Association between Cognitive Function and Quality of Life in Aged People in an Elderly Home

Relación entre la función cognitiva y la calidad de vida de personas mayores en una residencia de ancianos

Nova Detalia Saputri[1] https://orcid.org/0000-0003-3105-3650

Tantut Susanto[2*] https://orcid.org/0000-0002-9685-9869

Latifa Aini Susumaningrum[2] https://orcid.org/0000-0002-0619-7700

[1]University of Jember, Faculty of Nursing, Undergraduate Program of Nursing. Jember, Indonesia.

[2]University of Jember, Faculty of Nursing, Department of Community, Family and Geriatric Nursing. Jember, Indonesia.

[*]Corresponding author: tantut_s.psik@unej.ac.id

ABSTRACT

Introduction: The decreasing of cognitive function can cause the elderly depends on their daily activities and affect the quality of life among elderly.

Objective: This study want to examine the cognitive function status and quality of life among elderly at Nursing Home of Jember, Indonesia.

Methods: The study was conducted a cross-sectional design during October December 2018. Among 82 of elderly involved using convenience sampling. Short Portable Mental Status Questionnaire and World Health Organization Quality of Life-BREF were performed to measure congnitive function and quality of life, respectively. Data were analyzed using Chi square test.

Results: Among 82 of elderly identified intact intellectual functioning status (43,90 %) and severe cognitive impairment (2,40 %). Meanwhile, 70,70 % and 8,50 % elderly were moderate and low of quality of life, respectively. Furthermore, cognitive function significantly related to quality of life (X^2= 8,685; p-value= 0,003). The elderly who have

intact cognitive function was prevent for decreasing quality of life (OR= 0,210; 95 % CI= 0.071-0.621).

Conclusions: Cognitive function is related to quality of life among elderly. Therefore, health promotion program, including physical activity could develop in nursing home to improve the cognitive function and quality of life among elderly.

Key words: Aged; Cognition; Quality of life; Homes for the Aged.

RESUMEN

Introducción: La disminución de la función cognitiva puede causar que los ancianos dependan de sus actividades diarias y afecten su calidad de vida.

Objetivo: Examinar el estado de la función cognitiva y la calidad de vida entre los ancianos del Hogar de Ancianos de Jember, Indonesia.

Métodos: Estudio de diseño transversal durante octubre y diciembre de 2018. En 82 personas de la tercera edad involucradas, se usó una muestra de conveniencia. Se realizó un breve cuestionario portátil sobre el estado mental y calidad de vida-BREF de la Organización Mundial de la Salud para medir la función cognitiva y la calidad de vida. Los datos se analizaron mediante la prueba de Chi cuadrado.

Resultados: De los 82 ancianos se identificó el estado de funcionamiento intelectual intacto en 43,90 % y deterioro cognitivo severo en 2,4 %. Mientras, el 70,7 % y el 8,5 % de los ancianos tenían moderada y baja calidad de vida, respectivamente. Además, la función cognitiva se relacionó significativamente con la calidad de vida (X2 = 8,685; valor p = 0,003). Las personas de edad avanzada que tenían una función cognitiva intacta evitaron la disminución de la calidad de vida (OR = 0,210; IC del 95 % = 0,071-0,621).

Conclusiones: La función cognitiva está relacionada con la calidad de vida entre los ancianos. Por lo tanto, el programa de promoción de la salud, incluida la actividad física, podría desarrollarse en un hogar de ancianos para mejorar la función cognitiva y la calidad de vida entre los ancianos.

Palabras clave: anciano; cognición; calidad de vida; hogares para ancianos.

Introduction

The final stage of human development occurs when a person enters old age in which the person experiences aging process that can cause physically, psychosocial, mental and spiritual.[1] Projection data of 2017 indicate that the number of elderly in Indonesia will reach 23.66 million (9,03 %) in 2020 and will increase to 27.08 million, and in 2035 to 48.19 million.[2] This increase will result in the dependence on others for the elderly generally had limitations and the inability so it can be against the quality of his life.[3]

Elderly who have good quality of life have certain characterisics, such as being able to carry out their daily activities and abilities independently, and have good cognitive functions.[4] The quality of life of the elderly can decreased, causing the emergence of degenerative diseases such as stroke, coronary heart disease, and cancer that can reduce productivity, weak physical conditions, and relationships with other people who are bad.[5] Hence, the importance of life expectancy and improvement of their quality of living to be emphasized.[5] Factors related to quality of life are physical, cognitive, social and environmental conditions.[6]

Cognitive aspect can be related to the quality of life of the elderly because cognitive damage can reduce quality of life.[6] This can occur due to changes in brain function such as difficulties in recalling and the symptoms that occur are usually in the form of forgetfulness.[1] Decreased cognitive function that occurs in the elderly can result in a disorder of vascular dementia or alzheimer if not treated properly.[7] Therefore, the elderly are considered as a vulnerable group when experiencing a decline in functional abilities such as cognitive function.[8]

Elderly people who experience a decline in cognitive function will result in daily activities and dependence on others.[9,10] One of the solutions to overcome the problem is to improvinge the cognitive function of the elderly.[9] There are several programs that can be done, namely training to improve memory, stress management therapy, therapy of social skills, communication therapy involving the elderly, and behavioral therapy. Improving cognitive function for improving the quality of life of the elderly needs to be considered. If the program chosen is appropriate, it is expected to improve the quality of life of the elderly and reduce problems experienced by the elderly.[9] Therefore, the aimed of the study was to identify the relationship between cognitive function status and the quality of life of the elderly at Nursing Home of Jember, Indonesia.

Methods

This study was employed correlational analytic with cross sectional approached. This study was to identify the relationship of cognitive function status and the quality of life of the elderly at Nursing Home of Jember, Indonesia during October to December 2018.

The participants were recruited using convenience sampling techniques, 82 participants in the study. The inclusion criteria for this study were the elderly aged ≥ 60 years, the elderly who lived in Nursing Home of Jember, and the cooperative elderly. The exclusion criteria were the elderly who resigned, the elderly who had a history of psychiatric disorders, the elderly who had chronic illnesses such as stroke, and DM, and the elderly who filled out incomplete questionnaires, suddenly resigned, and who were not present during the study.

The analysis of the characteristics of participants in this study employed a questionnaire aimed at measuring the characteristics of the elderly, cognitive function status, and quality of life. The questionnaire used to measure the status of advanced cognitive function was Short Portable Mental Status Questionnaire (SPMSQ). The questionnaire comprises 10 questions related to orientation, personal history, long-term memory, short-term memory, and counting. The results of the questionnaire were 0-2 values of intact intellectual function, 3-4 mild cognitive impairments, 5-10 moderate to severe cognitive disorders.[11] This questionnaire had been tested for validity and reliability in the Indonesian version with a value of α = 0.84-0.89 and reliability with a value of R = 0.812.[12]

Meanwhile, to measure the quality of life of the elderly, using the WHOQOL-BREF questionnaire was used, consisting of 26 statements containing aspects that included the domain of physical health, psychological domain, social relations domain, and environmental domain. From this questionnaire, the following results were obtained values < 33 poor quality of life, ≥ 34 to ≤ 67 moderate quality of life, and ≥ 68 good quality of life.[13] The Indonesian version of this questionnaire had been declared valid with a value of α = 0.89-0.95 and reliability value of R = 0.87.[14]

In this study, the test used is the chi square test with a 2x2 table, where the status of cognitive functions originally consisted of 3 categories, namely intact, mild, moderate to severe. Then, the 3 categories were combined into 2 categories, namely intact and mild, moderate, severe.[11] As with the status of cognitive functions, the quality of life was originally three categories, namely bad, moderate, and good. Then, they were combined into 2 categories, namely bad and good.[15]

In the first stage of data collection in this study, the researchers meet the Head of Nursing Home of Jember and explained the research that would be carried out. Then, the researcher was recommended to meet health workers at Nursing Home of Jember. Next, the researcher was adjusted the participants to the exclusion criteria whose results were obtained from data and health records of health workers at Nursing Home of Jember. After that, the researcher adjusted the participants to the inclusion criteria. Next, the researchers met with participants and explained in advance related to the research that would be carried out, then gave the participants an informed consent sheet. Participants who were prepared were immediately given the SPMSQ and WHOQOL-BREF questionnaire. The duration of filling out this questionnaire was 30 minutes for participants who can read and write, and for participants who cannot read and write for a long time, the filling of the questionnaire lasted for 20 minutes, because it was assisted by the researcher.

Data analysis was performed using SPSS 16 software. Numerical data analysis with normal distribution was presented in the form of mean, standard deviation (SD), t value, and p-value using one sample t test. For numberical data analysis which is not normally distributed, it is presented in the form of median, percentile, z, and p-value using the Kolmogorov-Smirnov test. Meanwhile, categorical data analysis is presented in the form of numbers and percentages. For bivariate analysis, this study employed the Chi square test is to analyze the relationship of cognitive function status with the quality of life of the elderly with a significance value of $p < 0.05$.

This research had been conducted an ethical test and submitted to the Team of Health Research Ethics Commission at the Faculty of Dentistry, University of Jember with No. 222/UN25.8/ KEPK/DL/2018 and has passed the ethical test.

Results

Based on table 1, it can be seen that the characteristics of the participants in this study were the average age of 73 years and the length of stay in the Nursing Home was 48 months (4 years). Most of the participants in this study were women (52,30 %). In terms of marital status, most of participants were married marital status was marriage (44.3 %), they were laborers (43,20 %), and for the last education most participants were not in school (36.4 %).

Table 1- Distribution of sociodemoghrapic participant (n= 82)

Variable	n	(%)
Age (year)		
Mean ± SD		73,33 ± 7,49
Long stay in nursing home (month)		
Median (P$_{25}$ - P$_{75}$)		48 (14-72)
Gender		
Male	36	40,90
Female	46	52,30
Marital status		
Marriage	39	44,30
Single/not yet	4	4,50
Death/divorce	29	33,00
Widowed	10	11,40
Employment history		
Not employment	2	2,30
Private employees	3	3,40
Housewife	5	5,70
Farmer	16	18,20
Enterpreneur	18	20,50
Laborer	38	43,20
Education history		
Senior high school	10	11,40
Junior high school	10	11,40
Elementary school	30	34,10
Not attending school	32	36,40

Note: n (%) = number of participants (presentase); Md = Median; P$_{25}$-P$_{75}$= Percentiles 25-75; M = Mean; SD = Standard Deviation

Regarding the cognitive function examination, the median of cognitive function status among participants in Nursing Home of Jember is 3 (1-4). The Kolmogorov-Smirnov test results obtained K-S value= 1,47; p-value of 0.03, indicating that cognitive function status of 82 participants experienced mild cognitive impairment because they had middle value 3 which is more than the population value of 0-2.

The quality of life among participants living in Nursing Home is not the same, where the quality of life of participants in Nursing Home of Jember is very significant with an average value of 51.93 ± 13,400. Based on the results of the One Sample Test, the value of t = 35.093; 95% CI = 48.99-54.87. It shows that the 82 participants had a moderate quality of life because it has an average value that is less than the population value of 68-100.

The results of the analysis using the chi square test in table 4 show that there is a relationship between cognitive function status and the quality of life of participants. The participants who experienced mild cognitive function status up to a weight of 65,60 % have poor quality of life. So, it can be concluded that there is a relationship between cognitive function status and the quality of life of elderly in Nursing Home of Jember ($X^2 = 8.685$; p-value = 0.003)

Based on table 4 it can be seen that the OR value is 0.210, so that from the OR value in the table above it can be concluded that the elderly who have intact cognitive function can prevent a decrease in their quality of life (OR = 0.210; 95 % CI = 0.071-0.6621).

Table 2- The relationship cognitive function status with quality of life (n= 82)

Cognitive Function Status	Quality of life						
	Poor		Good		χ^2	OR	95 % CI
	n	%	n	%	(p-value)		Lower-Upper
Intact	21	34,40	15	71,40	8,685	0,210	0,071 − 0,621
Mild+moderate+severe	40	65,60	6	28,60	(0,003)		

Note: n % = number of participants (presentase); OR = Odds Ratio; χ^2 = Pearson Chi-Square; 95 % CI= 95 % Confidence Interval; *p*-value = <0,05

Discussions

Based on the results of this study, there is a relationship between cognitive function status and the quality of life of the elderly in Nursing Home of Jember, Indonesia. The results of this study are in line with previous studies, that the cognitive functions of elderly living in nursing homes can affect their quality of life.[16] The quality of life an elderly person who lives in a home, can be related to health, social relations with others, and psychological factors.[17]

Based on the results of this study, the majority of elderly people living in Nursing Home of Jember experienced mild to severe cognitive impairment. The results of previous research show that, the elderly can experience mild to severe cognitive impairment due to a decrease in the function of the nervous system spesifically in the axons and spinal cord which functions for as coordination and balance. If the nervous system decreases, indirectly cognitive function also decreases.[18]

These results are supported by other studies where elderly people over 65 years of age and living in nursing homes experience cognitive impairment.[19] Similar to the results of the study, it was identified that the elderly who lived in the Nursing Home of Mojokerto experienced severe cognitive impairment of (46.70 %). This is because of the factors that influence the occurrence of cognitive changes in the elderly such as predisposing factors which are a result of biological disorders that occur in the central nervous system.

Meanwhile the trigger factors can be related to structural changes in the brain such as tumors or trauma and metabolic disorders.[20] The elderly who experience a decline in their cognitive function status can cause disability and dependence on others. To overcome the problem of cognitive function in the elderly, their cognitive functions can be improved, such as increasing physical activities in the elderly. With an increase in cognitive function, it is expected to reduce the problems that occur in the elderly.

From the results of this study, the quality of life of the elderly in Nursing Home of Jember is found to have a moderate to poor quality of life. This can be caused by differences in the individuals assessment of the meaning of life experienced.[16] Based on the results of previous studies, the quality of life of the elderly living in the Nursing Home of Jakarta is in the good category of 53.50 %.[21] As previous studies show that the elderly who lived in nursing homes had a much lower quality of life than the elderly who stayed at home.[22] This is in line with this study where the majority of the quality of life of the elderly living in Nursing Home of Jember has a moderate quality of life (70.70 %) to poor (8.50 %). The difference in the results is likely that there are influencing factors such as physical, environmental, and social activity factors where the elderly who live in nursing homes have lower frequency of social contact and social support.[21,22] Meanwhile, the elderly who live at home or in the community tend to have a better quality of life because of the social support from their families and wider social interaction between individuals than the elderly who live in the nursing homes.[3]

In a previous research was related to the quality of life of the elderly based on the physical domain, the problem being complained of was a decrease in his health status, energy, vitality, and quality of sleep. The psychological domain that is complained was the burden of the elderly work. The social domain is the relationship with family and society. Where as the environmental domain complained about the safety and availability of health facilities.[23]

The World Health Organization (WHO) has emphasized that by carrying out health promotion behavior is a strategy to be able to maintain a good quality of life.[24] The elderly who join in with health promotion behaviors such as physical activity can improve their quality of life because they can affect the physical and psychosocial aspects of the elderly. In addition, it can also make elderly people keep on doing healthy habits and regularly practice physical exercise and participate in the social environment.[25]

The final result of this study is the relationship between cognitive function status and the quality of life of the elderly at Nursing Home of Jember. Based on previous research, there

was a relationship between cognitive impairment and the quality of life of elderly people in nursing homes[26] and this study is in line where the elderly who live in Nursing Home of Jember experience moderate to severe cognitive impairment that is associated with quality of life. This can occur because based on previous research results, there is a decrease in elderly body functions such as decreased nervous system function. The decline is a problem that often occurs in the elderly such as disorientation of time, place, and new things. As a result of the decline in cognitive function, it causes elderly people to depend on others, causing changes in their psychosocial aspects.[20]

Social relations are the core domains found in quality of life. Indicators of good quality of life, namely, having good health, good social relations, security and financial, friends and the ability to work.[26,27] Elderly people who experience a decline in cognitive function can make elderly people hampered in carrying out their daily activities. The result can cause dependence on other people, so that it can affect the quality of life.

This study has limitations, namely the use of cross-sectional designs that are adapted to current conditions, so that from this it cannot see a cause and effect experienced before. In addition, the number of participants used in this study is small because it is only done in one place (one site center). As well as the characteristics of the participants used only cover a large part such as sociodemographic data in general, so that if it is not carefully examined it can cause bias towards the results of the study.

Concluding, the cognitive function is related to quality of life among elderly at Nursing Homes of Indonesia. The elderly who have good cognitive function can prevent a decrease in their quality of life. The results of this study can provide several recommendations related to the improvement of cognitive function status and the quality of life of the elderly. Therefore, health workers in the Nursing Home should be to arrange the elderly activities, then involve them in increasing physical activities. If therapy is to be given, the nurses should prepare the problems that occur in the elderly, then prepares therapies that are appropriate for the elderly.

References bibliographicas

1. Pinilih SS, Astutui R, Rini D. Hubungan Antara Lifestyle Dengan Fungsi Kognitif Pada Lansia. Journal of Holistik Nursing Science. 2018 [access: 18/11/2019];5(1):25-35. Available from: http://journal.ummgl.ac.id/index.php/nursing/article/view/1876

2. Kemenkes RI 2017. Analisis lansia di Indonesia. Pus data dan Inf Kemenkes RI. 2018 [access: 10/12/2019];2017;1-2. Available from: https://www.depkes.go.id/resources/download/pusdatin/infodatin/infodatin_%20lansia_%202016.pdf

3. Yuliati A, Baroya N, Ririanty M. Perbedaan Kualitas Hidup Lansia yang Tinggal di Komunitas dengan di Pelayanan Sosial Lanjut Usia. e-Jurnal Pustaka Kesehatan. 2018 [access: 10/12/2019];2014;2(1):87-94. Available from: https://jurnal.unej.ac.id/index.php/JPK/article/view/601

4. Sari RA, Yulianti A. Mindfullness Dengan Kualitas Hidup Pada Lanjut Usia. Jurnal Psikologi. 2018 [access: 10/12/2019];2017;13(1):48-54. Available from: https://media.neliti.com/media/publications/127231-ID-mindfullness-dengan-kualitas-hidup-pada.pdf

5. Rohmah AIN, Purwaningsih, Bariyah K. Quality of Life Elderly. Jurnal Keperawatan. 2018 [access: 10/12/2019];2012;3(2):120-32. Available from: https://journal.unnes.ac.id/nju/index.php/kemas/article/view/12024

6. Akdag B, Telci EA, Cavlak U. Factors affecting cognitive function in older adults: A turkish sample. International Journal Gerontology. 2018 [access: 10/12/2019];2013;7(3):137-41. Available from: https://www.researchgate.net/publication/259166763_Factors_Affecting_Cognitive_Function_in_Older_Adults_A_Turkish_Sample

7. Muzamil MS, Martini RD. Hubungan antara tingkat aktivitas fisik dengan fungsi kognitif pada usila di Kelurahan Jati Kecamatan Padang Timur. J Kesehat Andalas. 2018 [access: 10/12/2019];2014;3(2):202-5. Available from: http://jurnal.fk.unand.ac.id/index.php/jka/article/view/87

8. Rahayu S, Catharina DNH, Eka Putri YS. The Experience of Older People Living in an Elderly Residential Home (Panti Sosial Tresna Werdha): A Phenomenology. Enferm Clin. 2018 [access: 10/12/2019];2018;28:79-82. Available from: https://scholar.ui.ac.id/en/publications/the-experience-of-older-people-living-in-an-elderly-residential-h

9. Murtiyani N, Hartono A, Suidah H, Pangertika NP. Fungsi Kognitif Dengan Activities Of Daily Living (Adl) Pada Lansia. Proseding Seminar Nasional. 2018 [access: 10/12/2019];2017;235-48. Available from: https://pdfs.semanticscholar.org/c7cc/e40aadd6eb13aba5185e9d1b05f83b28abf6.pdf

10. Mongisidi R, Tumewah R, Kembuan MAHN. Profil Penurunan Fungsi Kognitif

Pada Lansia Di Yayasan-Yayasan Manula Di Kecamatan Kawangkoan. Jurnal Ilmu Kedokteran Klinis. 2018 [access: 10/12/2019];2013;1(1):3-6. Available from: https://ejournal.unsrat.ac.id/index.php/eclinic/article/view/3297

11. Stump TE, Callahan CM, Hendrie HC. Cognitive Impairment and Mortality in Older Primary Care Patients. Journal American Geriatri Society. 2018 [access: 10/12/2019];2001;49(07):934-40. Available from: https://www.ncbi.nlm.nih.gov/pubmed/11527485

12. Palestin B. Pengaruh Umur, Depresi dan Demensia Terhadap Disabilitas Fungsional Lansia di PSTW Abiyoso dan PSTW Budi Dharma Provinsi D.I. Yogyakarta (Adaptasi Model Sistem Neuman). Thesis, Univ Indones. 2018 [access: 10/12/2019]. Available from: http://eprints.poltekkesjogja.ac.id/79/1/Tesis %20Lengkap %20Bondan %20Palestin.pdf

13. Kathiravellu SCK. Hubungan Status Depresi terhadap Kualitas Hidup Lansia di Wilayah Kerja Puskesmas Petang II Kabupaten Badung Bali Tahun 2015. ISM. 2018 [access: 10/12/2019];2016;6(1):92-101. Available from: https://scholar.google.co.id/citations?user=sYwhb0kAAAAJ&hl=id#d=gs_md_cita-d&u=%2Fcitations_%3Fview_op%3Dview_citation%26hl%3Did%26user%3DsYwhb0kAAAAJ%26citation_for_view_%3DsYwhb0kAAAAJ_%3AisC4tDSrTZIC%26tzom%3D-420

14. Yusselda M, Wardani IY. Dampak dukungan keluarga terhadap kualitas hidup lansia. Jurnal Keperawatan. 2018 [access: 10/12/2019];2016;8(1):9-13. Available from: https://ejournal.bsi.ac.id/ejurnal/index.php/jk/article/view/2637

15. Silva PAB, Soares SM, Guimarães JF, Silva LB. Cut-off point for WHOQOL- bref as a measure of quality of life of older adults. Revista Saude Publica. 2018 [access: 10/12/2019];2014;48(3):390-7. Available from: https://www.ncbi.nlm.nih.gov/pubmed/25119934

16. Aini DN, Puspitasari W. Hubungan Fungsi Kognitif dengan Kualitas Hidup pada Lansia di Kelurahan Barusari Kecamatan Semarang Selatan. e-Journal UMM. 2018 [access: 10/12/2019];2016;7:6-12. Available from: https://media.neliti.com/media/publications/138111-ID-none.pdf

17. Sari MK. Peningkatan Kualitas Hidup Lansia Menggunakan Reminiscence Affirmative Therapy Berbasis Teori Lazarus. Jurnal Ners LENTERA. 2018 [access: 10/12/2019];2016;4(1):81-90. Available from: http://journal.wima.ac.id/index.php/NERS/article/view/872

18. Deharnita, Syahrun, Dahlia. Faktor-Faktor Yang Berhubungan Dengan Fungsi Kognitif

Pada Lansia. Menara Ilmu. 2018 [access: 10/12/2019];2016;X(73):177-84. Available from: https://jurnal.umsb.ac.id/index.php/menarailmu/article/download/62/44

19. Manav Aİ, Yeşilot SB, Demirci PY, Öztunç G. An evaluation of cognitive function, depression, and quality of life of elderly people living in a nursing home. Journal Psychiatric Nursing. 2018 [access: 10/12/2019];2018;9(3):153-60. Available from: https://pdfs.semanticscholar.org/dcf9/a575975dac80fcc705bba52435e0f71048ad.pdf

20. Maryati H, Bhakti DS, Dwiningtias M. Gambaran Fungsi Kognitif Pada Lansia Di Upt Panti Werdha Mojopahit Kabupaten Mojokerto. Jounal Metabolisme. 2018 [access: 10/12/2019];2013;2(2):1-6. Available from: http://repository.unmuhjember.ac.id/861/1/ARTIKEL.pdf

21. Puspadewi AAAR, Rekawati E. Depresi Berhubungan Dengan Kualitas Hidup Lansia Di Panti Sosial Tresna Werdha Di Jakarta Pendahuluan Metode. Jurnal Keperawatan Indonesia. 2018 [access: 10/12/2019];2017;20(3):133-8. Available from: http://jki.ui.ac.id/index.php/jki/article/view/636

22. Olsen C, Pedersen I, Bergland A, Jøranson N, Calogiuri G, Ihlebæk C. Differences in quality of life in home- dwelling persons and nursing home residents with dementia – a cross-sectional study. BMC Geriatric. 2018 [access: 10/12/2019];16(1432):1-11. Available from: https://www.ncbi.nlm.nih.gov/pubmed/27400744

23. Susanto T, Widayati N. Quality of life of elderly tobacco farmers in the perspective of agricultural nursing: a qualitative study. Working with Older People. 2018 [access: 10/12/2019]. Available from: https://www.emeraldinsight.com/doi/10.1108/WWOP-01-2018-0002

24. Farzianpour F, Foroushani AR, Badakhshan A, Gholipour M. Quality of Life for Elderly Residents in Nursing Homes. Global Journal Health Sciences. 2018 [access: 10/12/2019];2016;8(4):127-35. Available from: https://www.ncbi.nlm.nih.gov/pubmed/26573052

25. Oliveira LF, Malagoni L, Cavalcante A, Nunes MA, Brasil DP. Quality of life of elderly who participate in group health promotion. Enfermeria Clinicia. 2018 [access: 10/12/2019];2015;(Table 2):23-32. Available from: http://scielo.isciii.es/pdf/eg/v14n40/en_clinica1.pdf

26. Nikmat AW, Al-Mashoor SH, Hashim NA. Quality of life in people with cognitive impairment : Nursing homes versus home. International Psychogeriatic. 2018 [access: 10/12/2019]. Available from: https://www.ncbi.nlm.nih.gov/pubmed/25497589

27. Sarach Ö, Akca D, Atasoy N, Ö Ö, Ş Ö, Kaygis İ. The Relationship between Quality of

Life and Cognitive Functions , Anxiety and Depression among Hospitalized Elderly Patients. Clin Psychopharmalogy Neurosci. 2018 [access: 10/12/2019];2015;13(2):194-200. Available from: https://www.ncbi.nlm.nih.gov/pubmed/26243848

Conflict of interest

The author(s) declear no potensial conflicts of interest with respect to the research, authorship, and/or publication of this article.

Authors' contributions

Saputri ND: conceptualized research design, literature review, collecting data, and analyzed data, and writing manuscript.

Susanto T: analyzed data and writing manuscript,

Susumaningrum LA: developing measurement and writing manuscript.

All of authors approved for final manuscript for submission.