

(Research) Article

The Relationship Between Mothers' Knowledge and Attitudes Toward Hypertension Prevention Behavior in South Polongbangkeng District, Takalar Regency, 2026

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Abstract: The effectiveness of hypertension prevention in communities depends critically on individuals' knowledge of risk factors and their attitudes toward healthy behaviors. This study examines the relationship between mothers' knowledge and attitudes toward hypertension prevention behavior in South Polongbangkeng District, Takalar Regency, 2026. An observational analytic quantitative design with a cross-sectional approach was employed. A total of 200 mothers were selected as respondents. Data were collected using structured questionnaires assessing knowledge, attitude, and hypertension prevention behavior, then analyzed using chi-square test at a significance level of $\alpha = 0.05$. Results showed that the majority of respondents had good knowledge (89.0%), good attitudes (91.0%), and good hypertension prevention behavior (77.0%). Statistical tests revealed a significant association between mothers' knowledge and hypertension prevention behavior ($p = 0.000$) and between mothers' attitudes and hypertension prevention behavior ($p = 0.000$). It is concluded that mothers' knowledge and attitudes are significantly associated with hypertension prevention behavior. Health workers are recommended to strengthen health education and promotion programs targeting mothers to support hypertension prevention in the community.

Keywords: Cross-Sectional Study; Health Behavior; Hypertension Prevention; Mothers' Attitudes; Mothers' Knowledge.

1. Introduction

Background and Context

Hypertension is one of the most important non-communicable diseases requiring early prevention, as it can develop silently and lead to serious complications including heart disease, stroke, and renal disorders (World Health Organization [WHO], 2025). Hypertension prevention behaviors can be carried out through healthy lifestyles, such as reducing salt consumption, increasing physical activity, maintaining ideal body weight, avoiding tobacco, limiting alcohol intake, and regularly checking blood pressure (WHO, 2025; Charchar et al., 2024; Elmakki, 2025). The ideal goal in community health development is for as many families as possible to prevent hypertension as early as possible through consistent healthy living habits in daily life (WHO, 2025; Elmakki, 2025).

Globally, WHO reported that in 2024 approximately 1.4 billion adults aged 30–79 years were living with hypertension, and around 44% of them were unaware of their condition (WHO, 2025). In Indonesia, the prevalence of hypertension among individuals aged ≥ 18 years based on Riskesdas 2018 was 34.1%, higher than the 25.8% recorded in Riskesdas 2013 (Ministry of Health of Republic of Indonesia [Kemenkes RI], 2021). At the provincial level, the prevalence of high blood pressure in South Sulawesi in 2018 was 31.7% according to the Central Bureau of Statistics (BPS, 2018). At the district level, data from the Takalar District Health Profile 2023 indicate that hypertension ranked first among the ten most prevalent diseases in Takalar Regency, and a study in the working area of Pattallassang Health Center

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also reported 75 elderly individuals with hypertension in February 2023 (Hermadin et al., 2025; Kamriana et al., 2024).

The high incidence of hypertension indicates that it is not only an individual clinical problem but also a serious public health concern closely linked to morbidity, mortality, and healthcare expenditure burdens (WHO, 2025). Hypertension is often referred to as a “silent killer” because many sufferers experience no symptoms until complications arise, making early detection through blood pressure measurement critically important (WHO, 2025). If left uncontrolled, hypertension can increase the risk of heart disease, stroke, kidney disease, and various other chronic health disorders (WHO, 2025; Elmakki, 2025). Therefore, primary prevention through behavioral change and strengthening community health literacy represents a highly relevant strategy to reduce the long-term impact of hypertension (Elmakki, 2025; Charchar et al., 2024).

The Indonesian government has implemented various programs to address hypertension through non-communicable disease control initiatives, health promotion, early detection, and strengthening of primary care services (Kemenkes RI, 2024; WHO, 2025). One key approach being actively promoted is health promotion through healthy behavior education and routine blood pressure monitoring in communities as a form of self-awareness toward hypertension risk factors (Kemenkes RI, 2024). Additionally, strengthening Posbindu PTM (community-based non-communicable disease screening posts), screening at primary healthcare facilities, and provision of validated antihypertensive medications and blood pressure measurement tools are integral parts of population-level hypertension control strategies (WHO, 2025; Kemenkes RI, 2024). These efforts are fundamentally aimed at ensuring that communities not only understand the dangers of hypertension but also develop positive attitudes and concrete habits to prevent it (Kemenkes RI, 2024; Xu et al., 2024).

Research Problem and Significance

Knowledge is an important determinant of hypertension prevention behavior, as individuals who understand risk factors, complications, and methods for hypertension control are more likely to engage in appropriate health behaviors (Maluwa et al., 2024; Ralapanawa et al., 2020; Rhamtallah et al., 2025). Attitudes also play a significant role, as positive attitudes toward hypertension management can encourage adherence to healthy diets, physical activity, blood pressure monitoring, and other prevention practices (Ahmed et al., 2025; Zhang et al., 2025; Ranasinghe et al., 2025). Within the family context, mothers hold a strategic position as they commonly influence food choices, daily habit regulation, health monitoring of family members, and health-seeking decision-making, making their knowledge and attitudes particularly relevant to household-level hypertension prevention behavior (Maluwa et al., 2024; Havugimana et al., 2024). Several studies have also demonstrated that knowledge-attitude-practice (KAP)-based interventions can improve hypertension prevention and management behaviors, positioning knowledge and attitude as key variables in this study (Xu et al., 2024; Ahmed et al., 2025; Zhang et al., 2025). Based on this background, this study aims to examine the relationship between mothers' knowledge and attitudes toward hypertension prevention behavior in South Polongbangkeng District, Takalar Regency, 2026.

Research Objectives

This study pursues two primary objectives: (1) to analyze the association between mothers' knowledge and hypertension prevention behavior; and (2) to examine the association between mothers' attitudes and hypertension prevention behavior in South Polongbangkeng District, Takalar Regency.

2. Literature Review

Hypertension and Public Health

Hypertension is a chronic cardiovascular condition defined as persistently elevated blood pressure $\geq 140/90$ mmHg. It is a leading modifiable risk factor for cardiovascular diseases, stroke, kidney failure, and premature mortality worldwide (WHO, 2025). Lifestyle modifications including dietary sodium restriction, regular physical activity, weight management, smoking cessation, and alcohol limitation constitute the foundation of hypertension prevention (Charchar et al., 2024).

Knowledge-Attitude-Practice (KAP) Framework

The Knowledge-Attitude-Practice (KAP) model provides an important theoretical framework for understanding hypertension prevention behavior. This model posits that knowledge forms the cognitive basis that shapes attitudes, which in turn influence behavioral practices. Studies consistently demonstrate that higher levels of hypertension knowledge are

associated with better adherence to lifestyle modifications and medication regimens (Ralapanawa et al., 2020; Rhamttallah et al., 2025; Paczkowska et al., 2021). Positive attitudes toward hypertension management further reinforce preventive behaviors such as regular blood pressure monitoring, dietary changes, and engagement with healthcare services (Ahmed et al., 2025; Zhang et al., 2025).

Mothers as Key Health Agents in the Family

Within family settings, mothers play a central role as primary caregivers and health decision-makers. Mothers typically regulate household food consumption, establish daily health routines, and influence the health-seeking behavior of family members. Research has demonstrated that caregiver-targeted health education and family self-management programs can significantly improve hypertension control outcomes (Susanto et al., 2024; Maluwa et al., 2025). The knowledge-practice gap where individuals with adequate knowledge fail to translate it into consistent preventive action underscores the need for interventions that address not only cognitive but also attitudinal and structural determinants of health behavior (Faleni et al., 2026; Abu et al., 2018).

Hypertension in Pregnancy and Women's Health

At the intersection of hypertension and women's health, knowledge and attitudes become particularly critical during pregnancy. Preeclampsia, a hypertensive disorder of pregnancy typically manifesting after 20 weeks of gestation, affects approximately 3–8% of women globally and can progress to eclampsia, HELLP syndrome, organ damage, preterm birth, and maternal or fetal death if not recognized early (WHO, 2025). Studies have shown that low maternal knowledge of preeclampsia warning signs and negative attitudes toward antenatal care are primary barriers to timely health-seeking behavior (Havugimana et al., 2024; Igbokwe et al., 2025; Muhindo et al., 2025). History of hypertensive disorders in pregnancy is also associated with increased long-term risk of chronic hypertension and cardiovascular disease (Traub et al., 2024).

3. Research Methodology

Research Design and Setting

This study employed an observational analytic quantitative design with a cross-sectional approach, aimed at investigating the relationship between mothers' knowledge and attitudes toward hypertension prevention behavior in South Polongbangkeng District, Takalar Regency, in 2026. The study was conducted from January to March 2026 in the working area of the South Polongbangkeng Health Center.

Sample and Data Collection

The study population comprised all mothers residing in South Polongbangkeng District. A total of 200 respondents were recruited using purposive sampling. Inclusion criteria required respondents to be mothers aged 20–50 years who were permanent residents of the district and willing to participate. Data were collected using structured questionnaires covering four domains: respondent characteristics (age, education level, occupation), knowledge of hypertension (risk factors, complications, and prevention strategies), attitude toward hypertension prevention, and hypertension prevention behavior. Each domain was categorized as “good” or “poor” based on established scoring criteria.

Data Analysis

Data were analyzed using two approaches. Univariate analysis was performed to describe the frequency distribution of each variable. Bivariate analysis using the Pearson chi-square test was conducted to examine the association between mothers' knowledge and attitudes (independent variables) and hypertension prevention behavior (dependent variable). The level of statistical significance was set at $\alpha = 0.05$. Ethical approval was obtained from the institutional review board, and all participants provided written informed consent prior to data collection.

4. Results

Characteristics of Respondents

Table 1. Characteristics of Respondents by Age, Education, and Occupation in South Polongbangkeng District, Takalar Regency, 2026.

Characteristics	n	%
Age (years)		
20 – 30	27	13.5
31 – 40	30	15.0
41 – 50	143	71.5
Education Level		
Primary School (SD)	76	38.0
Junior High School (SMP)	41	20.5
Senior High School (SMA)	62	31.0
University (Sarjana)	21	10.5
Occupation		
Employed	21	10.5
Housewife (IRT)	179	89.5
Total	200	100.0

Source: Primary Data, 2026

Table 1 presents the demographic characteristics of the 200 respondents. The majority were aged 41–50 years ($n = 143$; 71.5%), followed by the 31–40 age group ($n = 30$; 15.0%) and the 20–30 age group ($n = 27$; 13.5%). Regarding educational attainment, most respondents had completed primary school (SD; $n = 76$; 38.0%), followed by senior high school (SMA; $n = 62$; 31.0%), junior high school (SMP; $n = 41$; 20.5%), and university degree (Sarjana; $n = 21$; 10.5%). In terms of occupation, the vast majority were housewives (IRT; $n = 179$; 89.5%), while only 21 respondents (10.5%) were employed outside the home.

Distribution of Knowledge, Attitude, and Prevention Behavior

Table 2. Distribution of Respondents by Knowledge, Attitude, and Hypertension Prevention Behavior in South Polongbangkeng District, Takalar Regency, 2026.

Variable	n	%
Knowledge		
Good	178	89.0
Poor	22	11.0
Attitude		
Good	182	91.0
Poor	18	9.0
Hypertension Prevention Behavior		
Good	154	77.0
Poor	46	23.0
Total	200	100.0

Source: Primary Data, 2026

Table 2 presents the distribution of respondents by knowledge, attitude, and hypertension prevention behavior. The majority had good knowledge ($n = 178$; 89.0%), while 22 respondents (11.0%) had poor knowledge. Regarding attitudes, 182 respondents (91.0%) had good attitudes and 18 (9.0%) had poor attitudes. In terms of prevention behavior, 154 respondents (77.0%) demonstrated good hypertension prevention behavior, while 46 (23.0%) exhibited poor behavior. These findings indicate that most respondents had positive knowledge, attitudes, and prevention behaviors.

Association Between Knowledge, Attitude, and Prevention Behavior

Table 3. Association Between Knowledge and Attitudes of Mothers with Hypertension Prevention Behavior in South Polongbangkeng District, Takalar Regency, 2026.

Variable	Good Behavior		Poor Behavior		Total	
	n	%	n	%	n	%
Knowledge						
Good (n=178)	145	81.5	33	18.5	178	100
Poor (n=22)	9	40.9	13	59.1	22	100
<i>p-value = 0.000</i>						
Attitude						
Good (n=182)	147	80.8	35	19.2	182	100
Poor (n=18)	7	38.9	11	61.1	18	100
<i>p-value = 0.000</i>						
Total	154	77.0	46	23.0	200	100

Source: Primary Data, 2026

Table 3 presents the bivariate analysis results. Among the 178 respondents with good knowledge, 145 (81.5%) demonstrated good hypertension prevention behavior, while 33

(18.5%) showed poor behavior. Of the 22 respondents with poor knowledge, only 9 (40.9%) had good prevention behavior, and 13 (59.1%) had poor behavior. The chi-square test yielded $p = 0.000$ ($p < 0.05$), indicating a statistically significant association between mothers' knowledge and hypertension prevention behavior. Among the 182 respondents with good attitudes, 147 (80.8%) had good prevention behavior and 35 (19.2%) had poor behavior. Of the 18 respondents with poor attitudes, 7 (38.9%) had good prevention behavior and 11 (61.1%) had poor behavior. The chi-square test yielded $p = 0.000$ ($p < 0.05$), confirming a statistically significant association between mothers' attitudes and hypertension prevention behavior.

5. Discussion

Association Between Mothers' Knowledge and Hypertension Prevention Behavior

This study found a statistically significant association between mothers' knowledge and hypertension prevention behavior ($p = 0.000$). Among mothers with good knowledge, 81.5% demonstrated good prevention behavior, compared to only 40.9% among those with poor knowledge. These findings indicate that higher knowledge levels are associated with greater likelihood of engaging in preventive practices, as knowledge enables individuals to understand risk factors, complications, and daily prevention steps (Mashuri et al., 2024; Charchar et al., 2024). Good knowledge of hypertension supports prevention behaviors such as salt restriction, increased physical activity, weight management, and routine blood pressure monitoring (Charchar et al., 2024; Mashuri et al., 2024).

These findings are consistent with those of Abu et al. (2018), who found that hypertension patients with lower knowledge were less likely to reduce salt intake and limit food portions compared to those with higher knowledge. Paczkowska et al. (2021) similarly reported that good knowledge was significantly associated with medication adherence, blood pressure monitoring, regular physical activity, weight-reduction diet, and sodium restriction. Rhamtallah et al. (2025) further confirmed that higher hypertension knowledge was significantly related to better treatment adherence and improved blood pressure control. In the family context, Susanto et al. (2024) demonstrated that a family self-management program enhanced caregiver knowledge, self-efficacy, and hypertension management behaviors, underscoring the strategic role of mothers as family health managers in household hypertension prevention.

However, 33 mothers (18.5%) in this study had good knowledge yet exhibited poor prevention behavior. This knowledge-practice gap suggests that good knowledge alone does not automatically translate into behavioral change, as preventive practices may also be influenced by social barriers, family habits, environmental support, economic capacity, and healthcare access (Faleni et al., 2026; Abu et al., 2018). Faleni et al. (2026) similarly identified a knowledge-practice gap in primordial hypertension prevention, where individuals with adequate knowledge were unable to fully implement preventive behaviors due to structural and social constraints. Therefore, while improving maternal knowledge remains a priority, it must be complemented by practical health education, family accompaniment, and strengthened community health promotion activities such as Posbindu PTM to ensure knowledge translates into consistent hypertension prevention behavior (Mashuri et al., 2024; Susanto et al., 2024).

Association Between Mothers' Attitudes and Hypertension Prevention Behavior

This study also found a statistically significant association between mothers' attitudes and hypertension prevention behavior ($p = 0.000$). Among mothers with good attitudes, 80.8% demonstrated good prevention behavior, compared to only 38.9% among those with poor attitudes. These findings indicate that positive attitudes serve as a foundation for prevention behavior, reflecting an individual's readiness to accept, evaluate, and engage in health actions such as reducing salt intake, regularly monitoring blood pressure, and maintaining a healthy lifestyle (Ahmed et al., 2025; Ravikoti et al., 2025).

These findings align with Ahmed et al. (2025), who found that respondents with positive attitudes toward hypertension tended to support routine blood pressure monitoring and salt restriction, although their prevention practices were not yet fully optimal. Rahman et al. (2025) in rural Indonesia affirmed that lack of positive attitudes was one of the factors contributing to low hypertension prevention behavior, emphasizing attitude formation as a critical component of prevention interventions. Ravikoti et al. (2025) also noted that attitudes toward hypertension and stroke prevention were mixed in rural India, with many respondents relying on treatment rather than lifestyle modification, resulting in suboptimal prevention practices.

The findings are further supported by Maluwa et al. (2025), whose health education intervention among caregivers of hypertensive patients improved positive attitudes from 93.1% to 98.6% and good practices from 78.9% to 85.7%, demonstrating that attitude change can be followed by behavioral improvement. Susanto et al. (2024) similarly showed that a family self-management program enhanced knowledge, self-efficacy, and caregiver behavior, as well as improving sodium intake adherence and blood pressure control. However, findings from Maluwa et al. (2024) in Malawi, where the attitude-practice association was not statistically significant, suggest that differences in social context, respondent characteristics, family support, and information access may moderate the strength of this relationship.

Implications for Maternal and Reproductive Health

In the context of maternal and reproductive health, mothers' knowledge of hypertension is particularly critical during pregnancy. Preeclampsia, a hypertensive disorder typically manifesting after 20 weeks of gestation, affects approximately 3–8% of women globally and can progress to eclampsia, HELLP syndrome, organ damage, preterm birth, and maternal or fetal mortality if unrecognized (WHO, 2025). Studies have demonstrated that low knowledge of warning signs and delays in health-seeking are major barriers in preeclampsia management (Muhindo et al., 2025; Alsabi et al., 2025). Mothers with good knowledge are better equipped to identify danger signs such as high blood pressure, severe headache, visual disturbances, epigastric pain, and edema and seek care promptly (Havugimana et al., 2024; Igbokwe et al., 2025). Furthermore, history of hypertensive disorders in pregnancy is linked to increased long-term risk of chronic hypertension and cardiovascular disease, reinforcing the importance of sustained hypertension prevention knowledge and attitudes across the life course (Traub et al., 2024; WHO, 2025).

Limitations

This study has several limitations. First, the cross-sectional design prevents causal inference; the observed associations between knowledge, attitudes, and behavior may reflect common underlying determinants rather than directional effects. Second, knowledge, attitude, and behavior were assessed using self-reported questionnaires, which are susceptible to social desirability bias. Third, the sample was drawn from a single district, which may limit generalizability to other settings. Future longitudinal studies and multi-site designs would strengthen causal conclusions and external validity.

6. Conclusion

This study demonstrates a statistically significant association between mothers' knowledge and hypertension prevention behavior ($p = 0.000$) and between mothers' attitudes and hypertension prevention behavior ($p = 0.000$) in South Polongbangkeng District, Takalar Regency, 2026. Mothers with good knowledge and positive attitudes were more likely to engage in good hypertension prevention behavior. These findings highlight the importance of targeted health education and promotion interventions to improve both knowledge and attitudes toward hypertension prevention at the community level.

Health workers are recommended to strengthen routine health counseling and early detection programs for hypertension, particularly targeting mothers as primary family health managers. Mothers are encouraged to proactively improve their hypertension-related knowledge and cultivate positive attitudes through the adoption of healthy family lifestyles. Future research should examine additional determinants of hypertension prevention behavior, including dietary patterns, physical activity levels, family support systems, and access to health services.

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Conflicts of Interest: The authors declare no conflict of interest.

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