

THE EFFECT OF CADRE EMPOWERMENT ON ELDERLY BEHAVIOR IN PERFORMING HYPERTENSION EXERCISES AT POSYANDU RW 3 BAKALAN KRAJAN IN THE WORKING AREA OF CIPTOMULYO PUBLIC HEALTH CENTER

Zilka Nafi Habibah^{*}, Sugianto Hadi, Jupriyono, Pudji Suryani

Program Studi Sarjana Terapan Promosi Kesehatan, Poltekkes Kemenkes Malang
Jl. Besar Ijen No. 77C, Kasin, Kec. Klojen, Kota Malang, Jawa Timur 65112, Indonesia

Email: habibahzilka@gmail.com

Abstract

Hypertension remains a major health problem among the elderly, including in the working area of Ciptomulyo Public Health Center, especially at Posyandu RW 3 Bakalan Krajan. One non-pharmacological effort to control blood pressure is hypertension exercise, yet elderly participation in this activity is still low. This study aimed to determine the effect of cadre empowerment on elderly behavior in performing hypertension exercise. This study used a quantitative approach with a pre-experimental One Group Pretest-Posttest Design. The population consisted of 35 elderly people with hypertension selected using total sampling. Data were analyzed using the Wilcoxon Signed Rank Test. The results showed an increase in elderly behavior after cadre empowerment intervention. The mean score of knowledge increased by 66.15, attitude by 6.29, and action by 78.00. Statistical analysis showed a significant effect on elderly behavior, including knowledge, attitude, and action, with $p\text{-value} = 0.000 < 0.05$. The study concludes that cadre empowerment significantly influences elderly behavior in performing hypertension exercise and can be used as a community-based health promotion strategy.

Keywords: Cadre Empowerment, Elderly Behavior, Health Promotion, Hypertension Exercise Posyandu

Introduction

The elderly are an age group vulnerable to various degenerative diseases, one of which is hypertension (Akbar et al., 2021). Hypertension is a serious health problem because it can increase the risk of heart disease, stroke, kidney failure, and various other complications. According to the World Health Organization (WHO), the prevalence of hypertension continues to increase along with population aging (Kementrian Kesehatan RI, 2023). In Indonesia, the prevalence of hypertension among the elderly has also increased significantly.

One form of non-pharmacological prevention of hypertension is physical activity through hypertension exercises (Triyanto, 2017). Hypertension exercise is specifically designed to improve blood circulation, enhance blood vessel elasticity, and help control blood pressure. Regular implementation of hypertension exercises can improve blood circulation, increase vascular elasticity, reduce stress, and help control blood pressure. According to Hubaybah, regular hypertension exercises have been proven effective in lowering blood pressure among the elderly (Hubaybah et al., 2023). Despite these benefits, elderly participation in hypertension exercise activities remains low. This condition is influenced by limited knowledge, low motivation, and insufficient social support (Martani et al., 2022).

Health behavior is defined as an individual's response or action toward health-related stimuli, including knowledge, attitudes, and actual practices (Notoatmodjo, 2010). Lawrence Green's theory explains that health behavior is influenced by three main factors: predisposing factors, enabling factors, and reinforcing factors. Predisposing factors include knowledge, attitudes, and beliefs. Enabling factors include health facilities and infrastructure, while reinforcing factors include family support, health workers, and health cadres (Nasrullah, 2016).

The low participation of elderly individuals in hypertension exercises is influenced by several factors, such as limited knowledge, less positive attitudes toward physical activity, and lack of motivation to perform hypertension exercises regularly (Notoatmodjo, 2010). In this context, health cadres play an important role as community mobilizers in promotive and preventive health activities. Cadre empowerment is a process of improving the capabilities, knowledge, and skills of health cadres so that they can actively participate in promotive and preventive activities within the community (Suprianti, 2019).

Health cadres serve as intermediaries between health professionals and the community. Cadres function as educators, motivators, facilitators, and companions in promoting healthy lifestyles within the community. According to Habib, the success of community-based health programs is strongly influenced by the ability of cadres to provide information and motivation to the community (Habib & Fuadilah, n.d.). In efforts to control hypertension among the elderly, cadres play an important role in providing education regarding healthy lifestyles, physical activity, and the importance of regular hypertension exercises. Cadre empowerment is expected to increase awareness and participation among the elderly in maintaining their health (Atok et al., 2025).

Previous studies have shown that cadre empowerment can improve community health behavior. Roehadi, Putri Tuty, and Karimah Dini stated that health cadre empowerment can increase community participation in community-based health activities and improve community motivation to adopt healthy behaviors (Roehadi et al., 2016). Another study conducted by Oktaviani, Purwono, and Ludiana demonstrated that hypertension exercises are effective in reducing blood pressure among the elderly (Oktaviani et al., 2022). Furthermore, Suprianti's study also showed that well-empowered health cadres are able to improve community knowledge and awareness regarding the importance of healthy living behavior (Suprianti, 2019).

This study employed a quantitative approach with a pre-experimental design using the One Group Pretest-Posttest Design (Sugiyono, 2013). The cadre empowerment intervention was conducted through health education, mentoring, and motivation provided to the elderly regarding the importance of hypertension exercises as an effort to control blood pressure. Health cadres were also involved in implementing and monitoring hypertension exercise activities (Safrudin & Sariana, 2021).

Low knowledge levels were influenced by the limited health information received by the elderly regarding hypertension. According to Notoatmodjo, knowledge is an important factor influencing the formation of health behavior. Good knowledge increases individual awareness in maintaining health (Notoatmodjo, 2010).

These findings are consistent with Suprianti's study, which stated that cadre empowerment can improve community understanding of healthy living behaviors (Suprianti, 2019).

According to Lawrence Green's theory cited in Notoatmodjo, social support and the role of health cadres are reinforcing factors influencing changes in health behavior (Notoatmodjo, 2010). These findings are consistent with the study conducted by Roehadi, Putri Tuty, and Karimah Dini, which stated that cadre empowerment can increase community motivation to participate in health programs (Roehadi et al., 2016).

These findings are consistent with Hubaybah's study, which stated that regular hypertension exercises can help control blood pressure and improve physical fitness among the elderly (Hubaybah et al., 2023).

Method

This study employed a quantitative approach with a pre-experimental design using the One Group Pretest-Posttest Design (Sugiyono, 2013). This design was used to determine the effect of cadre empowerment on elderly behavior in performing hypertension exercises before and after the intervention was administered.

The study was conducted at Posyandu RW 3 Bakalan Krajan in the working area of Ciptomulyo Public Health Center in 2025. The population in this study consisted of all elderly individuals with hypertension who actively participated in posyandu activities, totaling 35 respondents. The sampling technique used was total sampling; therefore, the entire population was included as the research sample.

The independent variable in this study was cadre empowerment, while the dependent variable was elderly behavior in performing hypertension exercises, which included knowledge, attitudes, and actions. Data collection was conducted using research instruments in the form of knowledge, attitude, and action questionnaires administered to respondents before and after the intervention. In addition, observations were carried out to assess elderly participation in hypertension exercise activities.

The research instruments underwent validity and reliability testing before being used in the study. The test results indicated that all questionnaire items were valid and reliable, making them appropriate for data collection. The cadre empowerment intervention was conducted through health education, mentoring, and motivation provided to the elderly regarding the importance of hypertension exercises as an effort to control blood pressure. Health cadres were also involved in the implementation and monitoring of hypertension exercise activities (Safrudin & Sariana, 2021).

Data analysis was performed using univariate and bivariate analyses. Univariate analysis was used to describe respondent characteristics and the distribution of research data. Meanwhile, bivariate analysis was conducted using the Wilcoxon Signed Rank Test to determine the effect of cadre empowerment on elderly behavior before and after the intervention with a significance level of $\alpha = 0.05$.

Results

This study was conducted at Posyandu RW 3 Bakalan Krajan in the working area of Ciptomulyo Public Health Center in 2025. The data collection process was carried out through the stages of pretest, implementation of the cadre empowerment intervention, and posttest among respondents. The intervention was conducted through health education, cadre mentoring, and regular hypertension exercise sessions for elderly individuals with hypertension.

Respondent Characteristics

The respondent characteristics in this study included age, gender, and duration of hypertension. Based on the study findings, the majority of respondents were aged between 60–74 years, and most of them were female.

a. Distribution of Age and Gender

The majority of female respondents were more active in participating in posyandu activities and health programs compared to male respondents. This condition is attributed to women having higher health awareness and being more consistent in utilizing healthcare services. These findings are consistent with the study conducted by Wulandari, Sari, and Ludiana, which stated that elderly women have a higher participation rate in community health programs compared to elderly men (Wulandari et al., 2023).

b. Duration of Hypertension

Most respondents had experienced hypertension for more than one year. The duration of hypertension affects the level of awareness among the elderly in making efforts to control blood pressure. Elderly individuals who have suffered from hypertension for a longer period tend to better understand the importance of maintaining a healthy lifestyle and engaging in regular physical activity (Sumartini et al., 2019).

Results of Elderly Knowledge Analysis

Elderly knowledge regarding hypertension exercises increased after the cadre empowerment intervention was conducted. Before the intervention, most elderly respondents had a low level of knowledge regarding the benefits of hypertension exercises and the importance of physical activity in controlling blood pressure. The average knowledge score before the intervention was 33.14. The low level of knowledge was influenced by the limited health information received by the elderly regarding hypertension. According to Notoatmodjo, knowledge is an important factor influencing the formation of health behavior. Good knowledge can increase individual awareness in maintaining health (Notoatmodjo, 2010).

After the cadre empowerment intervention was implemented, the average knowledge score increased to 99.29, with an improvement difference of 66.15. The increase in knowledge indicates that health cadres were able to provide effective education to the elderly. Cadres delivered information using language that was easy to understand and provided direct assistance. These findings are consistent with Suprianti's study, which stated that cadre empowerment can improve community understanding of healthy living behavior (Suprianti, 2019).

Results of Elderly Attitude Analysis

The attitudes of elderly individuals toward the implementation of hypertension exercises showed positive changes after the intervention was conducted. Before the intervention, most elderly respondents had less supportive attitudes toward hypertension exercises. Some elderly individuals considered exercise activities unimportant and felt reluctant to participate regularly. The average attitude score before the intervention was 5.14. Less supportive attitudes were influenced by low motivation and limited understanding regarding the benefits of hypertension exercises. After the intervention, the average attitude score increased to 11.43, with an increase of 6.29.

The change in attitude indicates that health cadres played a role as motivators capable of increasing elderly awareness regarding the importance of physical activity in controlling hypertension. According to Lawrence Green's theory cited in Notoatmodjo, social support and the role of health cadres are reinforcing factors that influence changes in health behavior (Notoatmodjo, 2010). These findings are consistent with the study by Roehadi, Putri Tuty, and Karimah Dini, which stated that cadre empowerment can increase community motivation in participating in health programs (Roehadi et al., 2016).

Results of Elderly Action Analysis

The actions of elderly individuals in performing hypertension exercises improved after the cadre empowerment intervention was conducted. Before the intervention, most elderly respondents did not regularly participate in hypertension exercise activities. The average action score before the intervention was 0.00. The lack of elderly participation was influenced by limited knowledge, low motivation, and the absence of optimal assistance from health cadres.

After the intervention, the average action score increased to 78.00. Elderly individuals began to actively participate in hypertension exercise activities conducted at the posyandu. The increase in actions indicates that cadre empowerment not only improved knowledge and attitudes but also

encouraged actual behavioral changes among the elderly. These findings are consistent with Hubaybah's study, which stated that regular hypertension exercises can help control blood pressure and improve physical fitness among the elderly (Hubaybah et al., 2023).

Results of the Cadre Empowerment Effect Test

Bivariate analysis using the Wilcoxon Signed Rank Test showed a $p\text{-value} = 0.000 < 0.05$. These results indicate that there was a significant effect of cadre empowerment on elderly behavior in performing hypertension exercises. The study findings demonstrate that cadre empowerment is an effective health promotion strategy in improving elderly health behavior. Health cadres played roles in providing education, motivation, and assistance, enabling elderly individuals to participate more actively in hypertension exercise activities. Theoretically, these findings support Lawrence Green's theory, which explains that behavioral change is influenced by predisposing factors, enabling factors, and reinforcing factors.

Research Implications

The practical implication of this study is the importance of strengthening health cadre empowerment programs at the posyandu and public health center levels. Active and well-trained cadres can help improve the quality of promotive and preventive programs, particularly for elderly individuals with hypertension. In addition, the findings of this study may serve as a reference for healthcare professionals and future researchers in developing community-based health programs for hypertension control among the elderly.

Discussion

The findings of this study indicate that cadre empowerment has a significant effect on elderly behavior in performing hypertension exercises, particularly in the aspects of knowledge, attitudes, and actions. The increase in elderly knowledge after the intervention demonstrates that health education and mentoring provided by cadres were effective in improving respondents' understanding regarding the benefits of hypertension exercises and the importance of physical activity in controlling blood pressure. This finding is in line with Lawrence Green's behavioral theory, which explains that knowledge is a predisposing factor influencing behavioral change. Improved knowledge encourages individuals to develop positive attitudes and adopt healthier behaviors. The increase in elderly attitudes and actions observed in this study also suggests that cadres played important roles as educators and motivators in encouraging elderly participation in health activities. These results support the hypothesis that cadre empowerment can improve elderly health behavior through community-based health promotion strategies.

The results of this study are consistent with previous studies showing that cadre empowerment contributes positively to improving community health behavior. Suprianti (2019) reported that empowered health cadres were able to improve public awareness regarding healthy living behaviors, while Roehadi et al. (2016) found that cadre empowerment increased community participation in health programs. Furthermore, the findings are also supported by Hubaybah et al. (2023), who stated that regular hypertension exercises can effectively control blood pressure and improve physical fitness among the elderly. No major contradiction was identified between the findings of this study and previous research. However, this study provides additional evidence that cadre empowerment not only improves knowledge and attitudes but also encourages actual behavioral changes among elderly individuals in participating regularly in hypertension exercise activities. Therefore, cadre empowerment can be considered an effective and sustainable community-based strategy for hypertension prevention and control among the elderly.

Conclusion

This study demonstrated that cadre empowerment has a significant effect on elderly behavior in performing hypertension exercises at Posyandu RW 3 Bakalan Krajan in the working area of Ciptomulyo Public Health Center. Improvements in behavior were observed in the aspects of knowledge, attitudes, and actions among the elderly after the cadre empowerment intervention was implemented. Statistical analysis using the Wilcoxon Signed Rank Test showed a $p\text{-value} = 0.000 < 0.05$, indicating that cadre empowerment was effective in increasing elderly participation in hypertension exercise activities.

Health cadre empowerment can serve as a community-based health promotion strategy in efforts to control hypertension among the elderly. Health cadres play important roles as educators, motivators, and community companions in promoting healthy living behaviors.

This study has several limitations, including the relatively small number of respondents and the limited research setting, which was conducted in only one posyandu area; therefore, the findings cannot yet be generalized broadly. In addition, this study employed a pre-experimental design without a control group, making it possible for other factors outside the intervention to influence the study results.

Based on the findings of this study, public health centers and healthcare professionals are expected to continuously strengthen cadre empowerment programs through regular training and mentoring of health cadres. Future researchers are recommended to use stronger research designs with larger sample sizes and broader research areas in order to obtain more comprehensive findings.

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References

- [1] Akbar, Fredy, Darmiati, D., Arfan, F., & Putri, A. A. Z. (2021). Pelatihan Dan Pendampingan Kader Posyandu Lansia Di Kecamatan Wonomulyo. *Jurnal Abdidas*, 2(2), 392–397. <https://doi.org/https://Doi.Org/10.31004/Abdidas.V2i2.282>
- [2] Atok, Sarlince, Y., Sormin, R. E. M., Manek, B. D., Palalangan, D., & Babis., S. S. D. (2025). Peningkatan Kualitas Kesehatan Lansia Melalui Edukasi Kesehatan Di Desa Pukdale Kabupaten Kupang. *Jurnal Abdi Insani*, 12(4), 1737–1744. <https://doi.org/https://Doi.Org/10.29303/Abdiinsani.V12i4.2000>
- [3] Habib, & Fuadilah, M. A. (n.d.). Kajian Teoritis Pemberdayaan Masyarakat Dan Ekonomi Kreatif. *Journal Of Islamic Tourism Halal Food Islamic Traveling And Creative Economy*, 1(2), 82–110. <https://doi.org/https://Doi.Org/10.21274/Ar-Rehla.V1i2.4778>
- [4] Hubaybah, H., Fitri, A., Lesmana, O., & Putri, F. E. (2023). Edukasi Dan Pelatihan Senam Anti Hipertensi Pada Lansia Dalam Upaya Pencegahan Penyakit Hipertensi Di Wilayah Kerja Puskesmas Sengeti Kabupaten Muaro Jambi. *Jurnal Salam Sehat Masyarakat*, 4(2), 15–21. <https://doi.org/https://Doi.Org/10.22437/Jssm.V4i2.25534>
- [5] Istichomah, I. (2023). Upaya Peningkatan Pengetahuan Lansia Tentang Senam Hiperetensi Menggunakan Media Poster. *Bhakti Sabha Nusantara*, 2(1), 46–53. <https://doi.org/https://Doi.Org/10.58439/Bsn.V2i1.89>
- [6] Kementerian Kesehatan RI. (2023). *Profil Kesehatan Indonesia Tahun 2022*. In *Kementerian Kesehatan Republik Indonesia*.
- [7] Martani, Win, R., Kurniasari, G., & Angkasa., M. P. (2022). Pengaruh Senam Hipertensi Terhadap Tekanan Darah Pada Lansia : Studi Literature. *Jurnal Ilmu Keperawatan Dan Kebidanan*, 13(1), 83–87. <https://doi.org/https://Doi.Org/10.26751/Jikk.V13i1.1266>
- [8] Nasrullah, D. (2016). *Buku Ajar Keperawatan Gerontik Edisi 1. Edited By Taufik Ismail. 1st Ed.* Cv. Trans Info Media. <http://bppsdmk.kemkes.go.id/Pusdiksdmk/Wp-Content/Uploads/2017/08/Keperawatan-Gerontik-Komprehensif.Pdf>.
- [9] Notoatmodjo. (2010). *Metodologi Penelitian Kesehatan Notoatmodjo*. Rineka Cipta.
- [10] Oktaviani, Ayu, G., Purwono, J., & Ludiana. (2022). Penerapan Senam Hipertensi Terhadap Tekanan Darah. *Jurnal Cendikia Muda*, 2(2), 186–194.
- [11] Roehadi, Selamat, Tuty, S. P., & Dini, A. K. (2016). Tingkat Kemandirian Lansia Dalam Activities Daily Living Di Panti Sosial Tresna Werdha Senja Rawi. *Przegląd Lekarski*, 68(4), 231–238.
- [12] Safrudin, & Sariana, E. (2021). Pemberdayaan Kader Kesehatan Dalam Pengembangan Media Promosi Kesehatan Di Wilayah Rw 6 Kelurahan Jatiwarna. *Disiminasi Hasil Pengabdian Masyarakat*, 888–894.
- [13] Sugiyono. (2013). *Metodologi Penelitian Kuantitatif, Kualitatif Dan R & D*. Alfabeta.
- [14] Sumartini, Putu, N., Zulkifli, & Adhitya, M. A. P. (2019). Pengaruh Senam Hipertensi Lansia Terhadap Tekanan Darah Lansia Dengan Hipertensi Di Wilayah Kerja Puskesmas Cakranegara Kelurahan Turida Tahun 2019. *Jurnal Keperawatan Terpadu (Integrated Nursing Journal)*, 1(2), 47–55. <https://doi.org/https://Doi.Org/10.32807/Jkt.V1i2.37>
- [15] Suprianti, T. (2019). Pengendalian Hipertensi Intervensi Berbasis Masyarakat. *Public Health And Community Medicine*, 35(4), 1–2. <https://doi.org/https://Doi.Org/10.22146/Bkm.44654>
- [16] Triyanto, E. (2017). *Pelayanan Keperawatan Bagi Penderita Hipertensi. Cet. 1*. Graha Ilmu.

- [17] Wulandari, Ayu, Sari, S. A., & Ludiana. (2023). Penerapan Relaksasi Benson Terhadap Tekanan Darah Pada Pasien Hipertensi Di Rsud Jendral Ahmad Yani Kota Metro Tahun 2022. *Jurnal Cendikia Muda*, 3(2), 163–171.