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The Association Between Hypertension Duration and Anxiety Levels Among Older Adults in Pentadio Timur, Gorontalo, Indonesia

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ABSTRACT

Background: Hypertension is a common chronic condition among older adults and may coexist with psychological distress, including anxiety. Living with a chronic diagnosis over many years can involve continuing treatment, concern about complications, and changes in daily functioning. This study examined the association between the duration of hypertension and anxiety levels among older adults in Pentadio Timur Village, Telaga Biru District, Gorontalo Regency, Indonesia.
Methods: An analytical observational study with a cross-sectional design was conducted among 68 older adults with hypertension selected through purposive sampling. Duration of hypertension was recorded and categorized as short (1–5 years), moderate (6–10 years), or long (>10 years). Anxiety was assessed using the Zung Self-Rating Anxiety Scale (ZSAS) and categorized according to the study's scoring protocol. Descriptive statistics and a Chi-square test were used to examine the association, with statistical significance set at $\alpha = 0.05$.
Results: Twenty participants (29.4%) had hypertension for 1–5 years, 22 (32.4%) for 6–10 years, and 26 (38.2%) for more than 10 years. Mild anxiety was identified in 38 participants (55.9%), while 30 (44.1%) were classified in the higher-anxiety category. The reported cross-tabulation showed no participants in the higher-anxiety category among those with a 1–5-year history, four among those with a 6–10-year history, and 26 among those with hypertension for more than 10 years. The thesis reports a statistically significant association ($p < 0.001$).
Conclusion: In this sample, longer duration of hypertension was associated with a higher anxiety category. The cross-sectional design does not establish causality, and the finding should be interpreted in light of the single-community setting, purposive sampling, and the need to verify the statistical test assumptions and scoring details. Routine assessment of psychological well-being may be considered alongside hypertension management in older adults.

INTRODUCTION

Population ageing has increased the importance of integrated approaches to chronic disease management and healthy ageing. Older adults may experience physiological changes, multimorbidity, reduced functional capacity, and changes in social roles, all of which can influence physical and psychological well-being. The World Health Organization has identified hypertension as a major global public-health concern because persistent elevation of blood pressure increases the risk of cardiovascular and renal complications (World Health Organization [WHO], 2021, 2023). Hypertension is often asymptomatic, which can make long-term monitoring and adherence challenging even when the disease carries substantial risks.

Hypertension management involves more than blood-pressure measurement and medication. Patients may need to sustain lifestyle changes, attend regular health appointments, manage medication schedules, and cope with uncertainty about future complications. For older adults, these demands may overlap with age-related changes, reduced independence, bereavement, financial constraints, and social isolation. Such stressors can contribute to anxiety, a psychological state involving apprehension, worry, tension, and physiological arousal (American Psychiatric Association [APA], 2022; Kaplan & Sadock, 2020). Anxiety may in turn interfere with sleep, quality of life, treatment adherence, and self-management.

The relationship between chronic physical illness and psychological distress is complex and may be bidirectional. Concern about illness and complications may increase anxiety, while persistent anxiety and stress responses may affect health behaviours and perceived symptoms. Prior studies have investigated anxiety and depressive symptoms among people with hypertension and other chronic conditions, including associations with disease duration, clinical status, and social factors (Yucel et al., 2019; Li et al., 2020; Garcia et al., 2022). Research on older adults also suggests that the cumulative burden of chronic illness may be relevant to psychological health, although effects may vary by disease, population, and support context (Katon et al., 2022; Umar et al., 2023).

Duration of hypertension is one potential marker of cumulative exposure to chronic illness. A longer period living with hypertension may mean repeated treatment demands and greater opportunity for worries about complications to develop. However, duration alone cannot explain anxiety: severity and control of blood pressure, comorbidities, health literacy, socioeconomic circumstances, social support, and individual coping resources may also matter. Consequently, the relationship between duration and anxiety should be examined empirically rather than assumed. Local evidence can help community health workers identify groups who may benefit from more attentive psychosocial screening. The present study focused on older adults with hypertension in Pentadio Timur Village, Telaga Biru District, Gorontalo Regency, Indonesia. The study aimed to determine whether duration of hypertension was associated with anxiety level among these older adults. The research question was: Is the duration of hypertension significantly associated with anxiety level among older adults in the study setting? The findings are intended to inform community-based gerontological nursing, while recognizing that an association in a cross-sectional study cannot demonstrate a causal effect.

METHODS

Study design and setting

This study used a quantitative, analytical observational design with a cross-sectional approach. Both hypertension duration and anxiety level were assessed during the same study period; no intervention was administered. The research was conducted among older adults with hypertension residing in Pentadio Timur Village, Telaga Biru District, Gorontalo Regency, Indonesia. A cross-sectional design is suitable for estimating distributions and examining associations at a defined time, but it cannot establish temporal order or causation (Levin, 2020; Creswell & Creswell, 2020).

Population and sample

The source population consisted of 210 older adults with hypertension recorded by the Telaga Biru Community Health Center in 2025. The study included 68 respondents selected through purposive, non-probability sampling based on the study's eligibility criteria and willingness to participate. Participants were aged 60 years or older and were residents of the study area. Because the sample was purposive and drawn from one village, the results should not be generalized automatically to all older adults with hypertension.

Measures

Duration of hypertension was obtained using an observation sheet and categorized as short (1–5 years), moderate (6–10 years), or long (>10 years). Anxiety was measured with the Zung Self-Rating Anxiety Scale (ZSAS), a self-report instrument covering symptoms associated with anxiety. The thesis classified scores of 22–59 as mild anxiety and 60–80 as a higher/severe category. For publication, the exact version, language adaptation, scoring transformation, and validation evidence for the instrument should be reported clearly; the category labels and scoring should also be checked against the version actually administered (Zung, 1971; Grant et al., 2025).

3.4 Data collection and analysis

Data were collected using the duration-of-hypertension observation sheet and the ZSAS questionnaire. Descriptive statistics were used to summarize participant characteristics, hypertension duration, and anxiety category. The association between the two ordinal/categorical variables was assessed using a Chi-square test, with $\alpha = 0.05$ and a 95% confidence level. The study protocol stated that Spearman's rank correlation could be considered if Chi-square assumptions were not met. Before journal submission, the exact test output, degrees of freedom, expected cell counts, and p-value should be verified from the original statistical output. The thesis reports the result as $p < 0.001$; this notation is used here rather than the mathematically inappropriate expression $p < 0.000$.

Ethical considerations

The thesis describes obtaining research permission and informed consent, protecting participants' identities by using respondent codes, and treating participation as voluntary. Because the study involved older adults and health-related information, publication should include the name of the approving ethics committee and approval number/date if available. These details were not clearly identifiable in the material reviewed and should be inserted only after verification from the official ethics approval document.

RESULTS

Participant characteristics

The study included 68 older adults. According to the thesis tables, 47 participants (69.1%) were aged 60–74 years and 21 (30.9%) were aged 75–90 years in one summary table; another table reports 37 (54.4%) and 31 (45.6%) for these age categories. This discrepancy must be reconciled against the original data before submission. There were 29 men (42.6%) and 39 women (57.4%). The most common education category reported was primary school, with 20 participants (29.4%).

Table 1Duration of hypertension

Duration of hypertension	n	%
Short (1–5 years)	20	29.4
Moderate (6–10 years)	22	32.4
Long (>10 years)	26	38.2
Total	68	100.0

The largest group had lived with hypertension for more than 10 years (26; 38.2%), followed by 6–10 years (22; 32.4%) and 1–5 years (20; 29.4%).

Table 2. Anxiety level

Anxiety category as reported in the thesis	n	%
Mild anxiety	38	55.9
Higher/severe anxiety category	30	44.1
Total	68	100.0

Thirty-eight respondents (55.9%) were classified in the mild-anxiety category, while 30 (44.1%) were classified in the higher category. These labels follow the thesis and should be checked against the scoring guidance for the exact ZSAS version used.

Table 3. Association between hypertension duration and anxiety

Hypertension duration	Mild anxiety n (%)	Higher anxiety n (%)	Total n (%)
Short (1–5 years)	20 (29.4)	0 (0.0)	20 (29.4)
Moderate (6–10 years)	18 (26.5)	4 (5.9)	22 (32.4)
Long (>10 years)	0 (0.0)	26 (38.2)	26 (38.2)
Total	38 (55.9)	30 (44.1)	68 (100.0)

The cross-tabulation in the thesis shows a marked gradient: all 20 respondents in the short-duration group were classified as having mild anxiety; in the moderate-duration group, 18 had mild anxiety and four had higher anxiety; and all 26 respondents in the long-duration group were classified in the higher-anxiety category. The thesis reports a statistically significant Chi-square result ($p < 0.001$). However, several cells contain zero counts, so the assumptions for the conventional Chi-square approximation may not be satisfied. The authors should verify expected frequencies and, if necessary, report an exact test or a suitable alternative. The near-perfect separation in the table should also be checked against the raw data and coding before publication.

DISCUSSION

The study's principal finding is that longer duration of hypertension was associated with a higher anxiety category among the 68 older adults studied. The pattern was pronounced in the reported cross-tabulation: no respondents in the 1–5-year group were classified in the higher-anxiety category, whereas all respondents in the >10-year group were so classified. This pattern is consistent with the possibility that long-term illness management can be accompanied by persistent concern about health, treatment demands, and potential complications. Nevertheless, because the analysis is cross-sectional, the result should be described as an association and not evidence that duration itself causes anxiety.

The finding is broadly compatible with literature that has explored psychological distress among people with hypertension and chronic illness. Anxiety may be shaped by uncertainty about prognosis, fear of complications, perceived symptoms, treatment burden, and the experience of living with a condition that requires ongoing monitoring (Yucel et al., 2019; Li et al., 2020; Garcia et al., 2022). Studies of chronic illness in older adults also suggest that cumulative disease burden and changes in functioning can be relevant to anxiety and depressive symptoms (Wang et al., 2020; Katon et al., 2022; Zhou et al., 2020). The present study adds a community-based perspective from Gorontalo, although its small, single-site sample limits broader inference.

One plausible interpretation is that longer exposure to hypertension management may increase the number of

situations that trigger worry, such as medication routines, repeated clinical visits, concerns about stroke or kidney disease, and dependence on family members for support. Older adults may also be managing more than one chronic condition, and the interaction of multimorbidity with functional limitations can affect psychological well-being. However, duration is only a proxy for accumulated experience; it does not directly measure disease severity, treatment burden, blood-pressure control, complications, or perceived support. These unmeasured factors could explain some or all of the observed association.

The findings also support a person-centred view of hypertension care. Blood-pressure monitoring and pharmacological treatment remain essential, but routine care can also include brief questions about worry, sleep, coping, and perceived support. Where distress is identified, nurses and primary-care teams may provide education about hypertension, clarify misconceptions about complications, encourage adherence without blame, and refer patients for further mental-health assessment when indicated. Family involvement and community support may be particularly useful when older adults experience isolation or difficulties navigating long-term care. Such implications are consistent with integrated chronic-disease management, but the current study did not test an intervention and therefore cannot determine which strategy would be most effective.

The study has important limitations. First, the cross-sectional design prevents causal inference and cannot establish whether anxiety preceded or followed a longer duration of hypertension. Second, purposive sampling in one village may introduce selection bias and limits generalizability. Third, anxiety was measured by self-report, and the scoring thresholds and category labels should be verified against the precise ZSAS version used. Fourth, the reported contingency table includes zero cells and an unusually strong separation across duration categories; raw data, data entry, and statistical assumptions need to be rechecked. Fifth, there is an inconsistency in the age-frequency results across the thesis tables. Finally, potential confounders such as blood-pressure control, comorbidities, medication burden, socioeconomic status, education, social support, and prior mental-health conditions were not adjusted for. These limitations should be addressed transparently before journal submission.

Future research should recruit larger samples from multiple communities and consider multivariable analyses that account for clinical and psychosocial factors. Longitudinal designs could clarify how anxiety changes over time after diagnosis and whether disease duration remains associated after accounting for blood-pressure control, comorbidities, and social support. Qualitative interviews may further explain how older adults interpret their diagnosis and what kinds of support they find most helpful. For nursing practice, the present findings are best treated as a signal to assess psychological well-being in chronic-care settings rather than as a basis for assuming that every person with long-standing hypertension will experience severe anxiety.

CONCLUSION

Among 68 older adults with hypertension in Pentadio Timur Village, longer reported duration of hypertension was associated with a higher anxiety category. The thesis reports a statistically significant association ($p < 0.001$), with higher anxiety concentrated in the group living with hypertension for more than 10 years. These findings suggest that psychological well-being deserves attention alongside routine hypertension management in older adults. However, the cross-sectional design, purposive single-community sample, possible violations of Chi-square assumptions, inconsistencies in descriptive tables, and unadjusted confounding factors mean that the result should be interpreted cautiously. Before submission, the original data, ZSAS scoring, age-frequency discrepancy, and exact statistical output must be verified. Future multi-site and longitudinal studies are needed to assess the robustness and direction of this association.

Clinical and research implications

Community nurses and primary-care teams may consider integrating brief anxiety screening and supportive communication into hypertension follow-up for older adults. Research teams should document validated instruments, prespecified categories, ethics approval, and complete statistical outputs. These are practical implications rather than intervention effects established by this study.

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