



Measurement of Quality of Life in Outpatient Hypertension Patients Utilizing the EQ-5D-5L Method at a Hospital in Bandung

Oskar Skarayadi¹, Muhammad Didit Prasodjo², Afifah B Sutjiatmo³

Pharmacy Faculty, Universitas Jenderal Achmad Yani, Jl. Terusan Jend. Sudirman, Cimahi, 40513, Indonesia

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ABSTRACT

The prevalence rate of hypertension continues to increase every year. Strategies are needed to help health professionals and the public discover the tendency of hypertension as early as possible. Measuring quality of life is one way to discover the description of the patient's condition. It can help health workers and the public prevent and treat hypertension. One of the questionnaires to assess the quality of life is the European Quality of Life - 5 Dimensions- 5 Level (EQ-5D-5L) form issued by EuroQol. This questionnaire consists of questions and a visual analog scale (VAS). The research was conducted on August 27, 2018 - September 14, 2018. Using the EQ-5D-5L questionnaire, the self-care aspect (SC) is the dimension that is least affected by the patient's hypertension, with a percentage of 6%. The pain or discomfort dimension (PD) is the most affected, with a percentage of 54%, where 12 people (36%) do not have problematic dimensions, so the index value is 1. Measurements with VAS show that most patients have a VAS value of 90 55. % with an average value of 70.

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Corresponding Author:

Oskar Skarayadi,
Pharmacy Faculty,
Universitas Jenderal Achmad Yani,
Jl. Terusan Jend. Sudirman, Cimahi City, 40513, Jawa Barat Province, Indonesia
Email : oskar.skarayadi@lecture.unjani.ac.id

1. Introduction

Hypertension is a prevalent medical condition that requires immediate global intervention. It appears to be a major factor in the risk of chronic diseases, including cardiovascular disease, stroke, arrhythmias, heart failure, and kidney disease. (Adamu et al., 2022). Globally, the prevalence of hypertension is increasing due to population aging and increased exposure to lifestyle risk factors, such as unhealthy diets (high sodium and low potassium intake) and lack of physical activity.³ However, global variations in the prevalence of hypertension are not uniform. In the preceding two decades, the prevalence of hypertension decreased modestly in high-income countries (HICs), whereas it increased significantly in low- and middle-income countries (LMICs). (Mills et al., 2021). The prevalence rate of hypertension among the Indonesian population is 34.11% (Astutik et al., 2020). The incidence of hypertension in West Java is slightly greater than the national average (39.60% in 2018), positioning West Java as the second most affected province in Indonesia in terms of hypertension prevalence (Prihartono et al., 2022).

The primary objective of hypertension treatment is to reduce long-term cardiovascular risk. Recent research has focused on the quality of life of hypertensive patients to enhance daily functioning, minimize physical and psychological suffering, and enable entire family and social participation. Because hypertension is a risk factor for cardiovascular disease, it substantially impacts the physical, social, and psychological domains that determine overall well-being and patient status. These two factors are strongly associated with other chronic diseases, such as diabetes and kidney disease (Khoirunnisa & Akhmad, 2019).

Patients with complications of hypertension have low scores on the Bulpitt and Fletcher Questionnaire and S.F- 36, particularly in the domains of physical function, discomfort, and vitality (Khoirunnisa & Akhmad, 2019). Measuring the patient's quality of life is valuable for healthcare practitioners and the wider population to get insight into the patient's state, intending to prevent and manage hypertension. (Hamida et al., 2019). Previous research with Eq-5D-5 has indicated that individuals diagnosed with hypertension have a worse quality of life across all areas compared to those who do not have this medical disease. (Adamu et al., 2022).

Measuring the patient's quality of life is valuable for healthcare practitioners and the wider population to get insight into the patient's state, intending to prevent and manage hypertension. (Hamida et al., 2019). The EQ-5D-5L is an instrument used to assess the quality of life within the European context. The mentioned instrument is a widely utilized generic tool for assessing the overall health state, gaining international recognition and acceptance. (Hamida et al., 2019).

Based on this context, evaluating the health status of hypertensive patients requires measuring the quality of life, particularly factors related to therapy for hypertensive patients that can affect the quality of life. The rising number of hypertensive patients in the province of Jawa Barat makes this study essential for improving treatment management and the quality of life of hypertensive patients. The HRQOL study utilizing the EQ-5D-5L questionnaire remained limited (S. Sari et al., 2020). At the time of conducting this study, there was no research examining the assessment of the quality of life among hypertension patients utilizing the EQ-5D-5L methodology at Dr. Hasan Sadikin Bandung. This study aims to assess patients' quality of life at the Kidney Hypertension Polyclinic at the Outpatient Installation of Dr. Hasan Sadikin Bandung, utilizing the EQ-5D-5L method.

2. Method

The research methodology used for this study is a descriptive approach utilizing a cross-sectional study design. The research used the European Quality of Life 5-Dimension-5 Level (EQ-5D-5L) questionnaire along with the Indonesian value set (Yusransyah et al., 2020). The method used to conduct subject research involved applying the non-probability sampling method, precisely the accidental sampling technique. This approach involved selecting respondents based on their availability or compatibility with the research inclusion criteria. The participants of this study consisted exclusively of individuals diagnosed with *Essential primary Hypertension* who received outpatient treatment at the RSUP Dr. Hasan Sadikin Bandung Hypertension Kidney Polyclinic within the Outpatient Installation. Inclusion criteria included patients with a primary diagnosis of essential primary hypertension within the age range of 30–80 years. Exclusion criteria included patients with essential primary hypertension outside the age range, those with hypertension other than primary hypertension, and those with hypertension who did not complete the EQ-5D-5L questionnaire.

This research was conducted after obtaining ethical approval from the Health Research Ethics Committee of RSUP, Dr. Hasan Sadikin Bandung, with the number LB.04.01/A05/EC/106/IV/2018. Patients who have declared themselves willing to be research respondents by filling out informed consent are then explained how to fill out the questionnaire. One researcher measured quality of life. Although the EQ-5D-5L questionnaire is designed to be done by the patient alone and is short enough to use compared to other measurements, if the patient's level of education is low enough or the patient's condition does not allow for self-administration, the questionnaire is carried out with assistance. Data was collected using a questionnaire, then scoring was carried out for the EQ-5D-5L and Visual Analogue Scale (VAS) questionnaires.

There are five question dimensions, each with three scores or values on the EQ-5D questionnaire. This questionnaire has a scale of 0-1, where a value of 0 is death and a value of 1 is perfect health. The closer the value is to 0, the better the quality of life, and vice versa. If it is closer to 1, the better the quality of life. The EQ5D score obtained is then converted into the EQ-5D index using the EQ-5D index calculator. The VAS is a linear scale ranging from 0 to 100, where 0 is the worst state of health, and 100 is the best. The resulting VAS score is then analyzed by determining the mean, median, and standard deviation. A descriptive analysis was used to describe the characteristics of the hypertensive patients involved in this study.

3. Results and Analysis

A total of 33 patients who fulfilled the inclusion criteria were diagnosed with Essential Primary Hypertension and visited the outpatient hypertension kidney polyclinic at RSUP Dr. Hasan Sadikin Bandung. Table 1 presents the demographic information of the patients included in this study.

Table 1.
Patients Demographic Data

	Variable	N	%
Sex	Men	28	82
	Laki-laki	6	18
Age	31-40	2	6
	41-50	8	24
	51-60	13	13
	61-70	8	8
	71-80	3	3
Occupation	Housewife	15	44
	Retired	4	12
	Private Worker	6	6
	Government Worker	9	9

Sociodemographic factors can impact the quality of life of hypertensive adults and older people. (Chantakeeree et al., 2022). In this study, 82 percent of the participants were female, and 18 percent were male. This is consistent with previous research by Khoirunnisa & Akhmad (2019), where women dominate the hypertension patient population. It is also known that most participants in this study (39%) are between the ages of 51 and 60, contrary to previous research by (Khoirunnisa & Akhmad, 2019) where the majority of patients are over the age of 60, where blood pressure rises with age, and where hypertension most commonly affects the elderly (Khoirunnisa & Akhmad, 2019; Kurtul et al., 2020; Yusransyah et al., 2020). The quality of life in older adults diagnosed with hypertension is comparatively lower than that of individuals in good health. Furthermore, it has been recognized that a decline in quality of life is a notable manifestation of the disease. (Gu et al., 2019; Heidari et al., 2019).

Most patients at RSHS are mainly involved in household tasks, with approximately 42% being housewives, in line with research by a Khoirunnisa & Akhmad (2019). The aetiology of hypertension involves various risk factors, including age, geographic factors, genetics, socio-economic status, ethnicity, and diet and nutrition. Occupational factors are recognised as significant risk factors for hypertension. The occurrence of hypertension has been observed to differ across different occupational categories (Kurtul et al., 2020).

Based on the results of interviews with patients using the first section of the EQ-5D-5L questionnaire, data on the percentage of patient responses to each problem dimension are provided in Table 2 below.

Table 2.
Results of the EQ-5D-5L Questionnaire

Dimension	% Value				
	1	2	3	4	5
MO	82	9	9	0.00	0.00
SC	94	6	0.00	0.00	0.00
UA	79	21	0.00	0.00	0.00
PD	45	45	6	3	0.00
AD	79	15	3	3	0.00

MO : Mobility

SC : Self-Care

UA : Usual Activities

PD : Pain or Discomfort

AD : Anxiety or Depression

1. : No

2. : Light

3. : Moderate

4. : Severe

5. : Unable

According to the data presented in Table 2, the aspect of self-care (SC) shows the least susceptibility to the impact of the disease experienced by patients, with a percentage of around 6%. Conversely, pain or discomfort (PD) becomes the aspect most affected by hypertension among patients, accounting for 54%. The data on the proportion of patient replies to each dimension of the problem were derived from interviews conducted with patients utilizing the initial section of the EQ-5D-5L questionnaire. This fact aligns with the findings of the previous study by Hamida dkk (2019), where the dimension most significantly impacted by the patient's hypertension state is the component of pain or discomfort. The pain was more prevalent in hypertensive older Americans (Li et al., 2022). The discomfort experienced can be attributed to the adverse effects of hypertension. Mobility and usual activities significantly correlated with age (Alshammari et al., 2021). The value of the health condition index (utility) is listed in Table 3.

Table 3.
Distribution of Index Values

Index	Problem Dimension	N (33)	%
0.265	MO, SC, UA, PD, AD	1	3%
0.522	MO, SC, UA, PD, AD	1	3%
0.626	MO, UA, PD, D	1	3%
0.632	MO, UA, PD	1	3%
0.661	MO, PD, D	1	3%
0.745	UA, PD, AD	2	6%
0.808	MO	1	3%
0.824	UA, PD	1	3%
0.905	PD	1	3%
0.914	PD	9	27%
0.921	AD	2	6%
1	No Problem	12	36%
Total		33	100%

Table 3 illustrates that the majority proportion of patients in this study, precisely 12 individuals (36%), were assigned a value of 1. This finding matches the study conducted by Sari et al. (2017), in which the highest proportion of patients (22.4%) were assigned a value of 1. The median value of the VAS measurement results in the current research was 70, which is lower than-average VAS median in Indonesia. The score was 77,2 (Yao et al., 2019). Based on the results of interviews using the second section of the EQ-5D questionnaire, Table 4 presents the EQ-5D VAS values.

Table 4.
Distribution of VAS Values

Value	N	%
70	2	6%
75	1	3%
80	10	30%
85	2	6%
90	18	55%
Total	33	100%

Table 4 illustrates that most patients, specifically 18 individuals (55%), exhibit the highest Visual Analog Scale (VAS) values compared to patients with alternative VAS values. These 18 patients account for 55% of the entire patient population. Consequently, the VAS values of these patients surpass the median quality of life for individuals with hypertension. This finding aligns with the research conducted by Sari et al. (2017), which reported that 70% of patients possessed values that exceeded the median quality of life.

4. Conclusion

In the measurement with the EQ5D-5L questionnaire, the self-care aspect (SC) is the dimension that is least affected by hypertension in patients with hypertension, with a percentage of about 6%, and pain or discomfort (PD) is the dimension that is most affected by hypertension in hypertensive patients, with a percentage of a total of 54%, where 12 individuals (36%) did not experience problems. Hence, it had an index value of 1. Most patients with a VAS value 90 were 55%, with a median value of 70, as determined by VAS measurements. Further research is needed to compare essential hypertension and hypertension with comorbidity. Comparing it with another method, like SF6D, should be conducted. Further research is needed to compare essential hypertension and hypertension with comorbidity in several health facilities. Comparing it with another method, like SF6D, should be conducted.

References

- Adamu, K., Feleke, A., Muche, A., Yasin, T., Mekonen, A. M., Chane, M. G., Eshete, S., Mohammed, A., Endawkie, A., & Fentaw, Z. (2022). Health related quality of life among adult hypertensive patients on treatment in Dessie City, Northeast Ethiopia. *PLoS ONE*, 17(9 September), 1–14. <https://doi.org/10.1371/journal.pone.0268150>
- Alshammari, S. A., Alajmi, A. N., Albarrak, R. A., Alaqil, A. B., Alsaheed, G. K., Alzayed, M. Z., Alajami, H. N., Baqar, J. B., & Ali, S. (2021). Quality of Life and Awareness of Hypertension Among Hypertensive Patients in Saudi Arabia. *Cureus*, 13(5). <https://doi.org/10.7759/cureus.14879>
- Astutik, E., Puspikawati, S. I., Dewi, D. M. S. K., Mandagi, A. M., & Sebayang, S. K. (2020). Prevalence and Risk Factors of High Blood Pressure among Adults in Banyuwangi Coastal Communities, Indonesia. *Ethiopian Journal of Health Sciences*, 30(6), 941–950. <https://doi.org/10.4314/ejhs.v30i6.12>
- Chantakeeree, C., Sormunen, M., Estola, M., Jullamate, P., & Turunen, H. (2022). Factors Affecting Quality of Life among Older Adults with Hypertension in Urban and Rural Areas in Thailand: A Cross-Sectional Study. *International Journal of Aging and Human Development*, 95(2), 222–244. <https://doi.org/10.1177/00914150211050880>
- Gu, R., Zhang, D., Jin, X., Wu, W., Hou, Y., Wu, Q., & Wang, X. (2019). The self-perceptions of aging were an important factor associated with the quality of life in Chinese elderly with hypertension. *Psychogeriatrics*, 19(4), 391–398. <https://doi.org/10.1111/psyg.12400>
- Hamida, N., Ulfa, M., Haris, R. N. H., Endarti, D., & Wiedyaningsih, C. (2019). Pengukuran Kualitas Hidup Pasien Program Pengelolaan Penyakit Kronis (Prolanis) di Puskesmas Menggunakan Instrumen EQ-5D-5L. *Majalah Farmaseutik*, 15(2), 67. <https://doi.org/10.22146/farmaseutik.v15i2.46328>
- Heidari, M., Sheikhi, R. A., Rezaei, P., & Kabirian Abyaneh, S. (2019). Comparing Quality of Life of Elderly Menopause Living in Urban and Rural Areas. *Journal of Menopausal Medicine*, 25(1), 28. <https://doi.org/10.6118/jmm.2019.25.1.28>

- Khoirunnisa, S. M., & Akhmad, A. D. (2019). Quality of life of patients with hypertension in primary health care in Bandar Lampung. *Indonesian Journal of Pharmacy*, 30(4), 309–315. <https://doi.org/10.14499/indonesianjpharm30iss4pp309>
- Kurtul, S., Ak, F. K., & Türk, M. (2020). The prevalence of hypertension and influencing factors among the employees of a university hospital. *African Health Sciences*, 20(4), 1725–1733. <https://doi.org/10.4314/ahs.v20i4.24>
- Li, C. Y., Lin, W. C., Lu, C. Y., Chung, Y. S., & Cheng, Y. C. (2022). Prevalence of pain in community-dwelling older adults with hypertension in the United States. *Scientific Reports*, 12(1), 1–10. <https://doi.org/10.1038/s41598-022-12331-0>
- Mills, K. T., Stefanescu, A., & He, J. (2021). The global epidemiology of hypertension Katherine. *Physiol. Behav.*, 16(4), 139–148. <https://doi.org/doi:10.1038/s41581-019-0244-2>
- Prihartono, N. A., Fitria, L., Ramdhan, D. H., Fitriyani, F., Fauzia, S., & Woskie, S. (2022). Determinants of Hypertension amongst Rice Farmers in West Java, Indonesia. *International Journal of Environmental Research and Public Health*, 19(3). <https://doi.org/10.3390/ijerph19031152>
- Sari, A., Lolita, & Fauzia. (2017). Pengukuran Kualitas Hidup Pasien Hipertensi di Puskesmas Mergangsan Yogyakarta Menggunakan European Quality Of Life 5 Dimensions (EQ5D) Questionnaire dan Visual Analog Scale (VAS). *Jurnal Ilmiah Ibnu Sina*, 2(1), 1–12.
- Sari, S., Andayani, T. M., Endarti, D., & Widayati, K. (2020). Health-related quality of life in non-small cell lung cancer (Nslc) patients with mutation of epidermal growth factor receptor (egfr) in indonesia. *Research Journal of Pharmacy and Technology*, 13(1), 443–447. <https://doi.org/10.5958/0974-360X.2020.00086.4>
- Yao, Q., Liu, C., Zhang, Y., & Xu, L. (2019). Health-related quality of life of people with self-reported hypertension: A national cross-sectional survey in China. *International Journal of Environmental Research and Public Health*, 16(10), 1–24. <https://doi.org/10.3390/ijerph16101721>
- Yusransyah, Halimah, E., & Suwantika, A. A. (2020). Measurement of the quality of life of prolanis hypertension patients in sixteen primary healthcare centers in Pandeglang District, Banten Province, Indonesia, using EQ-5D-5L instrument. *Patient Preference and Adherence*, 14, 1103–1109. <https://doi.org/10.2147/PPA.S249085>