

Association Between the Frequency of Chronic Disease Management Program (Prolanis) Visits and Blood Pressure Control Among Older Adults with Hypertension at Karangmoncol Public Health Center in 2026

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Abstract

Hypertension is a non-communicable disease commonly affecting older adults and may increase the risk of complications including stroke, heart disease, and kidney failure, even blood pressure is not well controlled. One strategy to manage hypertension is through the Chronic Disease Management Program (Prolanis). However, the frequency of participant's visits to Prolanis varies, which may influence blood pressure control. This study aimed to determine the relationship between the frequency of visits to the Chronic Disease Management Program (Prolanis) and blood pressure control among elderly patients with hypertension at Puskesmas Karangmoncol in 2026. This study used an analytic quantitative design with a cross-sectional approach involving of 43 respondents selected using the total sampling technique. Data were analyzed using univariate and bivariate analyses with Fisher's Exact Test. Results: A total of 41 respondents (95,35%) regularly attended Prolanis, while 2 respondents (4,64%) did not. controlled blood pressure was found in 14 respondents (32,56%) whereas 29 respondents (67,44%) had uncontrolled blood pressure. The Fisher's Exact Test showed a p-value of 1,000 ($p > 0.05$), indicating no significant relationship between Prolanis visits and blood pressure control. Prolanis visit frequency was not significantly associated with blood pressure control among elderly patients with hypertension.

Keywords: Hypertension, Elderly, Prolanis, Visit Frequency, Blood Pressure Control.

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A. INTRODUCTION

Hypertension is one of the major non-communicable diseases characterized by elevated systolic blood pressure of ≥ 140 mmHg and/or diastolic blood pressure of ≥ 90 mmHg. Hypertension often does not cause specific symptoms, resulting in many individuals being unaware of their condition; therefore, it is commonly referred to as a "silent killer." If inadequately controlled, hypertension can increase the risk of cardiovascular disease, stroke, kidney failure, and other complications (WHO, 2023). Globally, hypertension remains a major public health concern. The WHO (2023) reported that approximately 1.28 billion adults aged 30–79 years worldwide have hypertension. A substantial proportion of individuals with hypertension are unaware of their condition or have not received adequate treatment and blood pressure control, resulting in a continued high risk of cardiovascular disease, stroke, and kidney disorders (WHO, 2023).

In Indonesia, hypertension remains a significant health problem requiring continued attention. According to the 2023 Indonesian Health Survey (Survei Kesehatan Indonesia/SKI), hypertension remains prevalent among adults. The risk of hypertension also increases among older adults due to various physiological changes associated with the aging process. Therefore, older adults require regular health monitoring and blood pressure control (Ministry of Health of the Republic of Indonesia, 2023b). Hypertension is also a significant health problem in Purbalingga Regency. According to the 2022 Purbalingga Regency Health Profile, the estimated number of individuals aged ≥ 15 years with hypertension reached 280,867, while 118,120 individuals (42.1%) had received health services according to established standards. These data indicate that hypertension remains a health problem requiring continuous prevention, treatment, and disease management efforts (Purbalingga District Health Office, 2022).

One of the primary healthcare facilities implementing the Chronic Disease Management Program (*Program Pengelolaan Penyakit Kronis/Prolanis*) is Karangmoncol Public Health Center. According to data from Karangmoncol Public Health Center in 2025, there were 267 registered participants with hypertension who received health monitoring through services provided by the health center. These data indicate that hypertension is a considerable health problem in the Karangmoncol Public Health Center service area (Karangmoncol Public Health Center, 2025). Prolanis records from Karangmoncol Public Health Center in 2025 also showed that participants with hypertension were enrolled in several Prolanis groups, with varying attendance frequencies despite the regular implementation of the program. Differences in visit frequency are important to consider because regular participation in Prolanis provides opportunities for participants to receive health monitoring, education, consultation, and continuous management of hypertension (Karangmoncol Public Health Center, 2025; Afkarina, 2023).

Prolanis is a healthcare program designed for participants with chronic diseases, including hypertension. Its activities include medical consultations, health examinations, health education, physical activity, and periodic health monitoring. These activities aim to support the management of chronic diseases and reduce the risk of complications (BPJS Kesehatan, 2024). Regular participation in Prolanis provides patients with opportunities to receive routine health monitoring, education, consultation, and treatment evaluation, which theoretically may support blood pressure control among individuals with hypertension. However, blood pressure control is not determined solely by participation in Prolanis but is also influenced by various other factors, including medication adherence, dietary patterns, physical activity, stress levels, age, and comorbidities (BPJS Kesehatan, 2024).

Previous studies have reported an association between active participation in Prolanis and blood pressure status among individuals with hypertension. Afkarina (2023) reported that patients with hypertension who actively participated in Prolanis tended to have more stable blood pressure. Similarly, Nurpuspitasari (2024) found that active participation in Prolanis was associated with greater consistency in blood

pressure among patients with hypertension. Husna, (2024) also reported an association between attendance at health activities and blood pressure among older adults with hypertension. However, different findings were reported by Maris et al. (2026) who found a p-value of 0.087 ($p > 0.05$), indicating no significant association between active participation in Prolanis and blood pressure status among patients with hypertension at Oesapa Public Health Center, Kupang City. These differences in findings indicate that the relationship between participation in Prolanis and blood pressure control requires further investigation across different populations and healthcare settings.

Based on a review of previous studies, no study has specifically examined the relationship between the frequency of Prolanis visits and blood pressure control among older adults with hypertension at Karangmoncol Public Health Center. Previous studies have primarily examined active participation in Prolanis or attendance at health activities in relation to blood pressure, whereas the present study focuses specifically on the frequency of Prolanis visits as the independent variable and older adults with hypertension as the study population. Differences in research settings and participant characteristics may also contribute to variations in findings compared with previous studies. Therefore, this study aims to analyze the relationship between the frequency of visits to the Chronic Disease Management Program (Prolanis) and blood pressure control among older adults with hypertension at Karangmoncol Public Health Center in 2026. The findings are expected to provide useful information for evaluating healthcare services, improving regular participation of older adults in Prolanis activities, and supporting efforts to control blood pressure among individuals with hypertension.

B. METHODS

This study employed a quantitative approach with an analytical *cross-sectional* design to examine the relationship between the frequency of visits to the Chronic Disease Management Program (*Program Pengelolaan Penyakit Kronis/Prolanis*) and blood pressure control among older adults with hypertension (Sugiyono, 2016).. The study used secondary data obtained from Prolanis registers and medical records at Karangmoncol Public Health Center for the period from January to June 2026 (Sari & Legiran, 2024).

The study was conducted at Karangmoncol Public Health Center, Purbalingga Regency, on June 10, 2026. The study population consisted of 267 registered Prolanis participants with hypertension. A total sampling technique was used, with the inclusion criteria of participants aged ≥ 60 years, diagnosed with hypertension, registered as Prolanis participants, having six months of visit records, and willing to participate in the study. Of the 60 participants who attended the Prolanis activity, 17 were aged < 60 years and therefore did not meet the inclusion criteria, resulting in 43 eligible participants being included in the study (Ishak et al., 2023).

The independent variable was the frequency of Prolanis visits, while the dependent variable was blood pressure control. Visit frequency was categorized as

regular when participants attended ≥ 4 times during the six-month period and irregular when they attended < 4 times (BPJS Kesehatan, 2024). Blood pressure was categorized as controlled when it was $< 140/90$ mmHg and uncontrolled when it was $\geq 140/90$ mmHg (Kreutz et al., 2024). Hypertension was defined as a systolic blood pressure of ≥ 140 mmHg and/or a diastolic blood pressure of ≥ 90 mmHg (WHO, 2023). Potential confounding variables included age, sex, medication adherence, physical activity, dietary patterns, stress levels, and comorbidities (Creswell, 2023; Sugiyono, 2022).

The research instruments consisted of an observation sheet and a documentation form used to record participants' characteristics, Prolanis visit frequency, hypertension diagnosis, and blood pressure measurements. Data collection involved coordination with the health center, participant selection based on the predetermined criteria, provision of information regarding the study, obtaining *informed consent*, and recording data from Prolanis registers and health center records (Sugiyono, 2022).

Data were processed through the stages of *editing, coding, data entry, cleaning, and tabulation* and were subsequently analyzed using Jamovi. Univariate analysis was performed to describe the characteristics of the participants and the distribution of study variables using frequencies and percentages (Creswell, 2023). Bivariate analysis was conducted to examine the relationship between Prolanis visit frequency and blood pressure control using Fisher's Exact Test at a significance level of $\alpha = 0.05$. Fisher's Exact Test was used because the expected count in some contingency-table cells was < 5 , indicating that the assumptions for the Chi-square test were not met (Sugiyono, 2022). The null hypothesis (H_0) was rejected when the p -value was ≤ 0.05 and accepted when the p -value was > 0.05 .

The study adhered to research ethics principles, including *informed consent, anonymity, confidentiality, beneficence, and justice*. Participants' identities and personal data were kept confidential and used solely for research purposes. Ethical procedures were implemented to protect participants' privacy, rights, safety, and well-being in accordance with applicable health research standards (WHO, 2023; Ministry of Health of the Republic of Indonesia, 2023).

C. RESULTS AND DISCUSSION

1. Respondent Characteristics

The characteristics of the respondents included age and sex, which are presented in the following tables.

Table 1. Distribution of Respondents by Age Among Older Adults with Hypertension Participating in Prolanis at Karangmoncol Public Health Center, 2026

Age group	Frequency (n)	Percentage (%)
Young-old adults (60–69 years)	26	60.47
Middle-old adults (70–79 years)	14	32.56

Oldest-old adults (≥ 80 years)	3	6.98
Total	43	100

Source: Secondary data from Karangmoncol Public Health Center, 2026.

As shown in Table 1, among the 43 respondents, the majority were aged 60–69 years, comprising 26 respondents (60.47%). A total of 14 respondents (32.56%) were aged 70–79 years, while 3 respondents (6.98%) were aged ≥ 80 years.

Table 2. Distribution of Respondents by Sex Among Older Adults with Hypertension Participating in Prolanis at Karangmoncol Public Health Center, 2026

Sex	Frequency (n)	Percentage (%)
Male	14	32.56
Female	29	67.44
Total	43	100

Source: Secondary data from Karangmoncol Public Health Center, 2026.

Table 2 shows that the majority of respondents were female, with 29 respondents (67.44%), whereas 14 respondents (32.56%) were male.

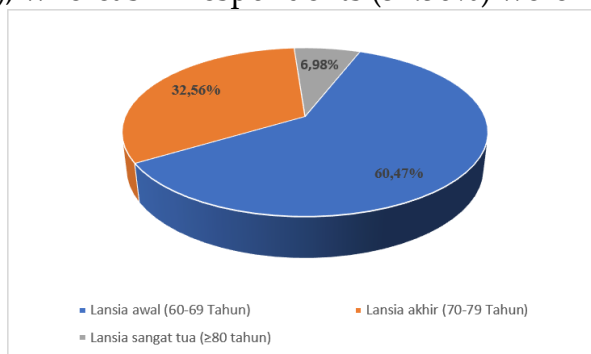


Figure 1. Respondents' Characteristics by Age

The findings showed that the majority of respondents were aged 60–69 years, comprising 26 respondents (60.47%). This indicates that respondents in the 60–69-year age group were more prevalent than those in the older age groups (WHO, 2025; Hall, 2022). This finding is consistent with Dhafin et.al. (2024) who reported that individuals aged 60–69 years constituted the largest age group among older adults with hypertension.

The predominance of respondents aged 60–69 years may be associated with their relatively better physical condition and mobility, which may enable them to participate in Prolanis activities more easily than individuals in older age groups. However, this interpretation is based on the researchers' observations and was not directly analyzed as a variable in the present study.

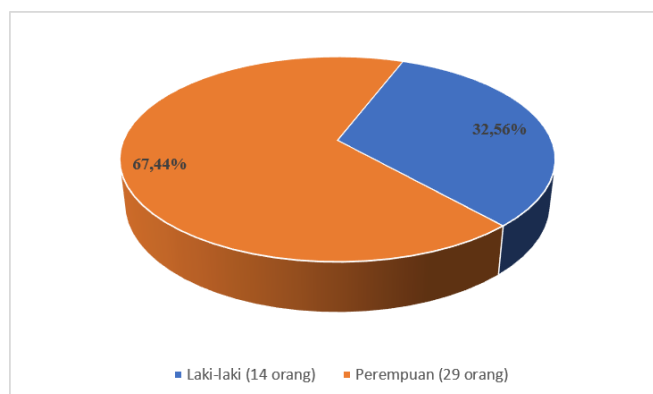


Figure 2. Respondents' Characteristics by Sex

The findings showed that the majority of respondents were female, with 29 respondents (67.44%), compared with 14 male respondents (32.56%). The higher proportion of female respondents may be related to differences in health service utilization and the tendency of women to undergo routine health examinations. (Sabrina & Rahayu, 2023). reported that sex is one of the factors associated with Prolanis utilization. However, sex was not a primary variable in this study. Therefore, the difference in the proportion of male and female respondents only describes the characteristics of the study population and cannot be used to conclude that blood pressure control differs between men and women.

2. Frequency of Prolanis Visits

The distribution of Prolanis visit frequency among older adults with hypertension is presented in Table 3.

Table 3. Distribution of Prolanis Visit Frequency Among Older Adults with Hypertension at Karangmoncol Public Health Center, 2026

Category	Frequency (n)	Percentage (%)
Regular	41	95.35
Irregular	2	4.65
Total	43	100

Source: Secondary Data from Karangmoncol Public Health Center, 2026.

As presented in Table 3, the majority of respondents participated regularly in Prolanis activities, accounting for 41 respondents (95.35%). Only 2 respondents (4.65%) participated irregularly.

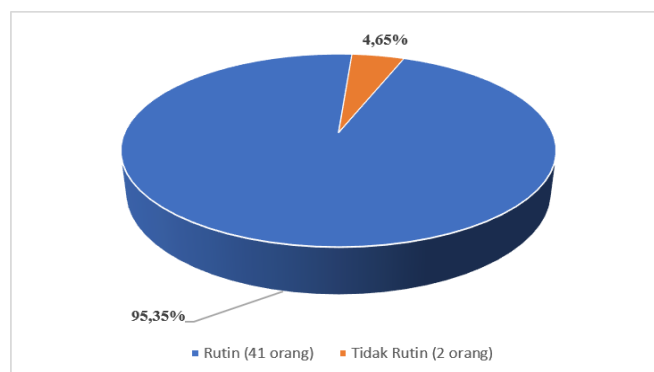


Figure 3. Frequency of Prolanis Visits

The results showed that the majority of respondents participated regularly in Prolanis activities, with 41 respondents (95.35%) categorized as regular participants and only 2 respondents (4.65%) categorized as irregular participants. The high proportion of regular participants indicates a high level of attendance among the respondents.

Prolanis is a health service program for participants with chronic diseases that includes health monitoring, consultation, education, physical activity, and service reminders. Regular participation provides opportunities for participants to receive continuous health monitoring and education (BPJS Kesehatan, 2024).

This finding is consistent with Afkarina (2023), who reported that most hypertensive patients participating in Prolanis were active or regular participants. According to the researchers, the high frequency of visits may be associated with regular health monitoring and the support provided by the health center.

The high proportion of regular participants may indicate that Prolanis implementation at Karangmoncol Public Health Center has been well maintained. Regular participation among older adults may be supported by periodic health examinations, health education provided by healthcare professionals, and accessibility of Prolanis services. Nevertheless, the presence of participants with irregular attendance indicates the need to evaluate factors that may affect participation, such as health conditions, family support, and daily activities.

1. Blood Pressure Control

The distribution of blood pressure control among older adults with hypertension participating in Prolanis is presented in Table 4.

Table 4. Distribution of Blood Pressure Control Among Older Adults with Hypertension Participating in Prolanis at Karangmoncol Public Health Center, 2026

Category	Frequency (n)	Percentage (%)
Controlled	14	32.56
Uncontrolled	29	67.44
Total	43	100

Source: Secondary data from Karangmoncol Public Health Center, 2026.

Table 4 shows that 14 respondents (32.56%) had controlled blood pressure, whereas 29 respondents (67.44%) had uncontrolled blood pressure.

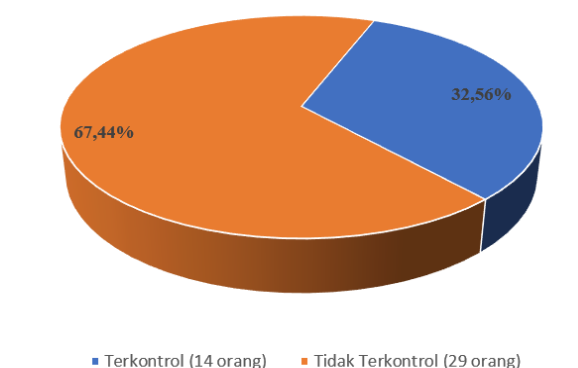


Figure 4. Blood Pressure Control

The findings showed that 14 respondents (32.56%) had controlled blood pressure, whereas 29 respondents (67.44%) had uncontrolled blood pressure. This finding indicates that the majority of older adults with hypertension participating in Prolanis had not achieved the target for blood pressure control at the time of data collection.

Blood pressure control among patients with hypertension is influenced by multiple factors, including medication adherence, dietary patterns, physical activity, stress levels, health examinations, age, and comorbidities (Kemenkes RI, 2023). Among older adults, physiological changes associated with aging, such as increased arterial stiffness and reduced vascular elasticity, may also affect blood pressure (Hall, 2022; Liu & Wu, 2024).

The high proportion of respondents with uncontrolled blood pressure may therefore reflect the multifactorial nature of hypertension management. Aging-related cardiovascular changes, medication adherence, dietary patterns, physical activity, and the presence of comorbidities may all contribute to the difficulty of achieving adequate blood pressure control (Kemenkes RI, 2023a).

This finding is consistent with Afkarina (2023) and Nurpuspitasari (2024), who reported that some Prolanis participants continued to have uncontrolled blood pressure. According to the researchers, this condition indicates that participation in Prolanis activities is not the sole determinant of blood pressure control, as several other factors may influence blood pressure outcomes.

2. Association Between Prolanis Visit Frequency and Blood Pressure Control

The association between Prolanis visit frequency and blood pressure control among older adults with hypertension is presented in Table 5.

Table 5. Association Between Prolanis Visit Frequency and Blood Pressure Control Among Older Adults with Hypertension at Karangmoncol Public Health Center, 2026

Prolanis visit frequency	Controlled n (%)	Uncontrolled n (%)	Total
Regular	14 (34.15)	27 (65.85)	41
Irregular	0 (0.00)	2 (100.00)	2
Total	14	29	43

Source: Secondary Data from Karangmoncol Public Health Center, 2026.

Among the 41 respondents who participated regularly in Prolanis, 14 (34.15%) had controlled blood pressure, while 27 (65.85%) had uncontrolled blood pressure. Among the two respondents who participated irregularly, both (100%) had uncontrolled blood pressure.

Bivariate analysis using Fisher's exact test yielded a p-value of 1.000 ($p > 0.05$). This finding indicates that there was no statistically significant association between Prolanis visit frequency and blood pressure control among older adults with hypertension at Karangmoncol Public Health Center in 2026.

Contingency Tables

Contingency Tables		Kontrol TD		
Frekuensi		2	1	Total
1	Observed	27	14	41
	% within row	65.9 %	34.1 %	100.0 %
2	Observed	2	0	2
	% within row	100.0 %	0.0 %	100.0 %
Total	Observed	29	14	43
	% within row	67.4 %	32.6 %	100.0 %

χ^2 Tests			
	Value	df	p
χ^2	1.01	1	.314
Fisher's exact test			1.000
N	43		

Figure 4. Association Between Prolanis Visit Frequency and Blood Pressure Control

Bivariate analysis was conducted using Fisher's exact test to determine the association between Prolanis visit frequency and blood pressure control. Fisher's exact test was selected because some cells in the contingency table had an expected frequency of less than 5; therefore, the assumptions for the Chi-square test were not met. Fisher's exact test is an appropriate alternative when the assumptions of the Chi-square test are violated (Faizi & Alvi, 2023).

The analysis produced a p-value of 1.000 ($p > 0.05$), indicating that there was no statistically significant association between Prolanis visit frequency and blood pressure control among older adults with hypertension at Karangmoncol Public Health Center in 2026. This finding differs from Afkarina (2023) and Nurpuspitasaki (2024), who reported an association or tendency toward an association between active participation in Prolanis and blood pressure stability or consistency. In contrast, the

present finding is consistent with Maris et al. (2026), who obtained a p -value of 0.087 ($p > 0.05$) and found no significant association between Prolanis participation and blood pressure status among patients with hypertension.

The absence of a statistically significant association in the present study may be related to the highly unbalanced distribution of respondents between the two visit-frequency categories. Specifically, 41 respondents (95.35%) were categorized as regular participants, whereas only 2 respondents (4.65%) were categorized as irregular participants. This substantial imbalance resulted in limited variability between the groups and may have reduced the ability to detect a statistically significant association. In addition, blood pressure control may be influenced by other factors that were not analyzed in this study, including medication adherence, dietary patterns, physical activity, stress levels, age, and comorbidities. Therefore, regular attendance at Prolanis activities alone may not be sufficient to ensure adequate blood pressure control.

Theoretically, regular participation in Prolanis may support blood pressure management through health monitoring, education, consultation, and treatment evaluation. However, the benefits of Prolanis participation do not imply that visit frequency is the sole determinant of blood pressure control. Thus, the present study indicates that, among the respondents studied, Prolanis visit frequency was not significantly associated with blood pressure control (BPJS Kesehatan, 2024; Kemenkes RI, 2023; Kreutz et al., 2024).

D. CONCLUSION

This study examined the association between the frequency of Chronic Disease Management Program (Prolanis) visits and blood pressure control among older adults with hypertension at Karangmoncol Public Health Center in 2026. The majority of respondents were aged 60–69 years and were female. Most respondents participated regularly in Prolanis activities, with 41 respondents (95.35%) classified as regular participants. However, blood pressure was uncontrolled in 29 respondents (67.44%). The Fisher's exact test yielded a p -value of 1.000 ($p > 0.05$), indicating no statistically significant association between Prolanis visit frequency and blood pressure control among older adults with hypertension.

This study has several limitations. Data collection was conducted on the first day of the Prolanis activity, and blood pressure measurements were available from only a single assessment. Therefore, the findings may not fully reflect changes in blood pressure over time. Future studies are recommended to involve a larger sample size and consider other factors that may influence blood pressure control, such as medication adherence, dietary patterns, physical activity, stress levels, and comorbidities. Karangmoncol Public Health Center is encouraged to continue strengthening health education, monitoring medication adherence, and promoting regular participation in Prolanis activities as part of comprehensive hypertension management.

REFERENCES

1. Afkarina, Aidah (2023) *Hubungan Prolanis dengan Kestabilan Tekanan Darah Penderita Hipertensi Usia 55-56 Tahun di Puskesmas Situbondo* (Bachelor Thesis, Wijaya Kusuma Surabaya University).
2. BPJS Kesehatan. (2024). *Panduan praktis Prolanis Program pengelolaan penyakit kronis Prolanis*. BPJS Kesehatan.
3. Creswell, J. W. (2023). *Research design: Qualitative, quantitative, and mixed methods approaches*. SAGE Publications.
4. Dhafin, A. A., Kusumawati, L. W., Putri, E. M., & Mawarni, O. I. (2024). Gambaran Karakteristik Pasien Lansia dengan Hipertensi di Salah Satu Rumah Sakit Kota Bengkulu Tahun 2023. *Jurnal Inovasi Farmasi Indonesia*, 6(1), 1–13.
5. Ishak, S., Choirunissa, R., Agustiawan, & Purnama, Y. (2023). *Metodologi Penelitian Kesehatan*. Media Sains Indonesia.
6. Hall, J. E. (2016). *Guyton and Hall Textbook of Medical Physiology*. Philadelphia: Elsevier.
7. Hasanah, L. O., & Inayati, H. (2023). Hubungan Frekuensi Kunjungan Lansia Pada Posyandu Lansia dengan Kontrol Tekanan Darah Pada Pasien Hipertensi. *Journal of Innovation Research and Knowledge*, 3(3), 493–500.
8. Nurpuspitasari, A. D. (2024). *Hubungan Frekuensi Keaktifan dalam mengikuti Prolanis terhadap Konsistensi Tekanan Darah pada Penderita Hipertensi di Puskesmas Mojolaban Kabupaten Sukoharjo* (Doctoral Dissertation, Universitas Kusuma Husada Surakarta).
9. Sabrina, L. Y., & Rahayu, S. R. (2023). Determinan Pemanfaatan Program Pengelolaan Penyakit Kronis (Prolanis). *Higeia Journal of Public Health Research and Development*, 7(4), 610-624.
10. Sari, S. D., & Legiran. (2024). Desain Cross Selctional Bagi Penelitian. *Stetoskop: The Journal Health of Science*, 1(1), 18–25.
11. Sugiyono. (2016). *Metode Penelitian Kuantitatif, Kualitatif, dan R&D*. Bandung: Alfabeta.
12. Unger, T., Borghi, C., Charchar, F., Khan, N. A., Poulter, N. R., Prabhakaran, D., ... & Schutte, A. E. (2020). 2020 International Society of Hypertension global hypertension practice guidelines. *Hypertension*, 75(6), 1334-1357.
13. World Health Organization. (2025). *Ageing and Health*. World Health Organization.
14. World Health Organization. (2023). *Global report on hypertension*. World Health Organization.