Quality of life for elderly: development of questionnaire and pilot project

Anny Rosiana Masithoh[1], Rusli bin Nordin[2], Vetriselvan Subramaniyan[3], Amalia Rahmawati[4]

[1] Department of Nursing, Universitas Muhammadiyah Kudus, Indonesia

[2] Department of of Nursing, Mahsa University Malaysia

[3] Pharmacology Unit Jeffrey Cheah School of Medicine and Health Sciences Monah University Malaysia

[4] Department of Nursing, Universitas Muhammadiyah Kudus

Abstract

Identifying the quality of life for elderly is needed to know the degree of healthy, comfortable, and enjoy the life for elderly. Those things become the crucial one for medical professional to take quality of life to give each patients' treatment goals and use them as a guidance for all care decisions. This study aims to develop the questionnaire of the quality of life for elderly in nursing home. There are 30 respondents who live in the nursing home central java province, Indonesia as the sample in this pilot project research. The sampling has criteria, such as willing to be respondents, have been living in nursing home minimum 1 year, do not have verbal, hearing, and vision impairment, and able to communicate well. The instrument used are analysis documents of the result of questionnaire, expert validator sheet and back translation sheet. The questionnaire comes from SF-36 questionnaire then translated and developed based on the Indonesian condition. This research used 7 steps for conducting the research that consist of review literature, focused group discussion and in-dept interview, item

generation and translation, item formatting, preliminary questionnaire, and pilot testing. The result of the test is the score of validity and reliability of the questionnaire. the validity test was done by using Pearson product moment with The P.value is less than 0.05. Moreover, the result of coefficient Cronbach's Alpha is 0,986 that means it is more than 0,6. Therefore it can be concluded that the questionnaire was reliable.

1. Introduction

Ageing population becomes the demographic phenomena that cannot be ignored. Nowadays, ageing population happens in every country where the elderly population has experienced very drastic increase. This phenomenon is influenced by several aspects, such as decreasing infant mortality rates, improving access to education facilities, increasing job vacancies, increasing gender equality, intensifying reproductive health programs, and the better health facilities.

WHO (2022) estimated that at least 1 in 6 people in the world will be 60 years or older in 2030. The portion of people aged 60 years old will increase from 1 billion in 2020 to 1.4 billion in 2022. Moreover, the population aged 60 years old and over in the world will double (2.1 billion) by 2050 and the portion of elderlies aged more than 80 years old also increased from 2020 to 2050 estimated that it will increase threefold to reach 426 million) (Zapata-lamana et al., 2022). Changes that occur in the elderly include physical changes, mental changes, psychosocial changes, spiritual changes. This will result in organ weakness, physical decline, the emergence of various kinds of diseases, especially degenerative diseases that will affect the quality of life of the elderly. Furthermore, demographic transition can cause epidemiological transition. In elderly, diseases especially noncommunicable/ degenerative diseases will mostly occur than the communicable diseases. The quality-of-life elderly is considered as an individual's subject perception to their position in life which not only associated with diseases but also measurement of diseases impacts towards the QoL in the daily activities (Abbasi-ghahramanloo et al., 2020).

Quality of life itself is influenced by independence, physical and psychological conditions, social activity, social interaction, nutritional status, physical activity, and family function(Punta et al., 2019). Therefore, quality of life is an important indicator for assessing

the success of health care interventions, both in terms of prevention and treatment. The dimension of quality of life includes not only the physical dimension, but also includes performance in playing social roles, emotional states, intellectual and cognitive functions as well as feelings of health and life satisfaction (Santisi et al., 2020).

Based on the results of basic Indonesian health research the percentage of the population stating a good quality of life in the age group less than 64 years is 72.2%, while in the age group more than 64 years only 24.5% is left. The percentage of the population stating a good quality of life based on gender, 2 out of 3 residents stated that they were in good condition in the past month, the male population was slightly higher (71.296) than the female population (65.3%) (Idaiani & Indrawati, 2021)

In Indonesia, the measurement of QoL has not been widely studied (Ayu Komalawati & Jaebin, 2020).Considering the raised institutionalization rates, nursing homes should provide good quality of life for their residents. Thereby, worse QoL was observed in elderly residents of long-term care institutions, in com- parison with community-dwelling individuals (De Medeiros et al., 2020)

To measure the quality-of-life elderly, questionnaire is used. There are several types of questionnaire to measure the QoL of elderly, they are WHOQOL-100, WHOQOL-BRREF, EQ-5D-3L scale, and SF-36 (Santhalingam et al., 2021; Song & Lee, 2021; Lim & Kua, 2011; Zhang et al., 2022;(Goes et al., 2021)). Measuring the questionnaire is used to know the QoL and also the polity outcome. Although using an existing questionnaire will save the time and resources, a questionnaire that measures the construct of interest may not be readily available, or the published questionnaire is not available in the language required for the targeted respondents. Therefore, developing questionnaire by translating, developing and validating questionnaire are needed to get the data and information as in-depth evaluation material.

This paper aims to develop the quality of life questionnaire with several steps to find out the complete item quesionnaire that needs by the elderly.
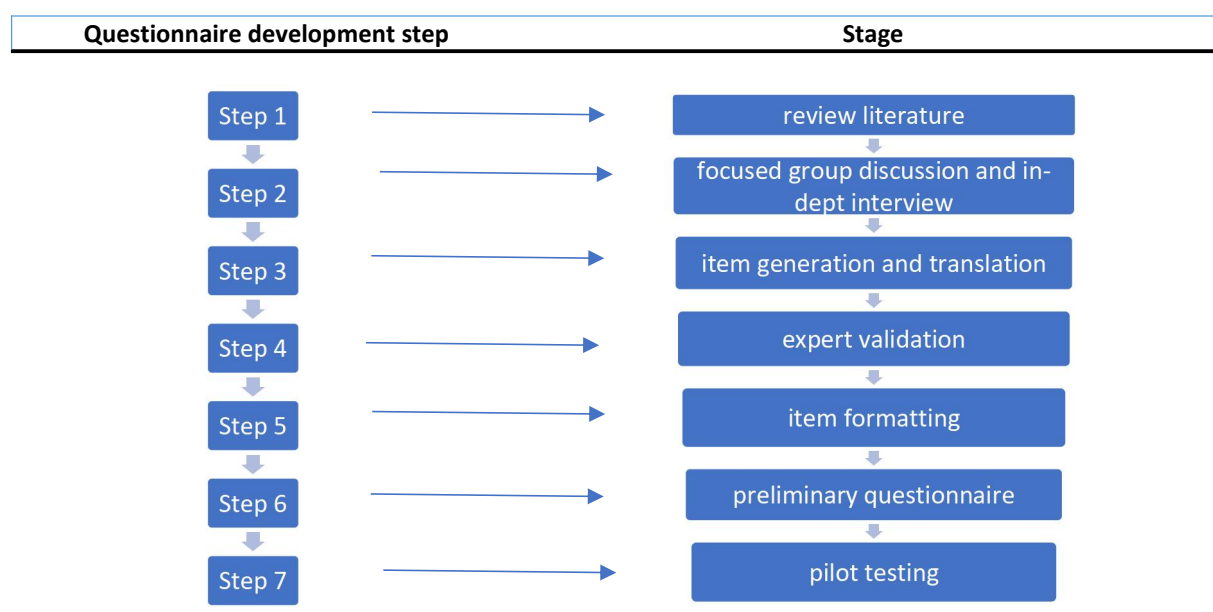

2. Materials and Methods

This research was done in the nursing home of the central java province with six public nursing homes. The population of the research are all of the elderlies who live in the nursing home, central java province Indonesia. There are 30 respondents as the sample used for pilot

project. The research done on January 2023-January 2024. The sampling has criteria, such as willing to be respondents, have been living in nursing home minimum 1 year, do not have verbal, hearing, and vision impairment, and able to communicate well. The instrument used are analysis documents of the result of questionnaire, expert validator sheet and back translation sheet. The questionnaire comes from SF-36 questionnaire then translated and developed based on the Indonesian condition. This research used 8 steps for conducting the research that consist of review literature, focused group discussion and in-dept interview, item generation and translation, item formatting, preliminary questionnaire, validation and pilot testing (figure 1).

The first step is reviewed literature. In this step, the comprehensive literature review was done by using the search engine PubMed, science direct and Google Scholar. MeSH terms used are :"survey and questionnaires", "developing and validating questionnaire", "quality of life", and "elderly". The relevant paper will be selected and identified from them as the data. The second step is focused group discussion and in-dept interview. In this step, there are five participants by investigators: professor, associate professors and care givers. The result of this step is the combination between the SF 36 questionnaire and WHOQOL BRIEF questionnaire then adopt based on the Indonesian situation. The third is item generation and translation step. In this step, the selection of the questionnaire is based on the items that best capture the latent feature. The other word, this step means the questionnaire draft. Then, the questionnaire is translated into Bahasa. In the translation step, there were three experts committee. They use forward and backward translation techniques. The fourth step is item formatting. This step is a crucial to arrange and also reword the questionnaire for eliminating, technical jargon, ambiguity and loading. Avoid asking negative, lengthy, or double-barreled questions. Arrange the items in a methodical manner to create a draft questionnaire. The fifth is preliminary questionnaire. In this step, the questionnaire is reread again, and check the compelling, non-technical, check the scale's response categories, the scoring format, and the reason(s) for choosing the expert. The last step is pilot testing. The draft of questionnaire was pre-tested in 30 participants from diverse socialeconomic backgrounds.

Figure 1 Step of developing questionnaire

Questionnaire development step	Stage

- Step 1 → review literature
- Step 2 → focused group discussion and in-dept interview
- Step 3 → item generation and translation
- Step 4 → expert validation
- Step 5 → item formatting
- Step 6 → preliminary questionnaire
- Step 7 → pilot testing

3. Discussion

This research has 30 elderlies as the respondent of the research. The respondents must fulfil the criteria of the research. Before taking the data, demographic data is needed to create a deep analysis. In this respondents' data, it describes sex, educational background, occupational background, age, income, long of stay in nursing home and the reason to stay in nursing home.

Table 1 Demographic data

No	Variables	Total	Percentage
		Gender	
1	Male	9	30 %
2	Female	21	70 %
		Age (year)	
1	60-69	25	83%
2	70-79	5	17%
3	>80	0	0%
		Duration stay at Nursing Home (year)	
1	2	6	20%
2	3	2	6%
3	4	8	27%
4	5	14	47%
		Past Occupational status	
1	Housewife	12	40%
2	Self Employed	13	44%
3	Pensioner	5	16%
		Educational Background	
1	Uneducated	5	17%
2	Primary School	15	50%

No	Variables	Total	Percentage
3	Secondary school	7	23%
4	High school	3	10%
	Income		
1	Pension	5	17%
2	None	25	83%
	Reason stay at nursing home		
1	Reference from other nursing home/ village	21	70%
2	Because of children	9	30%

Based on table 1, it found that 70% of respondents or 21 respondents in pilot testing are female because they are poor educated, live alone, and they are not young again with limitations. Moreover, this finding is in line with Reilev et al., (2019), that most of the majority in nursing home is female that indicates the life expectancy of female elderly is higher than male. In the term of age, 83% of respondents are 60-69 years old. Most of the patients in the nursing home are women, because most of them do not have relatives anymore (Kofi et al., 2023). The high percentage of women because of several reasons, such as longer life expectancy, marital status, gender roles, health condition and economic limitation. In general, women have a longer life expectancy than men. This means that more women are reaching old age, and thus, more of them may require nursing home care (Id et al., 2020). Second, marital status. Many elderly women lose their partners early because their husbands tend to die sooner. The loss of this partner often makes them more socially and economically vulnerable, which can cause them to turn to nursing homes for support and care (Ngamaba et al., 2023). Third, gender roles in the family. In many cultures, women are often the primary caregivers for older family members. However, when they themselves grow old and there are no family members who can care for them, they are more likely to end up in nursing homes (Dinale, 2024). Fourth is health condition. Women are more likely to experience chronic health conditions that require long-term treatment. Nursing homes often provide necessary medical care (Shao et al., 2022). The last is economic limitation. Elderly women may have financial limitations for various reasons, such as a lack of a long history of paid work or lower pensions, which makes it difficult for them to obtain home care (Bloomberg et al., 2021).

Living in the nursing home is the best choice for them. Most of the elderly live in the nursing home more than 5 years. Most of the elderly stay at nursing home start 60 years old. Based on this research, 44% of respondents are as the self employed before they stay at nursing home. They worked in the informal working situation especially in the small business, without a

clear distinction between labor and business capital as a factor of production, workers are mostly irregular workers or families, employer-worker relationships are usually family relationships, and not legal entities. Those conditions affected with several reason, one of them is education. Most of them, their educational background is primary school. The educational background also will affect the income of the elderly (Irigoyen-camacho et al., 2020). There are several factors that unfluence the education level such as access to the education, economic condition and social and cultural norms. For the limited access to the education, the elderly who grew up in areas with limited access to education or in times where education was not prioritized tend to have lower levels of education. For the economic conditions, financial limitations often force many seniors to end their education early to help meet family needs. The last is social and cultural norms, in some societies, formal education especially for women may not have been prioritized in the past, which affected the educational level of elderly women living in nursing homes (Hu et al., 2021).

Majority elderly in the nursing home do not have income. Based on the research, there are 83% respondents do not have income, and only 17% respondents have pension. The elderly who still have income have higher educational background than the elderly who do not have income. The income of the elderly come from the pension when the worked (Luo et al., 2022). Because they have low educational background and low economic status, most of the elderly live in the nursing home. They do not have relatives again to care and treatment them at home In developing the questionnaire, there are seven steps. In this first stage, the review literature was done by analyze the search engine PubMed, science direct and Google scholar. MeSH terms used are :"questionnaires", "developing and validating questionnaire", "quality of life", and "elderly". The relevant paper will be selected and identified from them as the data.

The questionnaire was SF 36 questionnaire with 36 questions, then developed into 46 questions. The questions developed based on the search engine, and based on the focus group discussion. The group discussion was done with 4 nursing lecturer, 1 professor and 3 nursing home officers. The result of the developed domain can be seen in table below:

Table 2 Development Domain for SF 36 Questionnaire
based on Focused Group Discussion and In-Dept Interview Step

NO	Domain in SF 36 Questionnaire	Developed domain
1	General health (6 questions)	Using original question
2	Physical functioning (11 questions)	Physical functioning (11 questions)
		The items were developed based on Indonesian conditions.
3	Role physical (4 questions)	The items were developed based on Indonesian conditions.
4	Role emotional (3 questions)	Using original question from SF 36 questionnaire

NO	Domain in SF 36 Questionnaire	Developed domain
5	Social Functions (2 questions)	Using original question SF 36 questionnaire
6	Body pain (2 questions)	Using original question SF 36 questionnaire
7	Vitality (9 questions)	Using original question SF 36 questionnaire
8	–	Psychology (5 questions) from WHOQOLBRIEF
9	–	Personal life (2 questions) from WHOQOLBRIEF
10	–	Environment (3 questions) from WHOQOLBRIEF

Based on table 2, it can be seen that there are ten domains used in the developed questionnaire. As the explanation before that the developed questionnaire comes from SF 36 questionnaire and WHOQOLBRIEF questionnaire. The SF 36 questionnaire consist of seven domains such as general health, physical functioning, role physical, role emotional, social functions, body pain, and vitality (Lin et al., 2020) and developed by adding the questionnaire from WHOQOL BRIEF. Then, the questionnaire was adopted with regulation of health ministry Indonesia and indonesian condition like in table 2.

Table 3 Item generation of the questionnaire

NO	DOMAIN	ORIGINAL QUESTIONS	DEVELOPED QUESTIONS
1	Physical questioning	Vigorous activities, such as running, lifting heavy objects, participating in strenuous sports.	Running, lifting heavy objects, and participating in strenuous sports are not common in Indonesia and it is based on health ministry in Indonesia. Therefore, it can be changed into brisk walking, hill climb, jogging, hoeing, moving stones, digging gutters, carrying children, playing with active children, sports (tennis, football, basketball)
		Moderate activities, such as moving table, pushing a vacuum cleaner, bowling or playing golf.	Those activities are inappropriate with Indonesian condition and regulation. Based on Health Ministry Indonesia, the moderate activities are brisk walking, moving home furniture, gardening, planting trees, washing cars, cleaning lawns, sports (badminton, table tennis, cycling, volleyball)
		Walking more than a mile	In Indonesia, blocks is inappropriate. It can be changes into 1,6 km.
		Walking several blocks	In Indonesia, blocks is inappropriate. Usually, we use allay as the Indonesian condition
		Walking one block	In Indonesia, blocks is inappropriate. Usually, we use

NO	DOMAIN	ORIGINAL QUESTIONS	DEVELOPED QUESTIONS
			allay as the Indonesian condition
2	Personal life	I am satisfyed with my life	Adding the domain for psychology based on analyzing questionnaire in WHOQOL
		I have enough money to meet my needs	
3	Psychology	I enjoy my life	Adding the domain for psychology based on analyzing questionnaire in WHOQOL
		I feel like my life matters	
		I can accept the condition of my body now	
		I have a new hobby/ new partner/ challenge/ new task	
		I am able to make decisions for myself, such as choosing meals, choosing activities,	
4	Environtment	I am satisfied with the conditions where I live	Adding the domain for psychology based on analyzing questionnaire in WHOQOL
		I am satisfied with my access to healthcare	
		I am satisfied with my transportation (check transport at nursing home)	

Based on the table 3, there are four domains that must be adopted based on WHOQoL-BREF and Indonesian condition. In the first domain, physical questioning, the original question from SF 36 is the examples of vigorous activities are running, lifting heavy objects, participating in strenuous sports. Those examples are not appropriate with the regulation from Indonesia. In Indonesia, the examples of vigorous activities are running, lifting heavy objects, and participating in strenuous sports are not common in Indonesia and it is based on health ministry in Indonesia. Therefore, it can be changed into brisk walking, hill climb, jogging, hoeing, moving stones, digging gutters, carrying children, playing with active children, sports (tennis, football, basketball) (Nisa, 2023). Moreover, the moderate activities also adopted based on the regulation form ministry of health Republic of Indonesia. Based on the original questionnaire from SF 36, the activities belong to moderate activities are moving table, pushing a vacuum cleaner, bowling or playing golf. Those activities are not appropriate with Indonesian condition and also regulation. Based on the ministry of health Republic of Indonesia, the activities belongs to the moderate activities are brisk walking, moving home

furniture, gardening, planting trees, washing cars, cleaning lawns, sports (badminton, table tennis, cycling, volleyball) (Bai et al., 2022). Third, in term of mile. In Indonesia, people are familiar with kilometres. Fourth, the term of blocks. Usually people in Indonesia use complex than block. The next domain is personal life, psychology and environment domain. Those domains are adopted from WHOQOLBRIEF questionnaire.

The next step is translation. In this research, there are two translators who help in translating into Bahasa. They are from master of English program as the background of education, and they taught English for nursing more than 8 years. The initial translation should be independently back-translated (i.e., translate back from the target language into the original language) to ensure the accuracy of the translation. Misunderstandings or unclear wordings in the initial translations may be revealed in the back-translation. As with the forward translation, the backward translation should be performed by at least two independent translators, preferably translating into their mother language (the original language). To avoid bias, back-translators should preferably not be aware of the intended concepts the questionnaire measures. Based on table 4, the are six words that need to discussed because they have differences in translation. The differences meaning in translation depends on the translator's ability and also it will wun every process. The translation also relates to the cultures therefore it can procduce the readable and understandable target text (Kardiansyah & Salam, 2020)

Table 4 Differences in translation

No	Original Word	Translator 1	Translator 2	Result
1	Excellent	*Sangat baik*	*Sangat baik*	*Sangat baik*
2	Very good	*Baik*	*Baik*	*Baik*
3	Good	*Cukup*	*Cukup*	*Cukup*
4	Fair	*Kurang baik*	*Kurang baik*	*Kurang*
5	Poor	*Miskin*	*Jelek*	*Sangat kiurang*
6	Exhausted	*Lelah*	*Lelah*	*Sangat Lelah*

The fourth and fifth step, the questionnaire is reread again before it has been implemented. The total of questions are 46 that has been proceeded with 7 steps. The questionnaire has been implemented in pilot project with 30 respondents. Validity test can be done by using Pearson product moment. To know the item was valid or not, testing to know the correlation each item is needed by using P.value. The P.value is less than 0.05 can be called valid, and r-measure and p.value is higher than 0,05 can be called drop that means cannot used as the question in questionnaire. The result of 46 questions in quality of life questionnaire are valid. To know

the detailed data of the questionnaire can be seen in table 5. Based on the table below, most of the mean of the questions are 63% of respondents has not good in their quality of life.

Table 5 Questionnaire analysis

NO	Code	Question	Mean	Median	Mode	Correlation	Corrected Item–Total Correlation	Cronbach's Alpha if Item Deleted
1	Q01	In general, would you say your health is:	48	50	25	0.777	0,768	0,986
2	Q02	Compared to one year ago, how would you rate your health in general now?	60	50	75	0.421	0,407	0,986
3	Q03	Vigorous activities, such as running, jogging, participating in strenuous sports (tennis, football, basketball).	42	50	50	0.430	0,416	0,986
4	Q04	Moderate activities, such as moving a table, pushing a vacuum cleaner, walking fast, gardening, planting trees, washing cars, doing sports (badminton, cycling, volleyball)	60	50	50	0.775	0,762	0,986
5	Q05	Lifting or carrying groceries	67	50	100	0.815	0,804	0,986
6	Q06	Climbing several flights of stairs	58	50	50	0.826	0,816	0,986
7	Q07	Climbing one flight of stairs	70	50	50	0.787	0,778	0,986
8	Q08	Bending, kneeling, or stooping	67	50	50	0.828	0,818	0,986
9	Q09	Walking more than a mile/ 1,6 km	55	50	50	0.846	0,836	0,986
10	Q10	Walking several complexs	55	50	50	0.846	0,836	0,986
11	Q11	Walking one complex	83	100	100	0.765	0,755	0,986
12	Q12	Bathing or dressing yourself	83	100	100	0.765	0,755	0,986
13	Q13	Cut down the amount of time you	63	100	100	0.825	0,810	0,986

NO	Code	Question	Mean	Median	Mode	Correlation	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
		spent on work or other activities						
14	Q14	Accomplished less than you would like	63	100	100	0.825	0,810	0,986
15	Q15	Were limited in the kind of work or other activities	63	100	100	0.825	0,810	0,986
16	Q16	Had difficulty performing the work or other activities (for example, it took extra effort like the elderly with knee joint problem, they have to climb)	63	100	100	0.825	0,810	0,986
17	Q17	Cut down the amount of time you spent on work or other activities	63	100	100	0.825	0,810	0,986
18	Q18	Accomplished less than you would like	63	100	100	0.825	0,810	0,986
19	Q19	Didn't do work or other activities as carefully as usual	80	100	100	0.695	0,674	0,986
20	Q20	Emotional problems interfered with your normal social activities with family, friends, neighbors, or groups?	46	50	25	0.906	0,901	0,985
21	Q21	How much bodily pain have you had during the past 4 weeks?	45	40	20	0.851	0,844	0,986
22	Q22	During the past 4 weeks, how much did pain interfere with your normal work (including both work outside the home and housework)?	46	50	25	0.906	0,901	0,985
23	Q23	Did you feel full of pep?	50	60	60	0.663	0,651	0,986
24	Q24	Have you been a very nervous person?	57	60	40	0.872	0,868	0,986

NO	Code	Question	Mean	Median	Mode	Correlation	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
25	Q25	Have you felt so down in the dumps that nothing could cheer you up?	55	60	40	0.918	0,915	0,986
26	Q26	Have you felt calm and peaceful?	57	60	40	0.899	0,895	0,986
27	Q27	Did you have a lot of energy?	57	60	40	0.899	0,895	0,986
28	Q28	Have you felt downhearted and blue?	55	60	40	0.865	0,861	0,986
29	Q29	Did you feel worn out?	55	60	40	0. 865	0,861	0,986
30	Q30	Have you been a happy person?	50	60	60	0. 663	0,651	0,986
31	Q31	Did you feel tired?	57	60	40	0.872	0,868	0,986
32	Q32	During the past 4 weeks, how much of the time has your physical health or emotional problems interfered with your social activities (like visiting with friends, relatives, etc.)?	54	50	50	0.845	0,840	0,986
33	Q33	I seem to get sick a little easier than other people	54	50	50	0.845	0,840	0,986
34	Q34	I am as healthy as anybody I know	46	50	25	0.906	0,901	0,985
35	Q35	I expect my health to get worse	54	50	50	0.845	0,840	0,986
36	Q36	My health is excellent	46	50	25	0.906	0,901	0,985
37	Q37	I enjoy my life	46	50	25	0.906	0,901	0,985
38	Q38	I feel like my life matters	46	50	25	0.906	0,901	0,985
39	Q39	I can accept the condition of my body now	46	50	25	0.906	0,901	0,985
40	Q40	I have a new hobby/ new partner/ challenge/ new task	46	50	25	0.906	0,901	0,985
41	Q41	I am able to make decisions for myself, such as choosing meals, choosing	46	50	25	0.906	0,901	0,985

NO	Code	Question	Mean	Median	Mode	Correlation	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
		activities,						
42	Q42	I am satisfied with my life	46	50	25	0.906	0,901	0,985
43	Q43	I have enough money to meet my needs	46	50	25	0.906	0,901	0,985
44	Q44	I am satisfied with the conditions where I live	46	50	25	0.906	0,901	0,985
45	Q45	I am satisfied with my access to healthcare	46	50	25	0.906	0,901	0,985
46	Q46	I am satisfied with my transportation	46	50	25	0.906	0,901	0,985

Moreover, for the reliability test, it can show the consistency and the stability of the instrument. The reliability of instrument can be analyzed by using reliability with Cronbach alpha. If the coefficient of Cronbach Alpha is more than 0,6 means that the instrument is reliable.

Table 6 The Result of Reliability Test

Coefficient Cronbach's Alpha	Result
.986	Reliable

Based on table 6, it can be seen that the result of coefficient Cronbach's Alpha is 0,986 that means it is more than 0,6. Therefore it can be concluded that the questionnaire was reliable. This study was aimed to develop a valid questionnaire in order to measure the effectives of quality of life questionnaire. The original questionnaire was systematically developed and translated into Indonesian language. Hence, the result of the study showed that the development questionnaire is effective to measure the quality of life in elderly who live in nursing home.

This questionnaire development study was conducted in nursing home Central Java Province, Indonesia and has several limitations. Data were collected during the day in different nursing home with different characteristic of respondents. Furthermore, the questionnaire was not validated against any clinical measurement. Likewise, this sample size is not credible enough

to proceed with construct validity; thus, confirmatory factor analysis is another recommended future strategy.

4. Conclusions

The developed questionnaire for this research which focused on the pilot study was valid and reliable instrument to measure the quality of life for elderly in nursing home. This questionnaire has ten domains that can measure deeply the condition of elderly. Moreover, this questionnaire can help the government and healthcare professionals to improve general public health and wellbeing. In conclusion, this study shows encouraging findings, and generates testimony of robust assemblage of conceptually standardized elements.

Acknowledgment

Ethical considerations

The research was conducted with Ethical Clearance by Mahsa University, Malaysia number RMC/EC59/2022

Conflict of Interest

The authors declare no conflics of interest

Funding

References

[1] Abbasi-ghahramanloo, A., Soltani-kermanshahi, M., Khazaei-pool, M., Sohrabi, M., Reza, H., Talebloo, Z., Gholami, A., & Talebloo, Z. (2020). Comparison of SF-36 and WHOQoL-BREF in Measuring Quality of Life in Patients with Type 2 Comparison of SF-36 and WHOQoL-BREF in Measuring Quality of Life in Patients with Type 2 Diabetes. *International Journal of General Medicine*, *13*, 497–506.

https://doi.org/10.2147/IJGM.S258953

[2] Ayu Komalawati, R., & Jaebin, L. (2020). *Reality of Compact development in a developing country: focusing on perceived quality of life in Jakarta, Indonesia.* https://doi.org/https://doi.org/10.1080/12265934.2020.1803106

[3] Bai, X., Soh, K. G., Dev, R., Dev, O., Talib, O., & Xiao, W. (2022). *Effect of Brisk Walking on Health-Related Physical Fitness Balance and Life Satisfaction Among the Elderly : A Systematic Review. 9*(January). https://doi.org/10.3389/fpubh.2021.829367

[4] Bloomberg, M., Dugravot, A., Landré, B., Britton, A., Steptoe, A., Singh-manoux, A., & Sabia, S. (2021). *Articles Sex differences in functional limitations and the role of socioeconomic factors : a multi-cohort analysis.* 780–790. https://doi.org/10.1016/S2666-7568(21)00249-X

[5] De Medeiros, M. M. D., Carletti, T. M., Magno, M. B., Maia, L. C., Cavalcanti, Y. W., & Rodrigues-Garcia, R. C. M. (2020). Does the institutionalization influence elderly's quality of life? A systematic review and meta-analysis. *BMC Geriatrics, 20*(1), 1–25. https://doi.org/10.1186/s12877-020-1452-0

[6] Dinale, D. (2024). *The positive relationship between female employment and fertility rates : The role of family bene fi ts expenditure and gender-role ideologies. 0*(0), 1–15. https://doi.org/10.1177/09589287241252008

[7] Goes, M., Lopes, M., Marôco, J., Oliveira, H., & Fonseca, C. (2021). Psychometric properties of the WHOQOL - BREF (PT) in a sample of elderly citizens. *Health and Quality of Life Outcomes*, 1–12. https://doi.org/10.1186/s12955-021-01783-z

[8] Hidayati, A. R., Gondodiputro, S., & Rahmiati, L. (2018). Elderly Profile of Quality of Life Using WHOQOL-BREF Indonesian Version: A Community-Dwelling. *Althea Medical Journal, 5*(2), 105–110. https://doi.org/10.15850/amj.v5n2.1417

[9] Hu, D., Zhou, S., & Crowley-mchattan, Z. J. (2021). *Factors That Influence Participation in Physical Activity in School-Aged Children and Adolescents : A Systematic Review from the Social Ecological Model Perspective.*

[10] Id, X. M., Lera, L., & Albala, C. (2020). *Disability-free life expectancy and life expectancy in good self-rated health in Chile : Gender differences and compression of morbidity between 2009 and 2016.* 1–12. https://doi.org/10.1371/journal.pone.0232445

[11] Idaiani, S., & Indrawati, L. (2021). Functional status in relation to depression among

elderly individuals in Indonesia : a cross- sectional analysis of the Indonesian National Health Survey 2018 among elderly individuals. *BMC Public Health*, 1–9. https://doi.org/10.1186/s12889-021-12260-z

[12] Irigoyen-camacho, M. E., Velazquez-alva, M. C., Zepeda-zepeda, M. A., Cabrer-rosales, M. F., Lazarevich, I., & Castaño-seiquer, A. (2020). *Effect of Income Level and Perception of Susceptibility and Severity of COVID-19 on Stay-at-Home Preventive Behavior in a Group of Older Adults in Mexico City. February 2020.* https://doi.org/10.3390/ijerph17207418

[13] Kardiansyah, M. Y., & Salam, A. (2020). The Translator ' s Strategy as a Cultural Mediator in Translating Indonesian Novel into English A Case Study On " Jatisaba ." *Atlantis Press*, *509*(Icollite), 413–418. https://doi.org/10.2991/assehr.k.201215.065

[14] Kofi, F., Abu, A., & Gazi, I. (2023). Psychological Adjustment and Guidance for Ageing Urban Women. *Ageing International*, *48*(1), 222–230. https://doi.org/10.1007/s12126-021-09467-1

[15] Lim, L. L., & Kua, E. H. (2011). Living alone, loneliness, and psychological well-being of older persons in Singapore. *Current Gerontology and Geriatrics Research*, *2011*. https://doi.org/10.1155/2011/673181

[16] Lin, Y., Yu, Y., Zeng, J., Zhao, X., & Wan, C. (2020). Comparing the reliability and validity of the SF - 36 and SF - 12 in measuring quality of life among adolescents in China : a large sample cross - sectional study. *Health and Quality of Life Outcomes*, 1–14. https://doi.org/10.1186/s12955-020-01605-8

[17] Luo, Y., Wu, X., Liao, L., Zou, H., & Zhang, L. (2022). Children's Filial Piety Changes Life Satisfaction of the Left-Behind Elderly in Rural Areas in China? *International Journal of Environmental Research and Public Health*, *19*(8). https://doi.org/10.3390/ijerph19084658

[18] Ngamaba, K. H., Kandala, N., Batuyekula, F., & Mupolo, P. K. (2023). *Are Men ' s Happiness and Life Satisfaction Linked to Why Men Die Earlier Than Women ? A Panel Study from 1981 to 2020 in 102 Countries*. *3*(1), 14–33.

[19] Nisa, H. (2023). *Obesity and Asthma Risk in Indonesian Adults : Findings from the 2018 Indonesia Basic Health Research*. *18*(5), 58–64. https://doi.org/10.21109/kesmas.v18i1.6608

[20] Punta, P., Somrongthong, R., & Kumar, R. (2019). Factors influencing quality of life (QOL) amongst elderly caregivers of people living with HIV/AIDS in Phayao province, Thailand: A cross-sectional study [version 1; peer review: 2 approved]. *F1000Research*, *8*, 1–11. https://doi.org/10.12688/f1000research.16892.1

[21] Reilev, M., Lundby, C., Jensen, J., Larsen, S. P., Hoffmann, H., & Pottegård, A. (2019). *Morbidity and mortality among older people admitted to nursing home. November*, 67–73. https://doi.org/10.1093/ageing/afz136

[22] Santhalingam, S., Sivagurunathan, S., Prathapan, S., Kanagasabai, S., & Kamalarupan, L. (2021). The association of health-related factors with quality of life among the elderly population in the Jaffna district of Sri Lanka. *BMC Public Health*, *21*(1), 1–10. https://doi.org/10.1186/s12889-021-10507-3

[23] Santisi, G., Lodi, E., Magnano, P., Zarbo, R., & Zammitti, A. (2020). *Relationship between Psychological Capital and Quality of Life : The Role of Courage*. 1–14.

[24] Shao, M., Chen, J., & Ma, C. (2022). *Research on the Relationship between Chinese Elderly Health Status , Social Security , and Depression*.

[25] Song, J., & Lee, E. (2021). Health-related quality of life of elderly women with fall experiences. *International Journal of Environmental Research and Public Health*, *18*(15). https://doi.org/10.3390/ijerph18157804

[26] Zapata-lamana, R., Poblete-valderrama, F., Ledezma-dames, A., Pav, P., Mar, A., & Cigarroa, I. (2022). *Health , Functional Ability , and Environmental Quality as Predictors of Life Satisfaction in Physically Active Older Adults*.

[27] Zhang, M., Zhu, W., He, X., Liu, Y., Sun, Q., & Ding, H. (2022). Correlation between functional disability and quality of life among rural elderly in Anhui province, China: a cross-sectional study. *BMC Public Health*, *22*(1), 1–12. https://doi.org/10.1186/s12889-021-12363-7