH, Peng C. Analysis on the trends of disability free life expectancy of older adults in China in the context of gender neutrality of social policy: an empirical study based on the sample survey of 1% population in 2005 and 2015. Population Development. 2019; 25: 100.
36. Franz C. Financial empowerment and health related quality of life in family scholar house participants. Journal of Financial Therapy. 2016; 7(1): 1-22.

[DOI: 10.18502/ehj.v10i2.17363]