Journal of Advanced Multidisciplinary Research
Vol. 5, No. 1, 2024, pp. 36-45

ISSN: 2723-6978
http://jurnal.unissula.ac.id/index.php/JAMR
DOI: http://dx.doi.org/10.30659/JAMR.5.1.36-45

Physical and Psychological Health Problems in the Elderly

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Received:	Revised:	Accepted:	Published:
2 March 2024	30 May 2024	1 June 2024	31 July 2024

Abstract

Population Aging is a global phenomenon—almost every country in the world. With increasing age, there will also be an increase in various morbidity patterns in the elderly population. This study aims to determine the physical and psychological problems in the elderly and the factors related to the health problems of the elderly and appropriate interventions. The research method is descriptive with observational analytics using physical and psychological assessment tools. The measurement tools used were fall risk, cognitive impairment, sleep quality, insomnia, activities of daily living, joint pain, anxiety disorders and quality of life in the elderly. The number of respondents is 30 elderly who live in nursing homes and the technique used is interviews. The results of this study were 76.7% had a low risk of falling, 80% had no cognitive impairment, 73.33% had good sleep quality with a global value of 5.83, 46.67% had insomnia, 50% had anxiety disorders, 50% had independent activities, 66.67% had joint pain mild, and in general 83.33% quality of life is good. In conclusion, most of the respondents did not experience physical and psychological disorders, but most of the elderly experienced moderate joint pain and half of the respondents needed assistance to carry out their daily activities. Thus, it is necessary to have interventions that are in accordance with the needs of the elderly in nursing homes.

Keywords: *Elderly; physical assessment; psychological assessment*

INTRODUCTION

Population aging has become a global phenomenon. Almost every country in the world is experiencing a high increase in the elderly population. Globally, there were 727 million people aged 65 years or over in 2020. This number is projected to double to 1.5 billion in 2050. In addition, by 2050 it is predicted that there will be 33 countries where the number of elderly people will reach more than 10 million people. This proportion is projected to continue to increase to 16% in 2050. In Indonesia, the number of elderly people is estimated to reach almost one-fifth of the entire Indonesian population (Iverson & Dervan, 2021).

There are problems encountered in the elderly, including decreased physical health and disturbed psychological health in the form of decreased memory and chronic illnesses. In caring for the elderly, special attention and treatment is required which is a challenge for the family. This challenge is a problem in itself, therefore it is not uncommon for families to send elderly people to nursing homes so that the elderly are better looked after. Not a few elderly people who are sent to nursing homes think that they are useless and cause trouble to their families. This has

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an impact on the psychology of the elderly so that the quality of life of the elderly decreases (Arini et al., 2016). The main problem for the elderly is non-communicable diseases that occur due to degenerative processes. Functional status can be influenced by biological or physiological impairment and socioeconomic factors. Functional ability is the main indicator for elderly people to stay at home. Functional status has been used to describe motor function, the ability to perform activities of daily living (Manaf et al., 2016). Morbidity in the elderly is influenced by their physical function and psychological well-being. Many older adults have multiple disorders and comorbidities increase with age. Depression and general depressive symptoms in the elderly often occur and sometimes go undetected, resulting in the elderly slowing down their activities, being afraid, and feeling unhappy or lacking interest in activities. Depression tends to increase in number due to rapid social and physical changes and the environment which causes psychological stress as well as increased morbidity due to non-communicable chronic diseases (Gyawali et al., 2022).

All of the conditions above will cause changes in the quality of life. This is something that can be felt subjectively by someone in their life. In broader terms, this includes comprehensive physical health, psychological condition, level of independence, social relationships, personal beliefs, and relationships with the environment. The family has a role, especially at the beginning when depression and anxiety begin to be detected by assessing using screening tools in collaboration with doctors and in preventing anxiety and depression in the elderly (Journal & Jozef, 2017).

The most frequent impact on the elderly due to decreased body organ function is falls. More than 30% of people over 65 years old experience a fall every year and half of the cases are recurrent falls. About one in ten falls results in a serious injury such as a hip fracture, other bone fracture, subdural hematoma, or traumatic brain injury. Fifteen percent of falls are the result of external events or living environments that would cause most people to fall. A similar number of falls are caused by syncopal episodes or neurological disorders (e.g. epilepsy). As many as 70% of falls are caused by the interaction of various risk factors. Regardless of general health status, falls are associated with less mobility, decreased ability to perform activities (e.g. dressing, washing, and other household chores), most falls are caused by the association of so-called chronic and acute risk factors that an elderly person may have. In addition, the risk of falls increases as risk factors increase (Dionyssiotis, 2012). The aim of this research is to analyze problems in the elderly, namely sleep disorders, cognition, daily life activities, anxiety, quality of life, pain and the risk of falls in the elderly. From the results of this research, we can obtain an overview of specific interventions that can be given to the elderly to prevent morbidity in the elderly.

METHOD

The research design used in this study was observational analysis of the results of physical and psychological assessments of the elderly at the Pucang Gading Nursing Home, Semarang. The research was carried out in September – December 2022. The sample population was elderly people living in the Pucang Gading Nursing Home, Semarang. The sample is a total sampling of elderly people who meet the inclusion and exclusion criteria. The inclusion criteria are elderly people who can communicate and are able to mobilize in nursing homes with or without walking aids, while the exclusion criteria are elderly people who experience mental disorders as assessed using medical records at nursing homes and elderly people who are immobile.

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Instruments

The physical and psychological assessments carried out include:

- Fall risk assessment uses the Morse falls scale, values above 24 start to indicate a risk of falling
- Cognitive using the MMSE, samples with scores below 24 experienced cognitive impairment
- Sleep quality using PSQI samples with a value above 5 have poor sleep quality
- Insomnia using the Insomnia Rating Scale, samples that have a score of 8 and above have insomnia disorders
- ADL uses the KATz index for samples that have ADL disorders if they are unable to bathe and 1 other function
- Joint pain using the Numeric Rating Scale, samples with a value of 1 are those who are starting to experience pain
- Anxiety using the Hamilton Anxiety Rating Scale. Samples with a score of 14 and above are starting to experience anxiety
- Quality of Life using WHO QOL BREF samples that have a score below 51 are those who have a poor quality of life

This research has fulfilled the research ethics requirements of the Medical/Health Research Bioethics Commission, Faculty of Medicine, Universitas Islam Sultan Agung, Number No. 518/XII/2022/Bioethics Commission.

Procedures and data analysis

After an initial screening of the institution's medical records was carried out, inclusion and exclusion criteria were then screened. Elderly people who met the inclusion criteria were interviewed and made physical and functional observations using prepared instruments. Then the results of the assessment and interviews were analyzed using SPSS. Data analysis was carried out by calculating the average and interpreting it to describe characteristics, compare elderly groups and relate it to the research objectives.

RESULTS AND DISCUSSION

Panti Wredha Pucang Gading Semarang is a social service home under the auspices of the Central Java Provincial Social Service. This home is used to accommodate elderly people, especially elderly people who are neglected, live alone without family, and are less fortunate. Panti Wredha Pucang Gading Semarang has a number of activities to fill the routine of the elderly who live there. Every day the activities carried out are varied. The various activities carried out by the orphanage make the elderly feel like they are enjoying their lives more. The respondents studied in this research were elderly people in the independent category, namely a total of 50 elderly people. Then, after adjusting to the inclusion and exclusion criteria, there were 30 elderly people who became the research sample.

From the results of observations and interviews with 30 elderly people using the Morse fall scale form. Mini Mental State Examination, Pittsburgh Sleep Quality Index, Insomnia Rating Scale, KATz Index, HARS Hamilton Anxiety Rating Scale, pain scale Numeric Rating Scale and WHO QOL BREF obtained the following results: Most of the elderly aged between 60 - 69 years with gender the majority are women. With a distribution of 14 respondents, the majority were in the 60 - 69 year age group or 46.66% and the fewest were those over 80 years old, namely 4 people or 13.33%. The level of education found that the majority were not in school, 36.67% and the remaining 30% were elementary school and the remaining 30% were middle school and high school.

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The results of the assessment carried out to assess the risk of falls using the Morse Fall Scale, consists of 3 criteria and the majority of elderly people, 76.7%, have a mild risk of falling in the elderly when carrying out daily activities and 16.7% have a high risk of falling, so this group requires a walking aid. to carry out daily activities. The results of the Cognitive Function assessment in this study were measured using the Mini Mental State Examination (MMSE) Questionnaire. Furthermore, the results of the correct answers given by the respondent determine the level of the respondent's cognitive function which is grouped into 3 categories: 1) Normal, no cognitive impairment, 2) mild cognitive impairment and 3) severe cognitive impairment. From the assessment results, data was obtained that the majority of respondents did not experience cognitive impairment or 80% had normal cognitive impairment, 13.33% experienced mild cognitive impairment, and 6.67% experienced severe cognitive impairment.

Measurements regarding the Sleep Quality variable were measured using the Pittsburgh Sleep Quality Index (PSQI) questionnaire which consists of 21 questionnaire items in the form of questions that have an answer score of 0 - 3, a higher score indicates poor sleep quality. From the results of measuring insomnia using the Insomnia Rating Scale developed by the Jakarta Biological Psychiatric Study Group, it was found that the majority, 46.67%, experienced severe insomnia, 40% experienced moderate insomnia, and 13.33% experienced mild insomnia. Pain measurements using the Numeric Rating Scale showed that all samples experienced pain, 66.67% experienced mild pain, 20% experienced moderate pain, and 13.33% experienced severe pain.

Anxiety levels were assessed using the Hamilton Anxiety Rating Scale HARS which consists of 14 questions, and the results of observations obtained 4 levels of anxiety out of 5 HARS scores. Most of the elderly, 50%, did not experience anxiety when assessed using the HARS score, 30% experienced mild anxiety, 16.67% experienced moderate anxiety and 3.33% experienced severe anxiety. From the research data collection, it was found that 83.33% of respondents had a good quality of life, while 16.76% of respondents had a poor quality of life.

Table 1. Demographic data and assessment results

	Characteristics	N	%
Age	60 – 69	14	46.66
	70 – 79	12	40.00
	>80	4	13.33
Sex	Male	14	46.67
	Female	16	53.33
Education	Pre-school	9	30
	Elementary School	11	36.67
	Junior High School	3	10
	Senior High School	7	23.33
Fall Risk	No Risk	2	6.7
	Low Risk	23	76.7
	High Risk	5	16.7
MMSE	Normal	24	80
	Light	4	13.33
	Heavy	2	6.67
PSQI	Good	22	73.33
	Bad	8	26.67
Insomnia Degree	Mild Insomnia	4	13.33
	Moderate Insomnia	12	40
	Severe Insomnia	14	46.67
ADL (Index KATz)	Independent	15	50
	Mild Dependent	9	30

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	Moderate Dependent	6	20
	Severe Dependent	0	0
Pain	No Pain	0	0
	Mild Pain	25	66.67
	Moderate Pain	6	20
	Very Painful	4	13.33
Anxiety	No anxiety	15	50
	Mild anxiety	9	30
	Moderate anxiety	5	16.67
	Severe anxiety	1	3.33
	Very Severe Anxiety	0	0
Quality of Life	Good	25	83.33
	Poor	5	16.67

The elderly's Quality of Life score is measured using 4 aspects including physical, psychological, social relationships and environmental domains. Next, the four domains resulting from respondents' answers are added up to determine the level of quality of life which is categorized into 2 categories, namely Good Quality of Life and Poor Quality of Life.

Risk factors for falls include a history of falls, use of mobility aids, dangerous environments such as poor lighting, use of carpets, slippery floors and lots of items strewn on the floor, decreased health conditions such as muscle weakness, vertigo, balance problems, vision and hearing problems, cognitive and sensory disorders, orthostatic hypotension, diabetes mellitus, and osteoporosis. Several studies have also assessed that there is a link between the use of certain medications and an increased risk of falls in the elderly. In Suleiman et al.'s research, it was found that a number of respondents (368; 99.5%), lived with family (339; 91.6%), were women (256; 69.2%), married (240; 64.9%), Bachelor's education (110; 29.7%), and not working (154; 41.6%). Almost half of the participants (188; 50.8%) experienced a decline in their health condition in the past two years, and three-quarters (141; 75%) of them claimed that their illness was the cause of their fall. The results showed that female respondents aged 70 years and over were more likely to experience falls than men and younger people. Elderly respondents who did not regularly take medication did not experience falls, while those who regularly used 1-4 or more medications experienced a risk of falls (Gyawali et al., 2022).

Falling is an event that needs to be watched out for because of the possibility of fractures in the elderly. Geriatric fractures are of clinical and public health importance. Low bone mass is one of the main risk factors for geriatric fractures. The burden of geriatric fractures will grow as the elderly population increases. This important public health issue needs to be reviewed on an ongoing basis to identify possible changing trends in the incidence of these fractures so that preventive interventions can be planned appropriately. Lower trunk (hip, pelvic and lumbo sacral) fractures are the most common geriatric fractures followed by upper trunk (upper spine, clavicle and rib) and approximately half of geriatric fractures come to the ER requiring hospitalization and orthopedic intervention (Baidwan & Naranje, 2017).

The Mini-Mental State Examination (MMSE) 1 is one of the most widely used dementia screening instruments. In both clinical and research settings, this instrument is often used to measure cognitive changes over time in older adults. Detection of deterioration or improvement is essential for diagnosis and therapy. Progressive cognitive decline is a feature of the disease leading to dementia. Improvement in MMSE results is an indicator of a good response to therapy results (Hensel et al., 2007).

The results of Firmo's research (in Firmo & Lima-costa, 2020) show that respondents who experienced mild and moderate cognitive impairment as determined by a single screening

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using the MMSE obtained results that were not associated with the risk of mortality. However, this study found that gender had a moderate risk of mortality in the population studied, with men with moderate cognitive impairment having a significantly higher risk of mortality than women.

Previous research found that cognitive dysfunction is a central component of delirium, therefore it would be very interesting to study the usefulness of the MMSE as an instrument in screening for patients at risk of experiencing delirium. It can be concluded that the results of this study show that the recommended MMSE cut off value is 24, which can be used as a cognitive limit for an elderly person experiencing delirium. However, this score still needs to be followed up with other tests to diagnose the patient as having delirium (Ringdal, 2011).

Table 2. The Score of PSQI

PSQI	Average Score
Sleep Quality	1.13 ± 0.51
Sleep latency	0.96 ± 0.73
Sleep duration	1.06 ± 0.85
Sleep efficiency	0.90 ± 0.71
Sleep Disturbance	1.17 ± 0.38
Use of Sleep medication	0.10 ± 0.57
Daytime Dysfunction	0.53 ± 0.73
Total score	5.83 ± 2.33

The results of Sabanciogullari's research (in Azri et al., 2016) which compared the PSQI of elderly people living in institutions and those living in the community globally were more or less the same, for elderly people living at home, the average PSQI general score was 7.28 ± 3.97; subjective sleep quality, 1.10±0.87; sleep latency, 1.33±1.22; sleep disorders, 1.48 ± 0.65; use of sleeping medication, 0.26 ± 0.82; and daytime dysfunction, 0.66 ± 0.81 was 7.44±4.40; subjective sleep quality, 1.15±1.05; sleep latency, 1.69±1.11; ±1.35; sleep disturbance, 1.48±0.57; use of sleeping medication, 0.21±0.72; and daytime dysfunction, 0.53±0.89 at home and in nursing homes were at similar levels, and more than half of individuals in both groups had poor sleep quality. In Türkiye, the number of elderly people in the population is gradually increasing and as a result the problems of the elderly are also increasing. Elderly people need to have good quality sleep to maintain their quality of life.

Sleep is very important for humans because it helps the body to rest and repair and maintain the body's proper circadian rhythm. Sleep is very important because it is needed every day to restore energy for daily life. Thus, sleep is important to improve quality of life. Previous studies emphasize that sleep has a close correlation with quality of life. Lack of quality sleep will ultimately have an impact on energy, emotional balance, and health so that poor sleep quality and sleep disorders such as insomnia can reduce the quality of life. Sleep quality and quality of life decrease as a person ages. It is said that sleep is an indicator of quality of life. Based on previous literature, elderly people who live in institutions have poor sleep quality. Poor sleep quality is caused by the environment, pain, chronic disease and sleep disorders. Poor sleep quality contributes to a higher risk of heart disease, depression, falls and accidents. This effect will cause poor quality of life (Azri et al., 2016).

In line with research by Bonanni et al. (2010), almost half of the subjects (44.2%) experienced insomnia, while 23.1% reported at least one symptom of sleep disturbance, but did not meet the criteria for insomnia syndrome. The most common sleep complaint was waking up in the middle of the night (52.7%), while difficulty falling asleep, early waking up and non-restorative sleep were reported by 27.7%, 22.5% and 18.6% of subjects respectively. Nearly a

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third (33.4%) displayed only one nocturnal insomnia symptom, while 17.8% displayed two symptoms, 11.7% three symptoms and 43.3% four symptoms. Severe insomnia was reported by 11.6% of the population. Excessive daytime sleepiness was observed in 31.3% of our population, sleep snoring occurred in almost half of the subjects (47.2%) and sleep apnea in 8.0%; while 15.2% answered don't know to the snoring question and 29.6% to the question about sleep apnea.

In line with previous research which was assessed using the Barthel index, it was found that the majority of respondents, 38 (82.6%) were independent, where they could carry out daily physical activities themselves. Meanwhile, only 5 respondents (10.9%) needed minimal assistance during their physical activities and activities and 2 respondents (4.3%) were very dependent on ADL (Gyawali et al., 2022).

The distribution of each assessment item can be seen in Table 3.

Table 3. The Score of KATz Assessment

Assessment Item of KATz	Dependent	Independent
Bathing	26.66%	73.33%
Dressing	6.66%	93.33%
Toiletting	20%	80%
Transfering	50%	50%
Cintinence	10%	90%
Feeding	3.33%	96.66%

From the distribution per item of the KATz index, the data shows that the greatest dependency for daily activities is on transferring items, which means that the biggest disturbance in the elderly is related to mobilization when moving places or carrying out daily activities, so that elderly people who experience this need to be given assistive devices. walk with crutches or a walker. Transferring is related to the balance and walking patterns of the elderly, this condition is related to medical and other conditions. Medical conditions associated with gait and balance disorders can be caused by psychiatric disorders, cardiovascular diseases, infectious and metabolic diseases, musculoskeletal disorders, neurological disorders and sensory disorders. This can cause gait and balance disorders due to pain, dyspnea, imbalance, decreased strength, limited joint range of motion, poor posture, decreased sensory perception, fatigue, limb deformities, decreased consciousness. In addition, recent surgery or hospitalization and other acute disease conditions. The use of several drugs (four or more) at once in certain drug classes can cause gait disturbances and increase the risk of falls (Salzman, 2014).

Various mechanisms have been proposed to reduce pain in the elderly. The first mechanism is due to physiological changes in the elderly such as decreased levels of neurotransmitters such as gamma-aminobutyric acid (GABA), serotonin, noradrenaline, and acetylcholine, decreased number of peripheral nociceptive neurons, increased pain threshold, and reduced endogenous analgesic response resulting in increased pain. Another cause is homeostenosis in aging, namely the loss of homeostatic reserves of various organ systems which manifests as a decrease in liver and kidney function as well as a decrease in muscle mass and increased weakness which causes the risk of falls, decreased appetite, sleep disorders, depression, delirium, agitation and overall weakness. whole. Musculoskeletal disorders such as degenerative spine and rheumatic conditions are the most common causes of chronic pain in the elderly. Other common causes include neuropathic pain, ischemic pain, and pain due to cancer and its treatment. Elderly women often experience back pain due to vertebral compression fractures which cause pain and greatly interfere with ADL (Ali et al., 2018).

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Mallon et al's research obtained general and demographic characteristics of respondents grouped based on four pain categories. The dominant female gender in this study was (67.5%). Sixty-three percent of participants reported mild to severe pain of which 37.5% were men and 65.7% women. Thirty-seven percent of participants reported no pain. Results of analysis of the home situation of respondents who used caregivers showed the lowest prevalence of pain (54.2%) followed by nursing home residents (60%) and participants living at home without nursing support (61.7%). The highest prevalence of pain was reported by participants who lived at home with a caregiver (75.2%). Furthermore, 39% of the sample reported moderate pain and 19% severe pain. On the other hand, participants who live at home without a caregiver and suffer from mild pain category (29.4%) (Baidwan & Naranje, 2017).

Many epidemiological surveys show that pain is most common in the middle age phase (55-65 years) and persists in older ages (65+). Regardless of the anatomic location of the cause of pain, pain is associated with degenerative joint processes (eg, osteoarthritis). Daily pain is a major risk factor for disability in the elderly age group. Physical activity appears to be most affected, there is a significant relationship with the risk of depression and mood disorders in elderly people who experience persistent pain (Vink et al., 2008).

Generalized anxiety disorder most often occurs in the elderly, this disorder is characterized by extraordinary and excessive worry, associated with feelings of restlessness, feeling tense, tense muscles and reactive behavior due to trying to reduce feelings of worry or emotional distress. The prevalence varies around 7.3% in elderly people living in the community. These disorders have important negative impacts resulting in high levels of chronic psychological suffering and impairing quality of life and professional and personal performance. In the research, data was obtained that the prevalence of anxiety disorders was high among elderly respondents. Nevertheless, this disorder is often underdiagnosed and undertreated in primary health care. This epidemiological data was obtained from the Family Health Strategy to improve health care for the elderly group (Menta et al., 2020). Early detection and treatment helps reduce symptoms, improve quality of life, and prevent a less favorable prognosis (Vink et al., 2008).

Anxiety has been linked to dysregulation and inflammation of the hypothalamic-pituitary-adrenal axis, and this can lead to poor health. A recent study of hospitalized patients showed that people with anxiety disorders had more comorbid physical conditions compared with people without anxiety disorders. On the other hand, anxiety can also arise as a result of previous illness, and illness can exacerbate anxiety; The possibility of a bidirectional relationship between anxiety and physical health needs to be considered. Strong evidence from prospective studies suggests that anxiety may increase the risk of serious chronic conditions such as cancer and coronary heart disease (Remes et al., 2018).

In the research, it was found that 83.33% of respondents had a good quality of life, while 16.76% of respondents had a poor quality of life. The distribution of each domain is explained in table 4.

Table 4. The Distribution of Domains

Domain	Raw score	Transformation	Criteria
Physique	22	56	Good
Psychological	21	63	Good
Social Interation	11	44	Fair
Surroundings	23	50	Fair

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Health status is defined as 'a state of good physical, mental and social well-being' and not simply the absence of physical illness or physical weakness. Elderly health is determined by lifestyle, exposure to health care and opportunities to obtain health protection. Prolonged illness and disability due to chronic diseases and the aging process can significantly reduce the quality of life in the elderly. Social relationships are also a factor that can influence quality of life. Social relationships are a form of social support and family support. It is important to build healthy social relationships to maintain good physical and mental health. Bad social relationships will cause withdrawal from society, so that the elderly become lonely and depressed (Azri et al., 2016).

In the distribution of each domain, it was found that social and environmental relations were in the adequate quality of life category, while the physical and psychological domains according to respondents were in the good quality of life category. In contrast to previous researchers, it is important to find the causes of elderly QOL and its determining factors. In this study, data was obtained that the worst QOL in the domains of past, present, and future physical activity as well as in social participation, negative predictors of QOL in this study were depression, anxiety, physical disability, poly-morbidity, and living alone because a partner had died. The results of this research show that it is necessary to create opportunities for the formation of social relationships, the implementation of various recreational activities, and the involvement of the elderly in social programs in society (Journal & Jozef, 2017).

Previous research found that limitations in physical activity that occur in the elderly, the presence of chronic diseases and advanced age do not always mean a decline in quality of life. The benefits of old age can be contributing factors, such as social integration, optimism, self-confidence and the desire to live a fulfilling life (Hudakova & Hornakova, 2011).

CONCLUSION

In general, the results of the assessment of the elderly at the Pucang Gading Nursing Home showed a low risk of falls, cognitive function was still good, sleep quality was good, but globally the sleep quality was poor and the majority experienced insomnia. Daily activities are still independent and experience mild joint pain when carrying out daily activities. Most of them do not have anxiety disorders. In general, the quality of life for elderly people living at the Pucang Gading Nursing Home has a good quality of life. The results of this assessment provide an overview that can be used by relevant agencies in providing interventions so that elderly people can maintain their quality of life and can fill their lives with positive things. It is necessary to provide intervention in the form of walking aids to reduce the risk of falls and to reduce pain when carrying out daily activities independently. It is necessary to carry out regular monitoring, especially regarding sleep disorders and insomnia to maintain optimal health.

ACKNOWLEDGEMENTS

Thanks are addressed to (1) LPPM Sultan Agung Islamic University, (2) the Dean of the Faculty of Medicine, Sultan Agung Islamic University, and (3) the elderly who live in the Pucang Gading Nursing Home, Semarang and all parties who have contributed to this research.

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