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RESEARCH ARTICLE

PHARMACISTS' ROLES IN HYPERTENSION MANAGEMENT WITHIN INDONESIAN COMMUNITY-BASED ELDERLY HEALTH SERVICES: A QUALITATIVE STUDY

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ABSTRACT

OBJECTIVE

This study explores hypertension management within Indonesian Posyandu Lansia (community-based integrated service posts for older people). It aims to identify treatment practices, medication adherence, implementation barriers, and pharmacists' roles to inform health service management and policy development for aged care.

DESIGN

An observational qualitative study was carried out using a phenomenological approach. The data were gathered through semi-structured interviews with a total of 32 participants, including 14 elderly patients, 12 community cadres, and 6 healthcare professionals. The collected narrative data were analyzed using an inductive thematic analysis to identify essential patterns and phenomena.

SETTING

The research was carried out at the Banguntapan II and Piyungan Puskesmas (Community Health Centers) and their affiliated Posyandu Lansia (community-based integrated service posts for older people) in Bantul Regency, Indonesia.

MAIN OUTCOME MEASURES

Qualitative themes were identified regarding the implementation of hypertension treatment, medication adherence patterns, operational management barriers (e.g., funding and administration), and the integration of pharmacists into community-based settings.

RESULT

Posyandu activities primarily focus on routine monitoring and social engagement, yet medication adherence remains low as many elderly patients only take medication when symptomatic. Critical management barriers include restricted village funding and heavy administrative burdens. Regarding the pharmacist's role, their involvement is primarily promotive and preventive, focusing on drug information education, counseling, medication safety monitoring, and stock control. However, these roles are not yet optimized because health center management prioritizes in-facility pharmaceutical services over community outreach.

CONCLUSION

Effective hypertension management in community settings is hindered by operational and policy-related constraints. Pharmacists play an essential role in bridging education gaps and ensuring medication safety, yet their direct involvement remains limited. The practical implications of these findings suggest that strengthening interprofessional collaboration and revising policies to support direct pharmacist participation are vital for optimizing public health programs and improving clinical outcomes for the elderly population.

KEYWORDS

pharmacist, elderly, hypertension, adherence

INTRODUCTION

The role of pharmacists has become a primary focus as a critical component of public health services, particularly in meeting the needs of the elderly population, who are vulnerable to chronic conditions like hypertension [1]. In the Special Region of Yogyakarta, the number of hypertension sufferers aged 15 and over was estimated at 251,100 in 2021, yet only about 51.5% have received health services [2]. Bantul Regency itself recorded a high case burden of 102,807 cases in the same year, making it the most common disease treated at Puskesmas (Community Health Centers), including the Banguntapan II Health Center [3]. This increase in cases aligns with the rising trend of the elderly population, which has reached 14.5% of the total inhabitants in Bantul [4].

Hypertension is often called the "silent killer" because of its deadly impact on vital organs such as the heart, brain, and kidneys without showing obvious early symptoms [5,6]. Medically, the elderly are more susceptible to increased blood pressure due to the natural decline of physical functions, such as reduced blood vessel elasticity and the thickening of heart valves [6].

The greatest challenge in managing this disease is low medication adherence, which in the Yogyakarta region was recorded at only 53.5% [7]. This non-adherence is often triggered by boredom with long-term therapy, memory impairment (dementia), physical barriers to obtaining medication, and drug side effects [8]. Additionally, patients frequently stop taking their medication unilaterally when they feel their physical condition has slightly improved [9].

In this context, pharmacists hold significant potential as a key to improving adherence through education, counseling, and direct support [10]. Posyandu Lansia (Elderly Integrated Health Posts) serves as a highly strategic platform for this intervention due to its ease of access and direct interaction with the community [11]. Optimizing the role of pharmacists at Posyandu Lansia is expected to create more effective and targeted community-based health strategies for hypertension sufferers in Bantul Regency.

While previous research by Wulandari et al. [12] has analyzed pharmacist interventions in community pharmacies and Home Pharmacy Care by Nurfauzi et al. [13], there is a significant gap regarding the pharmacist's role within Posyandu Lansia, a vital community-based platform unique to Indonesia. Furthermore, most existing studies utilize quantitative or quasi-experimental designs to measure clinical outcomes. There remains a lack of qualitative evidence to fully understand how elderly patients, community cadres, and healthcare professionals perceive the integration of pharmacists into this specific setting. This study addresses these gaps by examining the implementation and stakeholder perspectives on pharmacist involvement in community-based hypertension management. Therefore, this study intends to describe the implementation of hypertension treatment and study the specific roles of pharmacists within the Posyandu Lansia program in Bantul Regency.

METHODS

STUDY DESIGN

This study utilized an observational qualitative design with a phenomenological approach. This approach was specifically selected because it enables the researcher to identify and consider the psychological meanings of participants' lived experiences through an in-depth analysis within the context of their daily lives [14]. Phenomenology focuses on these lived experiences, which are subsequently interpreted to derive specific meanings, allowing the phenomena of hypertension management to appear as they are perceived by the individuals involved [15]. This method was chosen to capture the rich, subjective narratives and perspectives of elderly patients, community cadres, and healthcare professionals, providing a deeper understanding of the complexities surrounding hypertension treatment and the professional roles of pharmacists in community-based settings. The reporting of this study follows the Consolidated Criteria for Reporting Qualitative Research (COREQ) guidelines to ensure methodological rigor and transparency.

LOCATION AND PARTICIPANTS

The study took place from October to December 2023 at Banguntapan II and Piyungan Puskesmas and their linked Posyandu Lansia in Bantul Regency. Participants were recruited through a strategy involving formal recommendations from Puskesmas staff, who then facilitated connections with community cadres serving as gatekeepers at various Posyandu locations.

Purposive and convenience sampling were used in this study to identify informants who could provide valuable information relevant to the study objectives. For the elderly, inclusion criteria were being ≥ 60 years old (or ≥ 45 for pre-elderly), having a confirmed diagnosis of hypertension (systolic blood pressure ≥ 140 mmHg) during the past month, taking prescription antihypertensive medication, and being an active Posyandu participant. Inclusion requirements for healthcare professionals and community cadres include active participation in the Posyandu Lansia program. Exclusion criteria for all categories include physical or mental health issues that prevent participation in the interview process.
The sample size was justified on the basis of suitability and adequacy, resulting in 32 participants (14 elderly patients, 12 community cadres, and 6 healthcare professionals). Throughout the recruitment process conducted by community cadres, all approached individuals consented to participate, resulting in zero withdrawals or non-participation. The data saturation process determined the ultimate participant count, and interviews were repeated until no significant changes in narratives or theme insights were seen, ensuring complete and robust conclusions.

DATA COLLECTION

Data were collected through face-to-face, semi-structured interviews conducted by the primary researcher. The primary researcher had no prior contact with the participants. Through the informed consent process, participants were informed of the researcher's background and the primary objective of the study. This approach allowed flexibility and in-depth exploration of participants' subjective experiences [16]. The interview guides were developed from the research objectives and theoretical framework, then validated through expert review and a pilot test with three elderly individuals and one cadre member to ensure clarity and appropriateness. Community cadres served as gatekeepers for recruitment at Posyandu Lansia locations. Each interview session lasted approximately 30 minutes and was held in a setting comfortable for participants. To ensure confidentiality and encourage open dialogue, all interviews were conducted privately between the researcher and the informant, with no non-participants present. All interviews were audio-recorded with written consent and transcribed verbatim in Bahasa Indonesia to preserve linguistic details and original meanings. To ensure data accuracy, transcripts were returned to participants for member checking before analysis. These narrative data were supplemented by field notes, photographs, and health records to provide contextual reference during inductive thematic analysis.

DATA ANALYSIS

The data were analysed using an inductive thematic analysis to identify recurring patterns and meaningful phenomena emerging from participants' experiences. Interviews were audio-recorded and transcribed verbatim in Bahasa Indonesia to preserve linguistic and contextual nuances. Data analysis was conducted manually by the primary researcher, without

the use of qualitative data analysis software, to maintain close engagement with the original narratives throughout the analytical process. The analysis involved three iterative stages: coding meaningful units from the transcripts, grouping similar codes into broader categories, and generating overarching themes inductively based on conceptual relationships identified within the data rather than from predefined theoretical frameworks. To enhance the trustworthiness and credibility of the findings, several strategies were employed, including source triangulation by comparing perspectives across elderly patients, community cadres, and healthcare professionals; member checking, whereby participants verified the accuracy of interview transcripts and interpretations; and peer debriefing with academic supervisors and peer researchers. An audit trail documenting coding decisions throughout the analytical process was maintained to ensure analytical rigor, minimise researcher bias, and enhance transparency.

ETHICS APPROVAL

This study received ethical approval from the Ethics Committee of Universitas Gadjah Mada (Ref. No. KE/UGM/058/EC/2023), where all participants provided written informed consent voluntarily after receiving a full explanation of the research' purpose and procedures.

RESULTS

SOCIO-DEMOGRAPHIC CHARACTERISTICS

This study involved three distinct groups with firsthand experience in hypertension management: elderly patients, community cadres, and healthcare professionals. Female participants accounted for over 90% of the sample, consistent with local demographic data. The perspectives of the 32 participants provide an understanding of community-based health services through diverse experiences. The study was conducted across several Puskesmas to capture varied perspectives on service delivery. Thematic analysis of participant responses identified key patterns in community-based care. The participant characteristics are presented in Table 1.

TABLE 1. OVERVIEW OF PARTICIPANTS' CHARACTERISTICS

Characteristics	Participants (n)	Percentage (%)
Gender		
Male	3	9.4
Female	29	90.6
Age (years)		
18 - 39	4	12.5
40 - 59	12	37.5
60 - 79	15	46.9
≥ 80	1	3.1
Participant Group		
Elderly Patients	14	43.8
Community cadres	12	37.5
Healthcare professional	6	18.7
Occupational/Role Breakdown (Staff & Cadres)		
Healthcare professional (n=6)		
Doctor	1	16.7
Nurse / Dental Nurse	3	50.0
Midwife	1	16.7
Medical Records Officer	1	16.7
Community cadres (n=12)		
- Head of Elderly Cadres	4	33.3
- Elderly Cadre Officer	8	66.7

Characteristics	Participants (n)	Percentage (%)
Workplace Location (Staff only)		
Puskesmas Banguntapan II	3	50.0
Puskesmas Piyungan	3	50.0
Years of Service (Staff only)		
< 1 year	1	16.7
1 – 10 years	1	16.7
11 – 20 years	3	50.0
> 20 years	1	16.7
Medical History (Elderly Patients only, n=14)		
Hypertension History (Duration 6 mo – 21 yrs)	11	78.6
Comorbidities (Diabetes, Heart, etc.)	3	21.4

Participants noted that healthcare professionals' experience varied significantly, ranging from 6 months to 27 years, with a professional average of 11 years. Older community cadres often received greater recognition than younger cadres [17]. Elderly participants had hypertension for 6 months to 21 years, with a mean age of 64 years, consistent with age-related hypertension risk [18]. Diverse participant backgrounds informed the study's insights are summarized in Table 2. The inductive thematic analysis of participant narratives revealed two major themes: (1) an overview of activities at Posyandu Lansia and (2) pharmacists' roles in Posyandu Lansia.

TABLE 2. SUMMARY OF THEMES AND CATEGORIES

Theme	Category	Subcategory	Sample Quotes
Overview of Activities at Posyandu Lansia	Blood Pressure and Health Examination	Measurement of blood pressure, weight, height, and Provision of Supplementary Food (PMT)	"Posyandu services involve weighing, monitoring blood pressure, blood sugar, height, and waist circumference periodically, complemented by providing limited supplementary food." (Cadre 4)
			"What we do routinely here is just weighing, then blood pressure, giving supplementary food, height, and body circumference, then there's abdominal circumference and waist circumference." (Cadre 6)
		Blood pressure measurement only	"Yes, if there's no other activity, it's necessary, right, they usually check it themselves, here it's just checking blood pressure, for height not really, for more serious diseases they have already checked themselves." (Cadre 12)
	Sources of Hypertension Treatment Information	Healthcare Professionals Puskesmas	"The information is often given to us here from the health center, if hypertension is like this, these are the characteristics, so we tell them it's like this." (Cadre 2)
			"Community cadres obtain hypertension knowledge through official training at the Puskesmas, which provides the crucial medical foundation necessary for them to perform their educational roles. (Cadre 6)
		Electronic and print media	"Knowledge is from, well, reading, reading in the newspaper, it's also on TV, I didn't have time, but now it's even on the phone." (Cadre 12)
	Elderly Patients Understanding	Good elderly patients understanding	"Elderly patients maintain health through regular exercise, diligent reading, and disciplined medication intake every morning right after breakfast." (Elderly 9)

Theme	Category	Subcategory	Sample Quotes
	of Hypertension Treatment		"Elderly patients reported symptomatic medication use, reducing frequency after pain subsided despite being initially instructed to take it twice daily.." (Elderly 13)
		Lack of elderly patients understanding	"As for consuming the medicine, it's rare now, only when I'm exhausted and drink a lot, or when I'm dizzy, then I take it." (Elderly 4)
			"If it's high then I drink it, if not, then no." (Elderly 5)
			"If it runs out and there's no one to take me, then no, but if someone takes me then yes, if no one takes me then I don't get checked." (Elderly 12)
	Enthusiasm of the Elderly Patients and Community Cadres	Presence of community cadres only	"Elderly patients found services provided solely by community cadres unsatisfying, highlighting the need for healthcare professionals to ensure higher quality." (Cadre 4)
			"If someone from the health center is there, at least they have an educational background, at least a health background, Yes, at least if it's just community cadres, I'm less satisfied." (Elderly 8)
		Presence of both community cadres and healthcare professionals	"Healthcare professionals presence offers psychological reassurance, boosting elderly motivation and happiness, which encourages more frequent attendance at health services.." (Cadre 7)
			"I didn't help because I already have medicine, I didn't get checked because I go routinely to the hospital." (Elderly 7)
			"Happy, then happy but not often, it's already rare." (Elderly 13)
	Constraints in Implementing Posyandu Lansia	Budgetary funds and administrative reporting	"The limited funds mean we can't do it, that's the constraint, sometimes we want homecare to also test blood, but it's limited so it didn't happen, only blood pressure was checked." (Cadre 10)
			"Funding facilities, yes the constraint is actually the issue of facilities." (Cadre 8)
		Absence of healthcare professionals	"Yes, if it's the health center, as mentioned before, if possible, please come here." (Cadre 9)
			"The health center doesn't know, they only know about two posyandu whereas they only know there's one health center, only the one at Kembang Tebu that is visited." (Cadre 6)
		Delayed medication delivery from Puskesmas	"This 1 week, I forgot, forgot, until I didn't know where the prescription was, wanted to ask again, this morning, the patient was already disappointed but already healthy, a week and it wasn't given, I forgot." (Cadre 2)
			"Because yesterday there was also a patient with a headache waiting for medicine until the headache was gone before it arrived hahahahha." (Cadre 3)

Theme	Category	Subcategory	Sample Quotes
		Healthcare professionals not bringing medication supplies	"Ceasing on-site medication delivery at Posyandu has caused disappointment among elderly participants who previously valued the convenience of local treatment." (Cadre 10)
	Pharmacist Involvement in Posyandu Lansia	Participation in Posyandu Lansia visits outside Puskesmas working hours	"Pharmacists prioritize in-facility services during regular working hours, limiting Posyandu participation to specific outreach schedules or times outside office hours." (Healthcare Professional 3)
Pharmacists' Roles in Posyandu Lansia	Promotive and Preventive	Promotive and preventive roles without curative services	"Pharmacists focus on promotive and preventive care, while curative services and medication distribution require a doctor's direct presence." (Healthcare Professional 4)
			"Pharmacists join routine Posyandu meetings for promotive and preventive counseling, as these community sessions generally do not include medical treatments." (Healthcare Professional 6)
		Promotive and preventive roles with indirect curative support	" Posyandu Banguntapan II provides limited medication for elderly patients struggling to reach the health center through healthcare professionals or cadre coordination." (Healthcare Professional 1)
	Drug Information Education	Education during Puskesmas visits	"Real education happens when, what's it called, when giving medicine, if the elderly posyandu joins, it means at most adding to going outside, kid." (Healthcare Professional 1)
		Health counseling and education sessions	"If at the usual posyandu there is no treatment, just posyandu eh promotive, preventive only, counseling sessions." (Healthcare Professional 6)
		Ensuring elderly patients health and safety	"Pharmacists are essential for ensuring medication safety, dose management, and stock control, promoting the wise and effective use of medicines." (Healthcare Professional 2)

OVERVIEW OF ACTIVITIES AT POSYANDU LANSIA

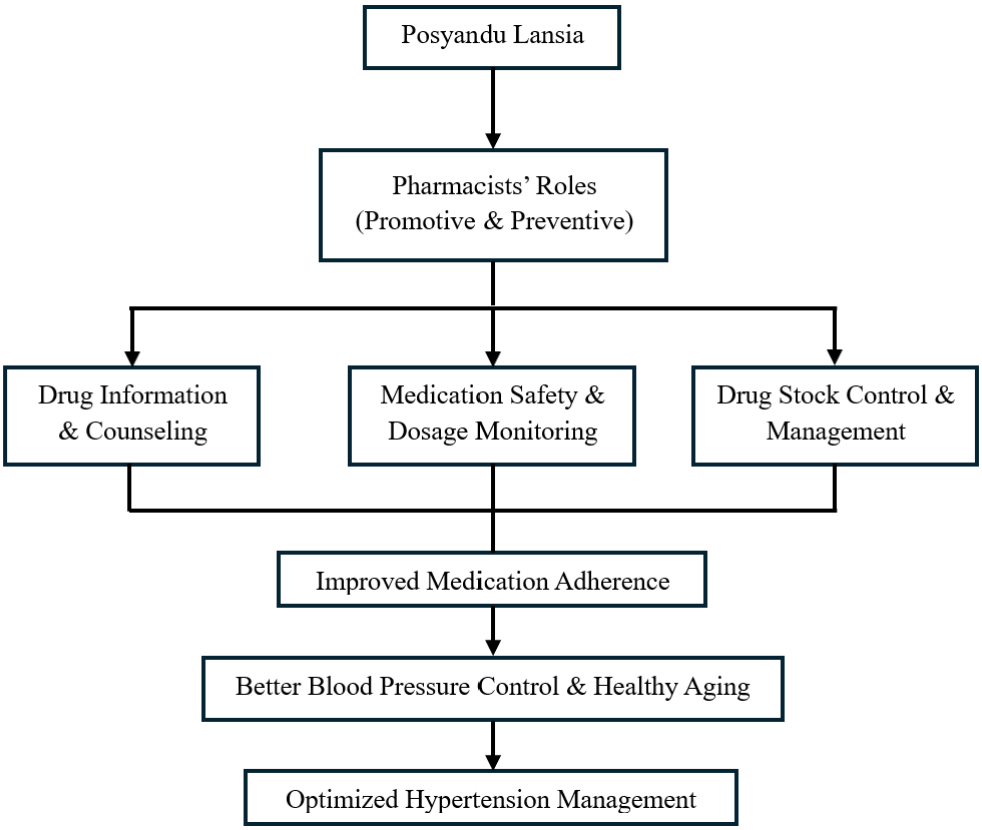
1. Blood Pressure and Health Examinations
   Posyandu Lansia provides health services focused on blood pressure monitoring and physical assessments, complemented by supplementary food. Social activities like group exercise and communal meals are also included to encourage participation and enhance the overall well-being of elderly participants.
2. Sources of Hypertension Treatment Information
   Most participants reported that hypertension information was delivered by Puskesmas staff through training and outreach to community cadres, along with routine meetings on medication management, elderly care, and blood pressure monitoring.
3. Elderly Understanding of Hypertension Treatment
   Elderly patients showed varying adherence to hypertension management. Disciplined individuals maintained consistency through regular medication and routine visits. Other participants practiced irregular habits, taking drugs only when symptomatic.

4. Enthusiasm of the Elderly Patients and Community Cadres
   Enthusiasm of the elderly patients and community cadres decreases when services are managed solely by community cadres. The presence of healthcare professionals significantly boosts motivation and community trust.
5. Constraints in Implementing the Posyandu Lansia
   Limited village funding restricts Posyandu services primarily to blood pressure checks and inadequate facilities. Community cadres struggle with heavy administrative reporting requirements for local authorities. These financial and operational constraints hinder the effective delivery of health programs for the elderly.
6. Pharmacist Involvement
   Some participants reported that Puskesmas prioritized in-facility services to ensure that healthcare delivery could be conducted in a well-organized manner. Others noted that, in accordance with existing regulations, pharmacists may also be involved in Posyandu Lansia activities through Puskesmas Keliling (Mobile Health Service Programs).

PHARMACISTS' ROLES IN POSYANDU LANSIA

1. Promotive and Preventive Roles
   Pharmacists primarily perform promotive and preventive roles in Posyandu Lansia through health education and counseling sessions. Curative services remain at Puskesmas, utilizing multidisciplinary teams of doctors and nurses.
2. Educational Information on Drugs
   Pharmacists deliver drug information and counseling during community health visits. Educational activities enhance medication understanding among elderly participants. Expert guidance ensures patient safety through proper dosage monitoring and risk management. The conceptual framework in Figure 1 was developed based on the themes and categories obtained during the thematic analysis of interview data. It illustrates pharmacists' promotive and preventive roles in Posyandu Lansia and the expected outcome of the roles to improve medication adherence, promote better blood pressure control and healthy aging, and optimize hypertension management.

FIGURE 1. CONCEPTUAL FRAMEWORK OF PHARMACISTS' ROLES IN POSYANDU LANSIA



DISCUSSION

The present study found that pharmacists' roles within Posyandu Lansia remain predominantly promotive and preventive, focusing on medication education and medication safety monitoring. Nevertheless, many elderly patients reported taking antihypertensive medications only when they experienced symptoms, including dizziness or fatigue. This behavior reflects persistent misconceptions regarding the largely asymptomatic nature of hypertension and points to the need for continuous medication counseling by pharmacists and other healthcare professionals [19,20]. Many participants appeared to perceive hypertension as an acute condition requiring treatment only during symptomatic episodes rather than as a chronic disease requiring lifelong management. Such misconceptions are concerning because hypertension is frequently asymptomatic despite progressive target-organ damage, allowing complications to develop even when patients feel well [20,21].

The persistent medication non-adherence observed in this study underscores the critical educational role of pharmacists in community-based hypertension management and aligns with findings from other regions in Indonesia. Research conducted in Bandung found that 53.5% of hypertensive patients in primary care were non-adherent, a trend often linked to the prolonged duration of treatment and the complexity of multi-drug regimens [19]. Similarly, operational barriers in Bantul, such as limited village funding and administrative challenges, mirror evaluations of Posyandu programs in Malang and Pekanbaru, where inadequate facilities and inconsistent medication availability have limited the quality of community-based services [22].

International evidence supports the findings of this study. Qualitative research in Malaysia found that poor medication adherence is linked to limited knowledge of antihypertensive therapy, including its mechanism and potential side effects. Some patients choose herbal or traditional medicines over prescribed antihypertensives, believing them to be safer or more effective [20]. These findings suggest that inadequate health literacy about chronic disease management remains a widespread issue in community healthcare settings in Southeast Asia [23]. Misconceptions about long-term antihypertensive use continue to cause irregular treatment patterns in various healthcare environments.

Pharmacist involvement in Posyandu Lansia remains constrained by several organizational and health system factors, despite its recognized benefits. Pharmaceutical services in Puskesmas continue to prioritize facility-based activities over community outreach programs [13]. In addition, human resource shortages, defined by high pharmacist-to-patient ratios and heavy workloads, often leave only one pharmacist responsible for the entire health center, thereby restricting opportunities to participate in Posyandu activities [24]. Structural barriers, administrative responsibilities, and limited time for community outreach further reduce pharmacists' capacity to provide continuous medication counseling and follow-up for elderly patients with hypertension [25].

Patient-centered pharmaceutical care should be further strengthened to address the gap between patients' medication-taking behaviors and evidence-based hypertension management [13,26]. The evidence suggests that pharmacists can play a greater role in providing Drug Information Services and medication counseling to identify and prevent drug-related problems (DRPs), including inappropriate medication use and incorrect dosing [13]. Previous studies have shown that pharmacist-led counseling improves patient satisfaction, strengthens trust in healthcare providers, and promotes long-term medication adherence [26]. These findings reinforce the importance of expanding pharmacists' clinical roles within Posyandu Lansia [12].

Healthcare policy also plays an essential role in strengthening pharmacists' contributions to hypertension management. The current findings indicate that local policies should attempt to promote the official incorporation of pharmacists into community outreach initiatives, such as Puskesmas Keliling and Posyandu Lansia. Indonesia could benefit from Japan's experience, where implementing a compensation system for community pharmacists delivering patient-centered home care has enhanced pharmacists' clinical responsibilities in drug treatment management [13]. Similarly, prior research in Indonesia has highlighted the significance of compensation in maintaining pharmacist-led pharmaceutical care services

[27]. Based on this information, current statistics suggest that targeted financial assistance may be essential to maintain chemists' involvement in community outreach initiatives such as Posyandu Lansia. These results provide a conceptual basis for broader health service management. By highlighting roles and barriers in Bantul, this study offers policymakers and healthcare managers in other Indonesian regions a framework to improve medication adherence and integrate pharmacists into community-based elderly health services.

Interprofessional collaboration is necessary for improving hypertension management in Posyandu Lansia, as multidisciplinary care has been shown to enhance blood pressure control and the quality of patient care [28]. While community cadres support community mobilization and routine monitoring, pharmacists, alongside physicians and nurses, contribute specialized expertise in pharmaceutical management, medication safety, and patient counseling. Previous evidence indicates that clear and regular communication, experience with collaboration, and understanding each other's capabilities and professional roles are important facilitators of effective interprofessional collaboration [29]. Strengthening these collaborative approaches may improve the continuity, safety, and quality of hypertension management for elderly patients participating in Posyandu Lansia.

STRENGTHS OF THIS RESEARCH

This study considers an important public health issue by exploring hypertension management among elderly patients in the underexplored Posyandu Lansia setting. It delivers practical knowledge of pharmacists' roles, identifies operational and policy-related barriers affecting hypertension management, and offers findings that may shape future community pharmacy practice and healthcare policy. Analytical thoroughness was maintained through continuous consultation with academic supervisors and peer researchers.

LIMITATIONS

There are certain limitations intrinsic to the qualitative design, such as a limited sample size (n = 32). This study was also conducted at a limited number of study sites, specifically two Puskesmas in Bantul Regency, which may limit the transferability of the findings to wider settings or other healthcare systems. Purposive and convenience sampling by community cadres may have introduced selection bias. The lack of direct pharmacist informants limited investigation of the pharmacy perspective. Interviewer bias or subjectivity in interpreting narratives is also possible. Despite these limitations, the research offers valuable insights for future pharmacist-led interventions in Posyandu Lansia.

MEANING OF THE STUDY

The pharmacist's role in Posyandu Lansia provides strategic implications for healthcare managers and policymakers to strengthen interprofessional collaboration at the community level. Program managers must ensure the consistent presence of healthcare professionals in the field to maintain community trust and enthusiasm.

FUTURE RESEARCH

A key challenge for subsequent research will be to identify the most effective and sustainable methods of pharmacist interventions in resource-constrained Posyandu contexts. Future research should be conducted with a larger, more diverse sample and across different areas to improve the transferability of the findings and to better understand perceptions of pharmacists' functions. For a better understanding of collaborative care, comparative studies among different stakeholders, such as elderly patients, physicians, nurses, and pharmacists, are strongly recommended. Further research should explore how digital media, like mobile phones, can support self-education alongside traditional healthcare. Structured pharmacist training and intervention studies should be evaluated for their impact on blood pressure control and medication adherence. These steps are crucial for developing pharmacy guidelines that ensure safe dosing and effective long-term treatment for the elderly.

CONCLUSION

Posyandu Lansia functions as an essential community-based platform for monitoring hypertension, yet medication adherence continues to be a challenge, as many elderly patients consume medication only when symptomatic.

Pharmacists play an essential role through promotive and preventive services, specifically in delivering drug information education and guaranteeing medication safety. To improve these public health programs, health center management should strengthen interprofessional collaboration by integrating pharmacists into Puskesmas Keliling, while policymakers should revise local regulations to support direct pharmacist involvement in community-based settings. This study presents new qualitative evidence on integrating pharmacists into Indonesia's Posyandu Lansia, an underexplored community-based platform. By identifying local barriers and clarifying pharmacists' roles in health promotion and prevention, these findings address a gap in community-based hypertension management.

AUTHORSHIP

All authors participated in drafting and critically revising the manuscript for important intellectual content, approved the final version of the manuscript, and agreed to be accountable for all aspects of the work. ARM performed data collection and analysis and drafted the manuscript. TMA contributed to the conceptualization and methodology of the study, provided supervision, and critically reviewed and edited the manuscript. DE contributed to the methodology, supervised the research process, and reviewed and edited the manuscript draft. NNW provided supervision, conceptualized the study, and reviewed the final draft.

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CONFLICTS OF INTEREST

The authors declare that there are no conflicts of interest with respect to the research, authorship, and/or publication of this article.

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