Elderly Health Journal 2019; 5(2): 79-83.
Shahid Sadoughi University of Medical Sciences, Yazd, Iran
Journal Website : http://ehj.ssu.ac.ir

Original Article

The Relationship between Sleep Quality and Quality of Life of Retired Elders

Somayeh Sharifi [1], Zeinab Heidari [1], Saba Bromand [1], Nilofar Binayi [1], Mahrokh Keshvari *[1]

[1.] Nursing and Midwifery Care Research Center, School of Nursing and Midwifery, Isfahan University of Medical Sciences, Isfahan, Iran

[*] **Corresponding Author:** Nursing and Midwifery Care Research Center, School of Nursing and Midwifery, Isfahan University of Medical Sciences, Isfahan, Iran. **Tel:** +989137537031**, Email address:** keshvari@med.mui.ac.ir

A B S T R A C T

Article history
Received 27 Nov 2018
Accepted 27 Nov 2019

Citation: Sharifi S, Heidari Z, Bromand S, Binayi N, Keshvari M. The relationship between sleep quality and quality of life of retired elders. Elderly Health Journal. 2019; 5(2): 79-83.

Introduction: Survey about the issues and problems related to elderly in order to improve their Quality Of Life (QOL) of this increasing population has become a universal concern. Even though aging is a natural process but many effective factors such as rest and sleep pattern can affect this process. So this study aimed to determine the relationship between sleep quality and QOL of the retried elderly members of Isfahan retirement center

Methods: This descriptive-analytic study was done on 192 retired older adults were referred to Isfahan retirement center by simple random sampling. The information collected via demographic variables, Pittsburgh Sleep Quality Index and Elderly Quality of Life Questionnaire (LIPAD). Finally the data analysis by software SPSS 21 and descriptive statistical tests, Pearson correlation coefficient, t-test and ANOVA.

Results: The results showed that the mean score of sleep quality in the elderly was 6.63 ± 3.41 (range 0-21), which show their sleep quality were poor. The mean score of their QOL were 61.15 ± 9.97 (range 0-93). In addition there were significant and positive correlations between sleep quality and QOL and its dimensions in the retried elderly ($p < 0.05$).

Conclusion: The findings of this study suggest that poor sleep quality in retired elderly people is associated with lack of QOL. Therefore, paying attention to this issue is important in health supporting programs.

Keywords: Aging, Sleep Quality, Quality of Life

Introduction

The composition of the world's population is changing, and developments in medical knowledge and amazing technologies in the today's world have accelerated this process, and consequently increased life expectancy as one of the consequences of this rapid development has increased the number of elderly people. According to the 2016 census, 9.27% of the population of Iran are 60 years old and older (1).

The poor sleep quality is one of the most common problems faced by the elderly people. Studies have shown that one of the factors affecting the sleep quality in the elderly people is the change in the mood and structure of sleep and rhythm of circadian, so that these changes can lead to sleep disorders and repeated complaints (2, 3). It is necessary to explain that the main cause of sleep problems in elderly people is not biological changes in the circadian rhythm, but it is diseases, the effect of drugs, depression and anxiety and restricted movement (4). Research has shown that sleep with poor quality, after headache and gastrointestinal disorders ranks third in terms of elderly problems and it is one of the common complaints and the reason for referring to physicians (5). Epidemiological studies in Iran show that more than 57% of the elderly people report their sleep disorder, and only 12% of the elderly people had no sleep problems (6). It should be noted that in mind that many elderly people feel that sleep problems are due to an increase in age and do not treat it.

[DOR: 20.1001.1.24236179.2019.5.2.3.6]
[DOI: 10.18502/ehj.v5i2.2153]

On the other hand, sleep problems in the elderly people can also affect the "self-perception" in elderly people, and self-perception can also determine how a person behaves and has a useful function that can somehow affect the Quality Of Life (QOL) of the elderly person (7).

The concept of QOL is considered as an essential indicator of health and since it involves many aspects such as physiological, functional and existential aspects, paying attention to it has particular importance (8). One of the factors affecting the QOL is sleep quality. A study in North Taiwan showed that insomnia and mental symptoms causing from it are related to their poor QOL (9). In addition, a study conducted by Kord et al. showed that elderly people will enjoy better sleep quality by changing their lifestyle (10). The results of other study also indicated that elderly people with mild to severe drowsiness were suspected of mental health problems (11).

Although the main challenge of health in the 20th century was to increase life expectancy, the main challenge of health is better QOL in the 21st century (12). However, investigations in Iran show that 62% of elderly people are accidental, 22% are social and 16% are welfare and health. This negligible share shows that the QOL of the elderly people has not been considered so much (8). Considering increase in elderly people population, significant improve their QOL, insufficient information about it; importance of sleep quality among aging people and limitation of studies in this area in Iran, the present study is conducted to determine the relationship between sleep quality and QOL of the retried elderly members of Isfahan retirement center.

Methods

Research design and participants

The present study was a cross-sectional research that was done on 192 retired older adults over 60 years of age who were referred to Isfahan Retirement Center by simple random sampling.

Inclusion criteria were having age 60 years and higher and the ability to answer the questionnaire. Exclusion criteria were recognized mental and physical and psychological disabilities (self-report).

Instrumentation

The sampling tool in this study, except for the individual information form (age, gender, level of education, marital status), included two questionnaires including Pittsburgh Sleep Quality Index (PSQI) and Elderly Quality of Life Questionnaire (LIPAD).

PSQI has 9 questions in 7 dimensions assessing the sleep quality, sleep delay, useful sleep duration, sleep adequacy (proportion of useful sleep duration from the time spent in bed), sleep disorders (night waking), rate of using sleeping drug, and impaired daily function (problems associated with insomnia during the day). The score for each question is in the Likert form and between 0 and 3, and the score 3 on each scale indicates the maximum negative. The total score of this questionnaire is 0 to 21, and according to previous studies, the overall score of 6 and above indicate poor sleep quality (13). Buysse et al. in their study reported the sensitivity and characteristics of questionnaire 0.86.5 and 0.86.5%, they reported internal validity of the questionnaire 0.83, and using re-test, they reported its reliability 0.85 (13). In addition the reliability and validity of the questionnaire were confirmed by Ahmadi et al. in Iran (14).

The elderly quality of life questionnaire (LIPAD) that developed under the support of World Health Organization and studied by De Leo and Makaran in the cities of Padua and Brescia in Italy, Leiden in the Netherlands, and Helsinki in Finland (15). It is used relatively fast and understood by the elderly people with a low level of education easily. The questionnaire examines elderly QOL in 7 dimensions of physical activity (5 questions), depression and anxiety (4 questions), self-care (6 questions), mental performance (5 questions), social function (3 questions), sexual function (2 questions) and life satisfaction (6 questions). Each question has four options scored from zero (the worst state) to three (the best state) and in has total 31 questions, with a minimum score of 0 and a maximum score of 93. Validity and reliability of this questionnaire have been evaluated appropriate in the study conducted by Hesamzadeh et al. so that its validity has been approved by 10 different university professors and its Cronbach alpha was calculated 0.83 to assess its reliability (16). Additionally, its reliability in the research conducted by Sajadi and Biglarian was confirmed by Cronbach's alpha of 0.87 (17).

Data collection

After obtaining permission from the Faculty of Nursing and Midwifery of Isfahan University of Medical Sciences and presenting it to the Isfahan Retirement Center and obtaining permission from this association officer, sampling was carried out. In this study, a random sampling method was used. Among files of referrals to the association, file number of all persons aged 60 and higher was extracted and then random numbers table was used to determine the sample members. Then, among those who met the inclusion criteria, 190 samples were selected. Questionnaires were completed in self-reporting form in one stage. The sampling lasted about two months.

Ethical considerations

The Research Ethics Committee of Isfahan University of Medical Sciences approved this study (ethical code IR.MUI.REC.1394.2.006). Moreover first, the participants were given enough explanation about the study objectives and then their written consent for participating in the research was obtained.

Data analysis

The data of this research were quantitative and descriptive statistical methods were used for the analysis. In addition, SPSS 21 software was used to analyze the data. Pearson correlation coefficient was calculated to determine the relationship between quantitative variables of sleep quality and QOL. T-test was used for two-domain variables and ANOVA for multi-domain variables.

[DOR: 20.1001.1.24236179.2019.5.2.3.6]

[DOI: 10.18502/ehj.v5i2.2153]

[DOR: 20.1001.1.24236179.2019.5.2.3.6]

[DOI: 10.18502/ehj.v5i2.2153]

Results

Out of 190 participants in the study, 177 completed the questionnaires. The age of the samples ranged from 60 to 82 and the majority (82%) were in the age group of 60-69 years. Among the participants 54.2% were men, 59.3% in higher education, 10.2 % under high school and 30.5 % high school education. The Marital status of participant was 2.8% single, 85.3% married, 9.6% spouse deceased and 2.3% divorced.

The results show that the mean score of sleep quality in the elderly people was 6.63 ± 3.41 (range 0-21), suggesting a mild prevalent disorder in the sleep quality of elderly people. In addition, the mean score of elderly people QOL was 61.15 ± 9.97 (range 0-93). The highest and lowest score was related to self-care dimension (12.78 ± 2.92) and social dimension (6.14 ± 1.4), respectively. Pearson correlation coefficient also showed that there is a significant relationship between sleep quality score and QOL score and its dimensions ($p < 0.05$) (Table 1).

In addition Pearson correlation coefficient shows that age has significant correlation with variables of sleep quality ($r = 0.356$, $p < 0.001$) and QOL ($r = -0.471$, $p < 0.001$). Spearman correlation coefficient also shows that the level of education has a significant relationship with sleep quality ($\rho = -0.32$, $p < 0.001$) and QOL ($\rho = 0.285$, $p < 0.001$).

Independent t-test also shows that the mean score of sleep disorder in females is significantly higher than that in males ($p = 0.004$), but the mean score of QOL is not significantly different between males and females ($p = 0.29$) (Table 2).

Table 1. The mean score of sleep quality and quality of life and their correlation coefficients

Variable	Statistical index		Pearson Correlation Coefficient	
	Mean	SD	r	p
Sleep quality	6.63	3.41		
Quality of life	61.15	9.97	-0.644	< 0.001
Physical dimension	11.69	2.12	-0.556	< 0.001
Self-care dimension	12.78	2.92	-0.587	< 0.001
Depression dimension	9.57	2.30	-0.587	< 0.001
Cognitive dimension	10.10	1.8	-0.443	< 0.001
Social dimension	6.14	1.4	-0.323	< 0.001
Satisfaction dimension	10.87	2.68	-0.332	< 0.001

Table 2. Sleep quality and quality of life in females and males elderly people

Variable	Males		Females		T-test	
	Mean	SD	Mean	SD	t	p
Sleep quality	5.9	3.3	7.4	3.4	2.94	0.004
Quality of life	61.9	10.3	60.3	9.5	1.07	0.29

ANOVA test shows a significant relationship between sleep quality score of elderly people and their marital status ($p = 0.01$). As seen in the table, the mean sleep quality is in the best state in married people (6.3 ± 3.33) and it is in the worst state (6.5 ± 4.7) in single people. In addition, there is a significant relationship between the QOL score and the marital status of the elderly people ($p = 0.038$), and the mean score of QOL in married people is in the highest level (62 ± 9.7) and it is in the lowest level (52.1 ± 14.4) in the single people (Table 3).

Discussion

In this study, the relationship between sleep quality and QOL of elderly people who were member of Isfahan Retirement Center was studied. The results of this study showed that subjects of this study have mild sleep disorder. This finding is in line with the results of epidemiological studies, indicating a high level of sleep disorder in societies and an increase in its prevalence with age (18, 19). The results also showed that the QOL of elderly retired people is moderate, which is consistent with the results of previous studies (20, 21). Habibi et al. in their study indicated the mean score of QOL in elderly people of west of Tehran was moderate (22).

There were significant and positive correlations between sleep quality and QOL and its dimensions in the retried elderly. In other words, people who have better sleep quality have also good QOL, and better sleep quality is correlated with physical, self-care, cognitive state, better social functioning, and higher satisfaction and lower depression. Confirming the results of the study conducted in Taiwan, results indicated that poor sleep quality, insomnia and psychological symptoms caused are associated with poor life quality (9). Additionally, other studies showed that there was a strong negative correlation between poor sleep quality and QOL in the elderly people (11, 23, 24). These results confirmed that sleep health is important for improving QOL of elderly people, and those who had poorer sleep quality had a worse QOL. According to the results of other studies, chronic insomnia is associated with results such as daytime drowsiness, fatigue, low energy, depressed mood, psychomotor impairment, vulnerability, cognitive impairment, and reduced concentration and attention, affecting the QOL of the elderly people (25, 26).

Table 3. The relationship of sleep quality and quality of life of elderly people with marital status

Variable	Single		Married		Spouse deceased		Divorced		ANOVA	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	F	p
Sleep quality	6.5	4.7	6.3	3.3	9.1	3.4	8.7	3.9	3.8	0.01
Quality of Life	52.1	14.4	62	9.7	57.1	9.9	57.7	7.3	2.86	0.038

The results also showed with aging, the sleep quality of the elderly people and their QOL decrease. Other studies show that increasing age also leads to a decline in QOL in most dimensions (27, 28). This result may due to the greater frequency of chronic medical conditions in advanced age

In addition, the results of this study showed that females had more sleep disorders than males. This might be due to the fact that menopause plays an important role in the structural changes in the sleep of elderly women, and in the post-menopause period, they sleep quality declines. These findings are consistent with the results of other studies, in better sleep quality was reported in males (6, 19). The results also indicate that married people couples have good sleep quality. In fact, those who are married have a great source of social support that is family. Conversely, widows and single people are deprived of this support. Previous studies have shown that being single, divorced or widowed are factors that have a positive relationship with insomnia and sleep disorders (29-31).

Conclusion

The findings of this study suggest that poor sleep quality in retired elderly people is associated with lack of QOL. Therefore, paying attention to this issue is important in health supporting programs. Accordingly, it is suggested that programs and approaches to be considered to improve the sleep quality of the elderly people so that they have a better QOL. Regarding the relationship between QOL and sleep quality in the elderly, it is recommended further studies should be done to indicate this relationship and the transposition of each of these factors compared to each other.

Study limitations

A limitation of this study is conducting an investigation in one city with specific lifestyles and culture and in a specific group of elderly people (retired). Small sample size that led to wide range of SD must be taken into consideration in examining the results. Therefore, it is recommended that studies to be conducted in different cities, in different groups of elderly people and in larger size.

Conflict of interest

The authors declare no potential conflicts of interests.

Authors' contributions

Study design: MK, SS
Data collection and analysis: MK, SB, SS, NB
Manuscript preparation: ZH, MK, SS, SB, NB
All the authors have read the manuscript and approved the final version.

References

1. Statistical Center of Iran. Population of the country in terms of sex in urban and rural areas by province; (Persian) [Internet]. 2016 [Cited 2017 July 28]. Available from: https://www.amar.org.ir/Portals/0/census/1395/results/tables/jamiat/tafsili/kol/1-jamiat.xls
2. Léger D, Poursain B, Neubauer D, Uchiyama M. An international survey of sleeping problems in the general population. Current Medical Research and Opinion. 2008; 24(1): 307-17.
3. Reid KJ, Martinovich Z, Finkel S, Statsinger J, Golden R, Harter K, et al. Sleep: a marker of physical and mental health in the elderly. The American Journal of Geriatric Psychiatry. 2006; 14(10): 860-6.
4. Ohayon MM, Carskadon MA, Guilleminault C, Vitiello MV. Meta-analysis of quantitative sleep parameters from childhood to old age in healthy individuals: developing normative sleep values across the human lifespan. Sleep. 2002; 27(7): 1255–73.
5. Cotroneo A, Gareri P, Lacava R, Cabodi S. Use of zolpidem in over 75-year-old patients with sleep disorders and comorbidities. Archives of Gerontology and Geriatrics, Supplement. 2004; 11(9): 93-6.
6. Izadi F, Adib M, Afazel MR. Quality of sleep and it's related factors in the hospitalized elderly patients of Kashan hospitals in 2007. Feyz. 2009; 12(4): 52-60. [Persian]
7. Phillips DT. Relationships between sleep quality, perceived cognition, and quality of life in older adults [PhD thesis]. California: North central University; 2006.
8. Mokhtari F, Ghasemi N. Comparison of elderly's "quality of life and mental health living in nursing homes and members of retired club of Shiraz city". Salmand: Iranian Journal of Ageing. 2011; 5 (4): 53-63. [Persian]
9. Wu HC, Lai JN, Hwang JS. Quality of life and sleep quality amongst climacteric women seeking medical advice in Northern Taiwan. Sleep Medicine. 2012; 13(7): 906-12.
10. Kord A, Moosavi S, Masooleh SH, Behnampoor N. Assessment of the correlation between lifestyle and quality of sleep in elderly who referred to retirement center in Rasht, 2007. Journal of Holistic Nursing and Midwifery. 2007; 17(2): 15-22. [Persian]
11. Lo CM, Lee PH. Prevalence and impacts of poor sleep on quality of life and associated factors of good sleepers in a sample of older Chinese adults. Health and Quality of Life Outcomes. 2012; 10(72): 1-7.

[DOR: 20.1001.1.24236179.2019.5.2.3.6]
[DOI: 10.18502/ehj.v5i2.2153]

12. Najimi A, Moazemi Goudarzi A. Healthy lifestyle of the elderly: a cross-sectional study. Journal of Health System Research . 2012; 8(4):581-87. [Persian]
13. Buysse DJ, Reynolds CFI, Monk TH, Berman SR, Kupfer DJ. The Pittsburgh sleep quality index: a new instrument for psychiatric practice and research. Psychiatry Research 1989; 28: 193-213
14. Ahmadi S, Khankeh H, Mohammadi F, Fallahi M, Reza Soltani P. The effect of sleep restriction treatment on quality of sleep in the elders. Salmand: Iranian Journal of Ageing. 2010; 5 (2): 7-15. [Persian]
15. De Leo D, Diekstra FW, Lonnqvist J, Trabucchi M, Cleiren H P D, Giovani B, et al. LEIPAD , An internationally applicable instrument to access quality of life in elderly. Behavioral Medicine. 1998, 24(1): 17-29.
16. Hesamzadeh A, Maddah SB, Mohammadi F, Fallahi Khoshknab M, Rahgozar M. Comparison of elderly's "quality of life" living at homes and in private or public nursing homes. Salmand: Iranian Journal of Ageing. 2010; 4 (4): 66-74. [Persian]
17. Sajadi H, Biglarian A. Quality of life among elderly women in Kahrizak charity foundation, Tehran, Iran. Payesh. 2007. 6(2): 105-108. [Persian]
18. Hsu H, Lin M. Exploring quality of sleep and its related factors among menopausal women. The Journal of Nursing Research. 2005; 13 (2): 153-64.
19. Onji IM, Bagheri HA, Afazel MR. Sleep quality and its related factors in inpatient elderly of Kashan Hospitals in 2006. Feyz Journal. 2008; 12 (4): 107-12. [Persian]
20. Lee TW, Ko IS, Lee KJ. Health promotion behaviors and quality of life among community dwelling elderly in Korea: a cross-sectional survey. International Journal of Nursing Studies. 2006; 43(3): 293-300.
21. Nosratabadi M, Saber M. Social support and health-related quality of life in elderly people covered by the Welfare organization of Kerman city. Health & Development Journal. 2014; 3(3): 189-199. [Persian]
22. Habibi Sola A, Nikpour S, Sohbatzadeh R, Haghani H. Quality of life in elderly people of west of Tehran. Iranian Journal of Nursing Research. 2008. 2(7): 29-35. [Persian]
23. Ribeiro Do Valle C, Valle E, Valle L, Alves Fior C. Quality of life and sleep disorders in elderly. Sleep Medicine. 2013; 14(1):291.
24. Şenol V, Soyuer F, Argün M. Quality of life of elderly nursing home residents and its correlates in Kayseri. A descriptive-analytical design: A cross-sectional study. Health. 2013; 5(2): 212-21.
25. Ancoli-Israel S, Cooke JR. Prevalence and comorbidity of insomnia and effect on functioning in elderly populations. Journal of the American Geriatrics Society. 2005; 53(7): 264–71.
26. Avidan AY. Sleep disorders in the older patient. Primary Care .2005; 32(2), 563–86.
27. Nejati V, Ashayeri H. Health-related quality of life among elderly in Kashan. Iranian Journal of Psychiatry and Clinical Psychology. 2008, 14(1): 56-61. [Persian]
28. Rezaeipandari H, Morowatisharifabad MA, Hashemi SJ, Bahrevar V. Sleep quality among older adults in Mehriz, Yazd province, Iran. Elderly Health Journal. 2015; 1(1): 5-11.
29. Li J, Dong Q, Liu JJ, Dong YH, Yang LS, Ye DQ, Huang F. Sleep and quality of life among rural elderly in Anhui province. Zhonghua Liu Xing Bing Xue Za Zhi. 2010; 31(4): 405-8.
30. De Belvis AG, Avolio M, Spagnolo A, Damiani G, Sicuro L, Cicchetti A, et al. Factors associated with health-related quality of life: the role of social relationships among the elderly in an Italian region. Public Health. 2008; 122(8): 784-93
31. Mohaqeqi Kamal H, Sajadi H, Zare H, Beiglarian A. Elderly quality of life: a comparison between pensioners of social security organization and national retirement fund (Qom County, 2006). Journal of Health Administration. 2007; 10(27): 49-56

[DOR: 20.1001.1.24236179.2019.5.2.3.6]
[DOI: 10.18502/ehj.v5i2.2153]