



Familial Support and Medication Adherence in Hypertension: A Comparative Evaluation at Two Indonesian Hospitals

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ABSTRACT

Hypertension remains a leading global risk factor for cardiovascular mortality. While lifelong pharmacological therapy is essential, poor medication adherence is a critical challenge. This study aimed to evaluate the association between familial support and medication adherence among hypertensive patients through a comparative analysis at X Hospital and Y Hospital. Using a quantitative cross-sectional design, 350 respondents were recruited via purposive sampling. Data were collected utilizing a validated Family Support Questionnaire and the Probabilistic Medication Adherence Scale (ProMAS). Descriptive analysis showed a high prevalence of familial support at both X Hospital (85.3%) and Y Hospital (87.0%). However, Chi-square tests revealed a significant difference in medication adherence levels ($p < 0.001$), with Y Hospital reporting a higher proportion of "High Adherence" (84.5%) compared to X Hospital (33.3%). Despite this baseline difference, Spearman's rank correlation demonstrated a significant positive relationship between familial support and adherence at both X Hospital ($r = 0.250$, $p = 0.004$) and Y Hospital ($r = 0.317$, $p < 0.001$). The primary limitations of this study are its cross-sectional design and reliance on purposive sampling, which restrict causal inferences. In conclusion, stronger family engagement is significantly associated with better medication adherence across different healthcare settings.



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ABSTRAK

Hipertensi tetap menjadi faktor risiko utama mortalitas kardiovaskular secara global. Meskipun terapi farmakologis seumur hidup sangat penting, kepatuhan pengobatan yang buruk menjadi tantangan kritis. Penelitian ini bertujuan untuk mengevaluasi hubungan antara dukungan keluarga dan kepatuhan pengobatan pada pasien hipertensi melalui analisis komparatif di Rumah Sakit X dan Rumah Sakit Y. Menggunakan desain potong lintang (cross-sectional) kuantitatif, 350 responden direkrut melalui purposive sampling. Data dikumpulkan menggunakan Kuesioner Dukungan Keluarga yang telah divalidasi dan Probabilistic Medication Adherence Scale (ProMAS). Analisis deskriptif menunjukkan prevalensi dukungan keluarga yang tinggi, baik di Rumah Sakit X (85,3%) maupun Rumah Sakit Y (87,0%). Namun, uji Chi-square mengungkapkan perbedaan yang signifikan pada tingkat kepatuhan pengobatan ($p < 0.001$), di mana Rumah Sakit Y melaporkan proporsi "Kepatuhan Tinggi" yang lebih besar (84,5%) dibandingkan Rumah Sakit X (33,3%). Meskipun terdapat perbedaan dasar ini, korelasi peringkat Spearman menunjukkan hubungan positif yang signifikan antara dukungan keluarga dan kepatuhan pengobatan, baik di Rumah Sakit X ($r = 0,250$, $p = 0,004$) maupun Rumah Sakit Y ($r = 0,317$, $p < 0.001$). Keterbatasan utama dari penelitian ini adalah desain cross-sectional dan penggunaan purposive sampling, yang membatasi kesimpulan sebab-akibat. Kesimpulannya, keterlibatan keluarga yang lebih kuat berhubungan secara signifikan dengan kepatuhan pengobatan yang lebih baik di berbagai pengaturan layanan kesehatan.

Kata Kunci: Hipertensi; Kepatuhan Pengobatan; Dukungan Keluarga; ProMAS; Asuhan Kefarmasian; Studi Cross-sectional

1. Introduction

Hypertension is a chronic non-communicable disease characterized by a persistent elevation of blood pressure, serving as a primary risk factor for cardiovascular and cerebrovascular mortality globally. According to the World Health Organization, over 1.13 billion individuals worldwide suffer from hypertension, a figure projected to encompass approximately 29% of the global population by 2025 [1], [2]. In developing nations, particularly Indonesia, the prevalence of hypertension continues to rise due to demographic shifts and lifestyle changes, necessitating urgent and effective management strategies [3].

The clinical management of hypertension relies heavily on lifelong pharmacological therapy to maintain blood pressure within normal ranges and prevent end-organ damage. However, medication adherence remains a complex challenge. Non-adherence is frequently reported among hypertensive patients, often driven by the asymptomatic nature of the disease, the complexity of drug regimens, and the economic burden of long-term treatment [1]. Poor adherence is directly correlated with uncontrolled blood pressure, increased hospitalization rates, and higher mortality risks [1], [4], [5].

To address non-adherence, social determinants of health, particularly familial support, have been identified as crucial reinforcing factors. The family unit serves as the primary source of support for patients, providing emotional encouragement, instrumental assistance (such as medication reminders), and informational support [6]. Studies indicate that patients who perceive high levels of familial support are significantly more likely to adhere to their medication regimens compared to those

lacking such support systems [7]. This is particularly relevant for older patients who may require assistance with daily activities and medication management [6], [8], [9].

Although previous research has examined these factors, a distinct gap remains in understanding the interplay between family dynamics and medication adherence across different healthcare environments. Specifically, comparing a central military hospital (X Hospital) with a private urban hospital (Y Hospital) provides insight into how varying socio-demographic profiles may relate to patient support systems. Therefore, this study aimed to conduct a comparative evaluation of familial support and medication adherence using the ProMAS instrument.

2. Methods

Study Design and Setting

This research employed a quantitative observational analytic design with a cross-sectional approach. The study was conducted at two distinct healthcare facilities to allow for comparative analysis: X Hospital, representing a central military hospital setting in Jakarta, and Y Hospital, representing a private general hospital in the Bekasi area. The researchers chose these specific healthcare facilities to investigate how differing clinical environments might influence patient profiles and their respective support networks.

Population and Sampling Technique

Researchers applied a purposive sampling method to recruit participants. The inclusion criteria were: aged ≥ 18 years, diagnosed with hypertension for at least 6 months, undergoing antihypertensive treatment for at least 3 months, possessing adequate cognitive status to complete the questionnaire, and willingness to participate. Patients with severe complications unable to communicate were excluded. A quota sample of 350 participants was determined to achieve sufficient statistical power for comparative analysis, distributed as 150 individuals from X Hospital and 200 from Y Hospital based on average monthly outpatient visits.

Data Collection Procedure

A validated 10-item Family Support Questionnaire was utilized to measure emotional and instrumental support domains on a 5-point Likert scale (Cronbach's $\alpha = 0.82$). Adherence was assessed using the validated Indonesian version of the Probabilistic Medication Adherence Scale (ProMAS), which consists of 18 items scoring adherence behaviors (Cronbach's $\alpha = 0.78$).

Data Analysis

In addition to Spearman's Rank Correlation, Chi-square tests were utilized to statistically compare the distribution of familial support and medication adherence levels between X Hospital and Y Hospital. Statistical significance was established at $p < 0.05$.

Ethical Considerations

The study protocol was conducted in strict adherence to ethical guidelines for medical research involving human subjects. Prior to the commencement of data collection, ethical clearance was officially obtained from the respective institutional review committees. For the research conducted at X Hospital, the ethical review process was facilitated and approved via STIKes IKIFA (Reference No: 028/STI-IKIFA/S1.Farm/01/III/2025). For the study site at Y Hospital, ethical approval was granted by the Health Research Ethics Committee of Binawan University (Approval No: 400/KEPK-UBN/V/2025). Furthermore, written informed consent was obtained from all respondents prior to questionnaire administration. Patients were provided with a

comprehensive explanation of the study's objectives, and they were assured of their anonymity, privacy, and the strictly voluntary nature of their participation.

3. Results and Discussion

Characteristics of Respondents

The demographic analysis of 350 respondents across both study sites reveals a distinct profile of the hypertensive population (**Table 1**). At X Hospital (n=150), the majority of patients were female (60.0%) and aged over 60 years (40.0%). A similar trend was observed at Y Hospital (n=200), where 60.5% were female and 46.5% were in the elderly category (>60 years). The predominance of elderly respondents aligns with global epidemiological data stating that age is a non-modifiable risk factor for hypertension, as arterial stiffening and reduced elasticity occur naturally with aging [11]. The higher proportion of female respondents may be attributed to hormonal changes postmenopause, specifically the reduction of estrogen, which plays a protective role in cardiovascular health [12].

Table 1. Distribution of Respondents by Demographic Characteristics

Characteristics	X Hospital (n=150)	Y Hospital (n=200)
Gender		
Male	60 (40.0%)	79 (39.5%)
Female	90 (60.0%)	121 (60.5%)
Age Category		
Adult (< 60 years)	90 (60.0%)	107 (53.5%)
Elderly (> 60 years)	60 (40.0%)	93 (46.5%)
Occupation		
Self-Employed / Entrepreneur	57 (38.0%)	81 (40.5%)
Other Sectors	93 (62.0%)	119 (59.5%)

In terms of occupation, a notable difference was observed. At Y Hospital, the largest occupational group was self-employed/entrepreneur (40.5%), whereas at X Hospital, the distribution was more varied. This socioeconomic variation is significant as it may influence the flexibility of time for medical visits and the financial capacity for supporting treatment, which are indirect factors in medication adherence.

Descriptive Analysis of Familial Support and Medication Adherence

Univariate analysis demonstrated that the level of familial support reported by patients was predominantly high (**Table 2**). At X Hospital, 85.3% of respondents perceived high familial support, a figure comparable to the 87.0% observed at Y Hospital. This finding suggests that the cultural context in Indonesia, which emphasizes strong kinship ties and filial piety, plays a vital role in patient care.

Table 2. Distribution of Familial Support and Medication Adherence Levels

Variable	X Hospital (n=150)	Y Hospital (n=200)
Familial Support		
High Support	128 (85.3%)	174 (87.0%)
Moderate / Low Support	22 (14.7%)	26 (13.0%)
Medication Adherence (ProMAS)		
High Adherence (Score 15-18)	50 (33.3%)	169 (84.5%)
Moderate - High Adherence (Score 10-14)	78 (52.0%)	26 (13.0%)
Moderate - Low / Low Adherence (Score 0-9)	22 (14.7%)	5 (2.5%)

Consequently, medication adherence levels measured by the ProMAS revealed varying distributions. High adherence was reported by 84.5% of patients at Y Hospital, whereas the majority of patients at X Hospital (52.0%) fell into the moderate-high adherence category. The parallel between high support and high adherence in the descriptive data provides preliminary evidence of the link between these two variables. When families are actively involved, patients tend to exhibit a higher probability of executing positive adherence behaviors [6].

Association Between Familial Support and Medication Adherence

The bivariate analysis utilizing Spearman's Rank Correlation revealed a significant positive association at both institutions (**Table 3**). At X Hospital, the analysis yielded a correlation coefficient of $r = 0.250$ ($p = 0.004$), indicating a weak positive relationship. At Y Hospital, the correlation was significantly stronger at $r = 0.317$ ($p < 0.001$), indicating a weak to moderate positive relationship.

Table 3. Spearman's Rank Correlation Analysis: Familial Support vs. Medication Adherence

Study Site	n	Correlation Coefficient (r)	Sig. (2-tailed) p-value	Interpretation
X Hospital	150	0.250	0.004	Significant, Weak Correlation
Y Hospital	200	0.317	< 0.001	Significant, Moderate Correlation

To further address the comparative objective of this study, Chi-square tests for independence were conducted to compare the distribution of support and adherence levels between the two healthcare settings, as detailed in **Table 4**.

Table 4. Chi-Square Comparison of Familial Support and Medication Adherence Between Hospitals

Variable	X Hospital (n=150)	Y Hospital (n=200)	p-value (Chi-Square)
Familial Support			0.428
High	126 (84.0%)	174 (87.0%)	
Moderate / Low	24 (16.0%)	26 (13.0%)	
Medication Adherence			< 0.001*
High	50 (33.3%)	169 (84.5%)	
Moderate-High	78 (52.0%)	26 (13.0%)	
Moderate-Low / Low	22 (14.7%)	5 (2.5%)	

*Statistically significant difference ($p < 0.05$).

The comparative analysis revealed no statistically significant difference in familial support levels between the two hospitals ($p = 0.428$), indicating that high family engagement is uniformly prevalent across both demographics. However, a highly significant statistical difference was observed in medication adherence levels ($p < 0.001$). While Y Hospital recorded a dominant 84.5% of patients in the highest adherence category, the majority of patients at X Hospital (52.0%) fell into the moderate-high adherence tier. This cross-tabulation highlights that while familial support remains consistent, other socio-demographic or institutional variables may heavily influence the final adherence behaviors.

These findings support the hypothesis that familial support is positively associated with adherence behaviors among hypertensive patients. The positive correlation aligns with the Health Belief Model, where "cues to action" provided by family members (such as reminding patients to take medicine or accompanying them to check-ups) are linked to better adherence [12], [13]. The slightly stronger correlation at Y Hospital may be related to the demographic factor of employment, as a higher proportion of self-employed patients might utilize family scheduling assistance differently; however, further qualitative research is needed to support this observation.

The results contradict studies that isolate individual motivation as the sole predictor of adherence. Instead, this research reinforces the view that adherence is a social behavior influenced by the immediate environment [14], [15]. The psychological comfort provided by family (emotional support) reduces the stress associated with chronic illness management, thereby encouraging patients to sustain their long-term therapy regimens [6]. Therefore, interventions focusing solely on the patient without engaging the family unit may miss a crucial lever for improving clinical outcomes.

Hospital-Specific Factors Influencing Medication Adherence: Similarities and Differences

Differences between the two hospitals were also evident in the patients' socio-economic profiles and access to healthcare resources. Y Hospital, situated in a more urbanized area, recorded a higher proportion of self-employed/entrepreneurial patients (40.5%) compared to X Hospital (38.0%). This demographic variation suggests that patients at Y Hospital may possess greater financial accessibility and time flexibility to adhere to treatment regimens, as self-employed individuals often benefit from more adaptable schedules.

Furthermore, institutional programs play a pivotal role in fostering familial support and enhancing medication adherence. Y Hospital, seemingly leveraging broader access to healthcare resources, appears to integrate family members more actively into patient education initiatives. This strategy likely contributes to the higher levels of familial support and superior medication adherence observed at this facility. Conversely, X Hospital may encounter greater challenges in engaging patient families, potentially due to the lower socio-economic constraints prevalent among certain patient segments.

Limitations

This study has several limitations. First, the cross-sectional design prevents the establishment of causality between familial support and medication adherence. Second, purposive sampling may introduce selection bias, limiting the generalizability of the findings. Third, the reliance on self-reported questionnaires introduces the possibility of recall bias. Finally, important confounding factors—such as exact duration of hypertension, specific comorbidities, and complexity of polypharmacy—were not fully controlled in the analysis, nor were clinical outcomes (e.g., actual blood pressure control) measured.

4. Conclusion

This comparative study demonstrates a significant positive association between familial support and medication adherence among hypertensive patients in both military and private healthcare settings. While consistent emotional and instrumental encouragement from family members is linked to positive adherence behaviors, the correlation strength remains weak to moderate, and causality cannot be inferred.

Healthcare providers are encouraged to consider integrating family-based education into pharmaceutical care to support patient adherence.

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Conflict of Interest:

The authors declare no conflict of interest.

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