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Psychological Adaptation to Hypertension Among Elderly Patients in Primary Care

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ABSTRACT

Hypertension is one of the most common chronic diseases among elderly populations and may negatively affect physical health, psychological well-being, and emotional adaptation. Elderly patients with hypertension often experience anxiety, fear of complications, emotional burden, and difficulties adapting to long-term illness management. However, limited studies have explored psychological adaptation to hypertension among elderly patients in primary care settings. Therefore, this study aimed to explore psychological adaptation to hypertension among elderly patients receiving treatment in primary healthcare services. This study employed a qualitative phenomenological design involving 10 elderly patients with hypertension selected using purposive sampling techniques. Data were collected through in-depth semi-structured interviews, observation, and field notes. Thematic analysis was used to identify patterns and themes related to participants' psychological adaptation experiences. The findings revealed four major themes, including emotional responses to hypertension, acceptance and adaptation to chronic illness, coping strategies in hypertension management, and the role of social and healthcare support in psychological adaptation. Participants experienced fear, anxiety, and emotional distress during the early stages of illness but gradually developed adaptive coping mechanisms and emotional acceptance. Family support and positive healthcare communication also played important roles in strengthening psychological adaptation. These findings highlight the importance of integrating psychological and emotional support into primary healthcare services to improve holistic hypertension management among elderly patients.

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INTRODUCTION

Hypertension remains one of the leading global public health problems and is a major contributor to cardiovascular morbidity and mortality among older adults. The prevalence of hypertension continues to increase worldwide, particularly among elderly populations due to physiological aging processes, decreased vascular elasticity, and multiple chronic health conditions (Kario et al., 2024). Elderly individuals with hypertension are more vulnerable to long-term complications, including stroke, heart failure, kidney disease, cognitive decline, and reduced quality of life (Soares, 2025). In Indonesia, hypertension is also recognized as one of the most common chronic diseases among older adults and contributes significantly to disability, healthcare burden, and decreased functional independence in later life (Kementerian Kesehatan, 2024).

Beyond physical complications, hypertension also affects the psychological well-being of elderly patients. Living with chronic hypertension often requires lifelong medication adherence, dietary restrictions, lifestyle modification, regular health monitoring, and adaptation to progressive physical limitations. These conditions may trigger various psychological responses such as anxiety, stress, emotional burden, fear of complications, helplessness, and reduced self-confidence among

elderly individuals (Cao et al., 2022). Psychological distress among older adults with hypertension may negatively influence self-management behavior, treatment adherence, social interaction, and overall emotional adjustment to chronic illness (Peleg & Peleg, 2024). Elderly patients who experience poor psychological adaptation are also more likely to develop maladaptive coping mechanisms, decreased motivation for treatment, and poor health-related quality of life (Pinho & Afonso, 2025).

Psychological adaptation is an important concept in chronic disease management, particularly among elderly populations. Psychological adaptation refers to an individual's ability to emotionally, cognitively, and behaviorally adjust to chronic health conditions and maintain psychological balance despite ongoing health challenges (S. Chen et al., 2023). In elderly patients with hypertension, psychological adaptation involves acceptance of illness, coping with treatment demands, emotional regulation, maintenance of social roles, and adjustment to changes in physical functioning. Effective psychological adaptation may support better self-management, increase treatment adherence, reduce emotional distress, and improve quality of life among elderly patients with chronic diseases (Ashoorkhani, 2024). Conversely, inadequate psychological adaptation may worsen emotional health and negatively affect chronic disease outcomes.

This study is also conceptually supported by the Roy Adaptation Model, which explains that individuals continuously respond and adapt to internal and external stimuli associated with chronic illness conditions. In elderly patients with hypertension, adaptation involves physiological, psychological, and social responses that influence emotional stability, coping behavior, and overall well-being. Understanding psychological adaptation through this framework may help healthcare professionals provide more holistic and patient-centered care for elderly populations with chronic diseases.

Although previous studies have extensively examined hypertension management among older adults, most have primarily focused on physiological outcomes, medication adherence, blood pressure control, lifestyle modification, and psychological distress such as anxiety or depression (Aji, Gabriel Ching, et al., 2026a). Consequently, little is known about how elderly individuals psychologically adapt to living with hypertension as a long-term chronic condition, particularly regarding the dynamic processes of illness acceptance, emotional adjustment, coping strategies, and meaning-making within primary healthcare settings. Furthermore, few qualitative phenomenological studies have explored these lived experiences in the Indonesian primary care context, where cultural values, family involvement, and community-based healthcare may substantially influence psychological adaptation (Ummah, 2019). Addressing this gap is essential to provide a deeper understanding of the psychosocial dimensions of hypertension beyond conventional clinical outcomes.

Primary care services play an important role in supporting elderly patients with hypertension because they provide continuous disease monitoring, long-term treatment management, and psychosocial support within community settings. Elderly patients frequently interact with primary healthcare providers, making primary care an important environment for understanding patients' psychological experiences and adaptation processes related to chronic illness management (Charchar et al., 2024). Understanding psychological adaptation among elderly hypertensive patients in primary care may help healthcare professionals develop more holistic and patient-centered interventions that address not only physical health but also emotional and psychological needs among older adults.

This study offers a novel contribution by shifting the focus of hypertension research from predominantly physiological and treatment-related outcomes toward the psychological adaptation processes experienced by elderly individuals living with chronic hypertension. By employing a qualitative phenomenological approach, this study provides in-depth insights into how older adults perceive, interpret, and adapt to their illness within the context of primary healthcare services. The

findings are expected to enrich the literature in nursing and health psychology by expanding the understanding of chronic illness adaptation and by providing evidence to support the development of more holistic, patient-centered interventions that integrate psychological, emotional, and social dimensions into hypertension management among older adults (Aji et al., 2026).

Based on these considerations, this study aimed to explore and understand the lived experiences of psychological adaptation among elderly patients with hypertension receiving care in primary healthcare settings. Specifically, this study sought to describe how elderly individuals emotionally respond to, cope with, and adapt to long-term hypertension in their everyday lives, as well as to identify the psychosocial factors that facilitate or hinder this adaptation. By adopting a phenomenological approach, this study provides a deeper understanding of the subjective experiences of elderly individuals living with hypertension, thereby contributing to the development of holistic nursing care and psychological support within primary healthcare services.

METHODS

Research Design

This study employed a qualitative research design with a phenomenological approach to explore psychological adaptation to hypertension among elderly patients in primary care settings. Qualitative research is appropriate for understanding individual experiences, emotional responses, perceptions, and adaptation processes related to chronic illness in everyday life (Creswell & Poth, 2021). A phenomenological approach was used because this study focused on exploring the lived experiences of elderly patients in adapting psychologically to long-term hypertension and its associated challenges. This approach allows researchers to gain a deeper understanding of participants' emotional adjustment, coping mechanisms, self-perceptions, and meaning-making processes related to chronic disease experiences (Y. Chen & Li, 2026).

The study was conducted from January to March 2026 in primary healthcare services located in Karanganyar Regency, Central Java, Indonesia. The research focused on elderly hypertensive patients receiving regular treatment and monitoring within primary care settings. The qualitative design was selected to provide comprehensive insights into psychological adaptation experiences that could not be fully captured through quantitative measurements alone.

Participant and Procedure

Participants in this study were elderly patients diagnosed with hypertension who routinely attended primary healthcare services for blood pressure monitoring and treatment management. Participants were selected using purposive sampling techniques based on predetermined inclusion criteria. The inclusion criteria included elderly patients aged 60 years and older, diagnosed with hypertension for at least one year, able to communicate effectively, and willing to participate in the study. Participants with severe cognitive impairment, hearing difficulties that interfered with communication, or unstable medical conditions were excluded from the study.

A total of 10 participants were involved in this study until data saturation was achieved. Saturation was achieved when repeated interview responses no longer generated new categories, meanings, or thematic insights related to psychological adaptation experiences among participants. Prior to data collection, researchers established rapport with participants to create trust and encourage open communication during interviews. Data collection was conducted through in-depth semi-structured interviews in a private and comfortable environment within the primary healthcare setting.

The interviews explored participants' experiences living with hypertension, emotional responses to chronic illness, coping strategies, perceptions of aging and illness, treatment experiences, social support, and psychological adaptation processes. Each interview lasted approximately 45–60 minutes and was audio-recorded with participants' consent. Field notes and

observations were also conducted to capture non-verbal responses, emotional expressions, and contextual factors during the interviews.

Research Instruments

The primary research instrument used in this study was a semi-structured interview guide developed based on literature related to psychological adaptation, chronic illness experiences, and hypertension management among elderly populations (Ade Rahayu, 2025). The interview guide consisted of open-ended questions designed to explore participants' emotional experiences, psychological adjustment, coping mechanisms, acceptance of illness, self-management challenges, and perceived social support.

Examples of interview questions included: "How did you feel when you were first diagnosed with hypertension?", "What challenges have you experienced while living with hypertension?", and "How do you adapt emotionally and psychologically to your health condition?". Probing questions were used to obtain deeper explanations and clarify participants' responses during interviews.

To enhance the credibility and trustworthiness of the findings, the researchers also used observation and field documentation during the data collection process. Observational data included participants' emotional expressions, communication patterns, and behavioral responses during interviews. The researchers maintained reflective notes throughout the research process to minimize researcher bias and improve reflexivity in data interpretation.

Data Analysis

Data were analyzed using thematic analysis techniques following the procedures described. Thematic analysis was selected because it allows systematic identification, organization, and interpretation of meaningful themes related to psychological adaptation experiences among elderly hypertensive patients.

The analysis process involved several stages, including data familiarization, interview transcription, initial coding, theme identification, theme review, theme definition, and interpretation of findings. Interview recordings were transcribed verbatim immediately after data collection to maintain data accuracy and completeness. Researchers repeatedly read the interview transcripts to gain a deeper understanding of participants' experiences and identify meaningful patterns related to psychological adaptation.

Coding was conducted manually by identifying important statements, emotional expressions, coping experiences, and adaptation processes described by participants. Similar codes were grouped into broader themes reflecting participants' psychological adaptation experiences related to hypertension. To ensure trustworthiness, the researchers applied credibility, dependability, confirmability, and transferability strategies, including member checking, peer debriefing, and triangulation between interview, observation, and field note data sources (Politi et al., 2021).

Prior to data collection, participants received explanations regarding the objectives, procedures, benefits, and voluntary nature of the study. Written informed consent was obtained from all participants before participation in the interviews. Participant confidentiality and anonymity were maintained throughout the research process by using coded identifiers and securely storing all research data. Participants were also informed that they had the right to withdraw from the study at any stage without any consequences. The research process was conducted in accordance with ethical principles for human subject research, including respect for autonomy, privacy, confidentiality, beneficence, and non-maleficence (World Medical Association, 2022). To enhance methodological rigor, the researchers conducted member checking, prolonged engagement during interviews, peer debriefing, and triangulation of interview, observation, and field note data to ensure the credibility and trustworthiness of the findings.

RESULT AND DISCUSSION

Results

Present the findings from the analysis. Explanation of research findings, linked to previous research results, analyzed critically and related to relevant literature (maximum number of pages 30-40% of the total pages of the manuscript).

Table 1. Participant Characteristics

Participant	Age	Gender	Duration of Hypertension	Education
P1	62	Female	8 years	Elementary School
P2	67	Male	10 years	High School
P3	71	Female	12 years	Elementary School
P4	65	Female	7 years	Junior High School
P5	69	Male	15 years	High School
P6	73	Female	10 years	Elementary School
P7	66	Male	9 years	Senior High School
P8	70	Female	13 years	Elementary School
P9	64	Male	6 years	Junior High School
P10	72	Female	14 years	Elementary School

This study explored psychological adaptation to hypertension among elderly patients receiving treatment in primary care settings. Based on thematic analysis of interview data, four major themes emerged: (1) emotional responses to living with hypertension, (2) acceptance and adaptation to chronic illness, (3) coping strategies in hypertension management, and (4) the role of social and healthcare support in psychological adaptation.

Table 2. Themes and Subthemes

Themes	Subthemes
Emotional Responses to Hypertension	Fear, anxiety, uncertainty, emotional burden
Acceptance and Adaptation	Illness acceptance, emotional adjustment, lifestyle adaptation
Coping Strategies	Spiritual coping, positive thinking, social engagement
Social and Healthcare Support	Family support, nurse communication, healthcare monitoring

The four themes consistently emerged across participant interviews and reflected shared experiences related to psychological adaptation to hypertension among elderly patients. Each theme reflects important dimensions of psychological adaptation experienced by elderly patients in managing long-term hypertension within primary healthcare settings.

The first theme identified in this study was emotional responses to living with hypertension. Most participants described experiencing fear, anxiety, stress, and uncertainty after being diagnosed with hypertension. Several participants expressed concerns regarding possible complications such as stroke, paralysis, heart disease, and sudden death. Participants also reported feelings of worry related to lifelong medication use and declining physical health associated with aging. One participant expressed: “I was afraid when the doctor said I had hypertension because I worried about having a stroke and becoming dependent on my family.” (P3). One participant stated that hypertension caused continuous fear about future health conditions and dependency on family members. These findings indicate that elderly patients often experience substantial emotional burden during the early stages of chronic illness adaptation.

The second theme identified was acceptance and adaptation to chronic illness. Although participants initially experienced psychological distress, most participants gradually developed acceptance toward their health condition over time. Participants reported beginning to understand the importance of treatment adherence, dietary regulation, regular blood pressure monitoring, and maintaining healthier lifestyles. Several participants stated that acceptance of hypertension helped them become calmer and more capable of managing emotional stress associated with chronic

illness. One participant explained: “At first, I felt stressed and hopeless, but over time I learned to accept my condition and follow the treatment regularly.” (P5). Adaptation processes were influenced by personal beliefs, illness experiences, spiritual acceptance, and support from family members.

The third theme involved coping strategies in hypertension management. Participants described several coping mechanisms used to adapt psychologically to hypertension, including engaging in religious activities, maintaining positive thinking, seeking emotional support from family members, participating in community activities, and improving treatment compliance. One participant stated: “I try to stay calm by praying and participating in community activities because it helps me feel stronger emotionally.” (P7). Some participants reported that prayer, spiritual reflection, and acceptance of aging helped reduce anxiety and emotional tension related to hypertension. Other participants attempted to maintain independence by continuing light physical activities and social interactions despite their health limitations.

The fourth theme highlighted the role of social and healthcare support in psychological adaptation. Participants emphasized the importance of family support, healthcare provider communication, and regular monitoring from primary healthcare services in helping them adapt psychologically to hypertension. One participant mentioned: “My children and nurses always encourage me to stay positive and continue my treatment, which makes me feel calmer and more confident.” (P8). Positive communication with nurses and healthcare workers increased participants’ confidence in managing their illness and reduced feelings of isolation and helplessness. Participants also perceived that supportive healthcare environments encouraged better emotional adjustment and motivation for self-management behaviors.

Overall, the findings demonstrated that psychological adaptation among elderly hypertensive patients is a dynamic and multidimensional process involving emotional adjustment, illness acceptance, coping strategies, and social support. Psychological adaptation was influenced not only by individual factors but also by family involvement, healthcare interactions, and ongoing chronic illness experiences.

Discussion

This study revealed that elderly patients with hypertension experience various psychological responses during the adaptation process to chronic illness. Emotional reactions such as fear, anxiety, uncertainty, and emotional burden emerged as common experiences among participants following hypertension diagnosis. These findings are consistent with previous studies reporting that chronic hypertension may significantly affect psychological well-being, particularly among elderly populations who face additional challenges related to aging, declining physical function, and fear of long-term complications (Zhang et al., 2021). Hypertension not only affects physiological health but also influences emotional stability, self-perception, and social functioning among older adults.

The findings also demonstrated that psychological adaptation is a gradual process that develops through acceptance, emotional regulation, and adjustment to chronic illness demands. Most participants gradually accepted their condition and attempted to maintain emotional balance through lifestyle adaptation, treatment adherence, and spiritual coping. This finding supports the concept of psychological adaptation proposed in chronic illness adaptation theory, which emphasizes that individuals continuously adjust cognitively, emotionally, and behaviorally to maintain psychological equilibrium despite ongoing health stressors (Aji, Gabriel Ching, et al., 2026b). Elderly patients who successfully adapt psychologically tend to demonstrate better emotional resilience and greater readiness to manage chronic disease-related challenges.

Another important finding in this study was the role of coping strategies in supporting psychological adaptation among elderly hypertensive patients. Participants frequently used spiritual coping, positive thinking, emotional acceptance, and social engagement to reduce stress and

maintain emotional well-being. Previous studies have shown that adaptive coping strategies are associated with improved emotional health, reduced anxiety, and better self-management behavior among patients with chronic diseases (Pujiyanto, 2021). Spirituality and religious practices may also serve as important protective factors among elderly individuals by enhancing emotional comfort, hope, and psychological resilience during chronic illness experiences.

The psychological adaptation process identified in this study also reflects how elderly individuals cognitively reinterpret chronic illness experiences over time. Emotional acceptance and spiritual coping appear to function as protective psychological mechanisms that help participants reduce emotional distress and maintain perceived control over their health conditions. This finding suggests that psychological adaptation among elderly hypertensive patients is not merely passive acceptance of illness but represents an active emotional and cognitive adjustment process that supports resilience and long-term self-management behavior.

These findings are also consistent with the Roy Adaptation Model, which explains that individuals continuously adapt to chronic illness through cognitive, emotional, and behavioral responses to environmental and physiological stimuli. Elderly patients in this study demonstrated adaptive responses through emotional acceptance, spirituality, and social engagement, which contributed to improved psychological adjustment and resilience in living with hypertension.

This study further identified the important contribution of family support and healthcare provider communication in facilitating psychological adaptation. Participants perceived that supportive family relationships and positive interactions with healthcare professionals increased emotional security, treatment motivation, and confidence in managing hypertension. These findings are consistent with previous evidence demonstrating that social support and patient-centered communication significantly influence psychological well-being and chronic disease adaptation among elderly populations (Aji et al., 2026). Primary care settings play a strategic role in supporting not only physical treatment but also emotional and psychological needs among elderly patients with chronic diseases.

From a psychological perspective, the findings indicate that emotional acceptance and adaptive coping mechanisms may function as protective psychological resources that help elderly patients maintain emotional stability despite chronic illness challenges. This adaptation process may strengthen perceived self-control, emotional resilience, and psychological well-being among older adults living with hypertension (Niu & Li, 2026).

Compared with previous studies that primarily emphasized blood pressure control, medication adherence, or psychological distress among hypertensive patients, this study provides a broader understanding of how elderly individuals actively construct psychological adaptation throughout the course of living with chronic hypertension. Rather than viewing adaptation as a simple outcome of successful disease management, the findings demonstrate that psychological adaptation is a dynamic process involving interconnected emotional, cognitive, behavioral, spiritual, and social dimensions. The emergence of emotional acceptance, spirituality, family support, and therapeutic communication as mutually reinforcing components suggests that successful adaptation develops through continuous interactions between individual psychological resources and the surrounding social environment. This multidimensional perspective extends previous hypertension research, which has generally examined these factors separately rather than as an integrated adaptation process (Trisna et al., 2026).

Another important contribution of this study is its extension of the Roy Adaptation Model within the context of chronic hypertension among older adults. While the Roy Adaptation Model conceptualizes adaptation as responses to internal and external stimuli, the present findings illustrate how elderly individuals actively reinterpret chronic illness experiences through emotional acceptance, spiritual meaning-making, supportive family relationships, and positive interactions with healthcare professionals. These findings suggest that psychological adaptation is not merely a

passive response to illness but an evolving process of constructing resilience and maintaining emotional equilibrium throughout long-term disease management. Consequently, this study contributes new empirical evidence supporting a more comprehensive understanding of psychological adaptation among elderly patients in primary healthcare settings and provides a theoretical basis for integrating psychosocial and nursing interventions into holistic hypertension management.

Implication

The findings of this study have important implications for nursing practice, primary healthcare services, and psychological health management among elderly patients with hypertension. Healthcare professionals, particularly nurses in primary care settings, should recognize that hypertension affects not only physical health but also emotional and psychological well-being among older adults. Psychological adaptation assessment should therefore become an important component of comprehensive hypertension management in elderly populations.

Primary healthcare providers are encouraged to develop holistic interventions focusing on emotional support, coping enhancement, patient empowerment, and family involvement to improve psychological adaptation among elderly hypertensive patients. Effective therapeutic communication, continuous emotional support, and patient-centered education may help elderly patients adapt more positively to chronic illness experiences. In addition, integrating psychosocial and spiritual approaches into hypertension management programs may improve emotional resilience, treatment adherence, and quality of life among elderly individuals living with chronic hypertension.

This study also contributes to the development of psychological and nursing knowledge regarding chronic illness adaptation among elderly populations. The findings may serve as a foundation for future intervention studies examining psychological support strategies, coping enhancement programs, and community-based psychosocial interventions for elderly patients with hypertension in primary healthcare settings. The novelty of this study lies in its exploration of psychological adaptation experiences among elderly hypertensive patients within primary care settings, emphasizing emotional coping, spirituality, illness acceptance, and psychosocial support as interconnected components of chronic illness adaptation. Unlike previous studies that mainly focused on physiological outcomes and medication adherence, this study provides a more comprehensive understanding of emotional and psychological adaptation processes among elderly individuals living with hypertension.

Nurses in primary healthcare settings are recommended to routinely assess psychological adaptation, emotional distress, and coping responses among elderly hypertensive patients as part of comprehensive chronic disease management.

Limitation

There are several limitations in this study that should be considered by future researchers. First, this study involved a relatively small number of participants from limited primary healthcare settings, which may limit the transferability of findings to broader elderly populations with hypertension. Second, the qualitative phenomenological approach focused on subjective participant experiences, which may be influenced by personal perceptions, emotional conditions, and social contexts during the interview process.

Third, this study primarily explored psychological adaptation experiences without examining quantitative psychological indicators such as anxiety levels, depression, stress, or quality of life measurements. Future studies are recommended to combine qualitative and quantitative approaches to provide more comprehensive understanding regarding psychological adaptation among elderly hypertensive patients. Finally, cultural, spiritual, and family-related factors

influencing psychological adaptation were not explored in greater depth and may require further investigation in future studies involving more diverse participant backgrounds and healthcare settings.

CONCLUSION

Psychological adaptation to hypertension among elderly patients in primary care is a complex and dynamic process involving emotional adjustment, illness acceptance, coping strategies, and psychosocial support. Elderly patients with hypertension experience various psychological responses, including fear, anxiety, emotional burden, and uncertainty related to chronic illness and aging. However, over time, most participants gradually develop adaptive coping mechanisms and emotional acceptance that help them maintain psychological balance and continue managing their health conditions. Family support, spirituality, positive healthcare communication, and supportive primary healthcare environments also play important roles in strengthening psychological adaptation and emotional resilience among elderly hypertensive patients.

This study contributes to the development of psychological and nursing knowledge by emphasizing that hypertension management among elderly populations should extend beyond physiological treatment and include psychological and emotional dimensions of chronic illness adaptation. Integrating psychosocial support, therapeutic communication, patient-centered care, and psychological adaptation assessment into primary healthcare services may improve emotional well-being and holistic hypertension management among elderly individuals living with chronic illness. Future research is recommended to involve broader participant populations, mixed-method approaches, and longitudinal designs to better understand long-term emotional adjustment and coping processes among elderly patients with hypertension.

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Authors' Contributions

Prima Trisna Aji conceived and designed the study, collected and analyzed the data, interpreted the findings, and drafted the manuscript. Tukimin Bin Sansuwito contributed to the study design, supervised the research process, critically reviewed the manuscript, and provided intellectual input. Chua Siew Kuan contributed to data interpretation, manuscript revision, and approved the final version of the manuscript. All authors read and approved the final manuscript.

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REFERENCES

Ade Rahayu. (2025). Metode Penelitian dan Pengembangan (R&D) : Pengertian, Jenis dan Tahapan. *DIAJAR: Jurnal Pendidikan Dan Pembelajaran*, *4*(3), 459–470. https://doi.org/10.54259/diajar.v4i3.5092

Aji, P. T., Bhadowy, A. S., & Rizkasari, E. (2026). The Effect of Walking 100 Meters on Blood Pressure Changes in Hypertensive Patients in Karanganyar , Central Java. *Healthcare Nursing Journal*, *8*(1), 116–123. https://doi.org/https://doi.org/10.35568/healthcare.v8i1.7227

Aji, P. T., Gabriel Ching, M. T., & Rizkasari, E. (2026a). Digital Pocketbook Education with a Nurse-Led Approach to Improve Hypertension Self-Management in Primary Care. *Abdimas Umtas: Jurnal Pengabdian Kepada Masyarakat*, *9*(1), 857–868. https://doi.org/https://doi.org/10.35568/abdimas.v9i2.7857

Aji, P. T., Gabriel Ching, M. T., & Rizkasari, E. (2026b). SMART-HTN Pocketbook Education and Improved Medication Adherence and Blood Pressure Control in Primary Care. *Jurnal Keperawatan Komprehensif*, *12*(2), 1–12. https://doi.org/https://doi.org/10.33755/jkk.v12i2.1012

Aji, P. T., Tania, M., Ching, G., & Rizkasari, E. (2026). Effectiveness of Hybrid Digital Learning for Hypertension Self- Management Education among Hypertensive Patients. *Journal of Education and Teacher Training Innovation*, *4*(1), 338–357. https://doi.org/https://doi.org/10.61227/rz573t06

Ashoorkhani;, A. B. H. H. H. E. R. majdzadeh; A. Y. A. R. M. M. M. (2024). The effect of the mobile "blood pressure management application" on hypertension self-management enhancement: a randomized controlled trial. *NURSING AND HEALTH POLICY PERSPECTIVE*, *3*(1), 1–10. https://doi.org/10.1186/s13063-021-05270-0

Cao, W., Milks, M. W., Liu, X., Gregory, M. E., Addison, D., Zhang, P., & Li, L. (2022). mHealth Interventions for Self-management of Hypertension: Framework and Systematic Review on Engagement, Interactivity, and Tailoring. *JMIR MHealth and UHealth*, *10*(3), 1–18. https://doi.org/10.2196/29415

Charchar, F. J., Prestes, P. R., Mills, C., Ching, S. M., Neupane, D., Marques, F. Z., Sharman, J. E., Vogt, L., Burrell, L. M., Korostovtseva, L., Zec, M., Patil, M., Schultz, M. G., Wallen, M. P., Renna, N. F., Islam, S. M. S., Hiremath, S., Gyeltshen, T., Chia, Y. C., … Tomaszewski, M. (2024). Lifestyle management of hypertension: International Society of Hypertension position paper endorsed by the World Hypertension League and European Society of Hypertension. *Journal of Hypertension*, *42*(1), 23–49. https://doi.org/10.1097/HJH.0000000000003563

Chen, S., Sun, X., Zhu, Q., Zhao, Y., Tang, J., & Song, H. (2023). Factors Influencing the Level of Depression and Anxiety of Community-Dwelling Patients with Schizophrenia in China during the COVID-19 Pandemic. *International Journal of Environmental Research and Public Health*, *20*(5), 1–14. https://doi.org/10.3390/ijerph20054376

Chen, Y., & Li, B. (2026). Study on the impact of latent classes of ego depletion on self-management behaviors in older adults with hypertension. *Journal Frontiers in Public Health*, *14*(1), 1–11. https://doi.org/10.3389/fpubh.2026.1771681

Kario, K., Okura, A., Hoshide, S., & Mogi, M. (2024). The WHO Global report 2023 on hypertension warning the emerging hypertension burden in globe and its treatment strategy. *Hypertension Research*, *47*(5), 1099–1102. https://doi.org/10.1038/s41440-024-01622-w

Kementerian Kesehatan. (2024). Memperkuat Layanan Primer. *Kementerian Kesehatan*, *171*(9), 1–60. https://link.kemkes.go.id/mediakom

Niu, R., & Li, K. (2026). Systematic review of the impact of digital health technologies on blood pressure control and treatment adherence in young and middle-aged hypertensive patients. *Frontiers in Cardiovasculer Medicine*, *11*(1), 1–10. https://doi.org/10.3389/fcvm.2026.1708019

Peleg, O., & Peleg, M. (2024). Is Resilience the Bridge Connecting Social and Family Factors to Mental Well-Being and Life Satisfaction? *Contemporary Family Therapy*, *47*(1), 87–101. https://doi.org/10.1007/s10591-024-09707-x

Pinho, L. G. De, & Afonso, C. (2025). Psychosocial and rehabilitation interventions and health gains in older persons in long-term care : A systematic review In ˆ. *International Journal of Nursing Studies*, *172*(September), 1–38. https://doi.org/10.1016/j.ijnurstu.2025.105219

Politi, M. T., Ferreira, J. C., & Patino, C. M. (2021). Nonparametric statistical tests: friend or foe?

Jornal Brasileiro de Pneumologia : Publicacao Oficial Da Sociedade Brasileira de Pneumologia e Tisilogia, *47*(4), 1–2. https://doi.org/10.36416/1806-3756/e20210292

Pujiyanto, P. T. A. E. R. (2021). Pengaruh Terapi Guided Imagery terhadap Perubahan Tekanan Darah pada Penderita Hipertensi di Wilayah Puskesmas Jayengan Surakarta. *Aisyiyah Surakarta Journal of Nursing*, *2*(1), 1–6. https://doi.org/https://doi.org/10.30787/asjn.v3i2.896PUJIYAN

Soares, D. (2025). Community Empowerment in The Prevention and. *International Journal of Community Services*, *5*(January 2024), 1–11. Google Scholar

Trisna, P., Hasbi, M., & Rizkasari, E. (2026). Roy Adaptation Model-Guided Nursing Management Of STEMI Complicated By Cardiogenic Shock: A Case Report. *Optimal Journal Clinical Case Report*, *01*(01), 91–109. https://jurnal.optimaluntuknegeri.com/index.php/clinical-case-report/article/view/553

Ummah, M. S. (2019). Urban growth and access to opportunities: A challenge for Latin America. *Sustainability (Switzerland)*, *11*(1), 1–14. http://scioteca.caf.com/bitstream/handle/123456789/1091/RED2017-Eng-8ene.pdf?sequence=12&isAllowed=y%0Ahttp://dx.doi.org/10.1016/j.regsciurbeco.2008.06.005%0Ahttps://www.researchgate.net/publication/305320484_SISTEM_PEMBETUNGAN_TERPUSAT_STRATEGI_MELESTARI

Zhang, W., Zhang, S., Deng, Y., Wu, S., Ren, J., Sun, G., Yang, J., Jiang, Y., Xu, X., Wang, T.-D., Chen, Y., Li, Y., Yao, L., Li, D., Wang, L., Shen, X., Yin, X., Liu, W., Zhou, X., … Cai, J. (2021). Trial of Intensive Blood-Pressure Control in Older Patients with Hypertension. *New England Journal of Medicine*, *385*(14), 1268–1279. https://doi.org/10.1056/nejmoa2111437