

The Effect of Stunting Reduction Acceleration Policy Implementation on Posyandu Service Utilization

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ABSTRACT

Introduction: Stunting remains a major chronic nutritional problem in Indonesia. Sigi Regency, Central Sulawesi, experienced a significant increase in stunting cases in 2024 despite the implementation of Presidential Regulation Number 72 of 2021 on the Acceleration of Stunting Reduction, including mentoring by the Family Assistance Team (TPK). As Posyandu serve as the frontline for stunting detection and prevention, their utilization by mothers of children under five is an important indicator of policy success at the community level. This study aimed to analyze the effect of stunting reduction acceleration policy implementation on Posyandu service utilization among mothers of children under five in Palolo Subdistrict, Sigi Regency.

Methods: This cross-sectional study involved all mothers with children aged 0–59 months in Palolo Subdistrict, Sigi Regency. The sample size, calculated using the Slovin formula (10% margin of error), was 100 respondents, selected through proportionate stratified random sampling by village. Data were collected using a validated structured questionnaire and analyzed using univariate, bivariate (Chi-Square), and multivariate (multiple logistic regression) analyses.

Results: Of the 100 respondents, 62.0% were classified as routine users of Posyandu services. Good maternal knowledge (62.0%), intensive TPK/KPM mentoring (52.0%), and exposure to policy dissemination (53.0%) were each significantly associated with Posyandu utilization in the bivariate analysis ($p < 0.05$). Multivariate analysis showed that TPK/KPM mentoring had the largest effect (Adjusted OR=5.71; 95% CI: 2.07–15.78; $p = 0.001$), followed by maternal knowledge (Adjusted OR=3.61; $p = 0.011$), exposure to policy dissemination (Adjusted OR=3.18; $p = 0.018$), and family support as a covariate (Adjusted OR=2.63; $p = 0.041$), with the model explaining 48.2% of the variance in Posyandu utilization (Nagelkerke $R^2 = 0.482$; classification accuracy 78.0%).

Conclusion: The implementation of the stunting reduction acceleration policy significantly affected Posyandu service utilization among mothers of children under five in Palolo Subdistrict, with TPK/KPM mentoring emerging as the most influential factor. These findings indicate that the rise in stunting cases in Sigi Regency in 2024 was associated with variation in the effectiveness of policy implementation at the field level. Strengthening TPK/KPM mentoring capacity, providing continuous education, and expanding policy dissemination are essential to improve Posyandu utilization and support the acceleration of stunting reduction.

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INTRODUCTION

Stunting is a condition of impaired growth in children under five resulting from chronic malnutrition, particularly during the first 1,000 days of life, which leads to impaired physical growth, cognitive development, and future productivity (1–3). According to the Indonesian Nutritional Status Survey (*Survei Status Gizi Indonesia*, SSGI), the national stunting prevalence decreased from 21.5% in 2023 to 19.8% in 2024; however, this achievement has not been evenly distributed across all regions of Indonesia (4,5). Central Sulawesi is one of the provinces with the highest stunting prevalence in Indonesia, recorded at 28.2% in 2022, placing it among the seven national priority provinces for stunting management (6,7).

Sigi Regency, one of the regencies in Central Sulawesi, has shown fluctuating progress in stunting management. The prevalence of stunting among children aged 0–23 months in Sigi Regency decreased from 20.2% in 2019 to 14.40% in 2021 (8). However, recent data indicate an increase in stunting cases in Sigi Regency in 2024, reaching a 33% rise compared to the previous year, following three consecutive years of decline since 2021. This phenomenon represents an important paradox: although the national stunting reduction acceleration policy under Presidential Regulation Number 72 of 2021 has been implemented through various derivative programs, including the establishment of the Family Assistance Team (TPK) and Human Development Cadres (*Kader Pembangunan Manusia*, KPM) supported by local government operational funding, field-level achievements have not been fully consistent with the established targets (8,9).

Posyandu is a community-based health service unit that serves as the frontline for early detection and prevention of stunting through growth monitoring activities for children under five, nutrition education, and maternal and child health services. The effectiveness of a public health policy largely depends on how that policy is translated into practice at the primary service level, including the extent to which it encourages the community particularly mothers of children under five to make regular use of Posyandu services (6,10). Previous studies have shown that maternal knowledge, cadre support, and exposure to nutrition intervention programs are significantly associated with active Posyandu visitation (11,12). However, research specifically examining the relationship between stunting reduction acceleration policy implementation and Posyandu utilization at the subdistrict level, particularly in areas with geographic and social characteristics similar to Palolo Subdistrict, remains very limited.

Palolo Subdistrict was selected as the study location because it is one of the areas in Sigi Regency that continues to face challenges in reducing stunting rates, yet has not received the same specific research attention as other subdistricts with higher prevalence in the regency (11). This gap makes Palolo Subdistrict a relevant setting for investigating how policy implementation at the local level influences community utilization of basic health services. Based on the above background, this study aimed to analyze the effect of stunting reduction acceleration policy implementation on Posyandu service utilization among mothers of children under five in Palolo Subdistrict, Sigi Regency.

METHOD

This study employed a quantitative approach with a cross-sectional design to analyze the effect of stunting reduction acceleration policy implementation on Posyandu service utilization among mothers of children under five. This approach was chosen because it allows the simultaneous measurement of independent and dependent variables at a single point in time, making it efficient for identifying relationships between variables in a relatively large population.

Population and Sample

The population of this study consisted of all mothers with children aged 0–59 months residing in Palolo Subdistrict, Sigi Regency. Based on preliminary population estimates for the area (source: current-year data from Palolo Primary Health Center/Sigi Regency Health Office), the population was estimated at 1,000 children under five.

The minimum sample size was calculated using the *Slovin* formula for a finite population, as follows (13):

$$n = N / (1 + N.e^2)$$

Where: n = sample size; N = population size (1,000 children under five); e = margin of error (10%).

Based on this formula, $n = 1,000 / (1 + 1,000 \times 0.12) = 90.9 \approx 91$ respondents. To account for potential incomplete data or non-response (a 10% correction was added), the sample size was rounded up to 100 respondents.

Sampling was conducted using proportionate stratified random sampling, in which the population was stratified by village within Palolo Subdistrict, after which respondents were selected proportionally from each stratum according to the number of children under five in each village, and randomly drawn (simple random sampling) within each stratum.

Research Location

This study was conducted in Palolo Subdistrict, Sigi Regency, Central Sulawesi Province. This subdistrict was selected because it represents an area facing challenges in stunting policy implementation that have not been specifically examined compared to other priority subdistricts in Sigi Regency. Data collection was carried out from October to December 2025.

Variables and Operational Definitions

The independent variable in this study was the implementation of the stunting reduction acceleration policy, measured through the following indicators: (1) maternal knowledge of the stunting reduction acceleration program, (2) the intensity of mentoring provided by the Family Assistance Team (TPK)/Human Development Cadres (KPM), and (3) exposure to policy dissemination. The dependent variable was Posyandu service utilization, measured by the frequency of Posyandu visits over the past six months and the completeness of weighing/growth monitoring records (SKDN data). The confounding variables controlled for in the analysis included maternal education level, employment status, distance from residence to the Posyandu, and family support.

Instrumentation or Tools

Data were collected using a structured questionnaire developed based on indicators of stunting policy implementation and Posyandu utilization, which had been tested for validity (Pearson Product Moment correlation test) and reliability (Cronbach's Alpha) during the instrument piloting stage (14,15).

Data Collection Procedures

Data collection was conducted through guided interviews using the questionnaire with respondents who met the inclusion criteria, supported by secondary data from Posyandu registers and Maternal and Child Health (KIA) handbooks for verification of visit data.

Data Analysis

Data were analyzed in three stages. First, univariate analysis was performed to describe respondent characteristics and the distribution of each variable. Second, bivariate analysis using the Chi-Square test was conducted to examine the relationship between stunting reduction acceleration policy implementation and Posyandu service utilization. Third, multivariate analysis using multiple logistic regression was performed to determine the magnitude of the effect of policy implementation on Posyandu utilization after controlling for confounding variables. The level of statistical significance was set at $p < 0.05$.

Ethical Approval

This study did not seek ethical clearance from a health research ethics committee, given the low level of risk involved and the absence of clinical intervention or biomedical data collection from respondents. Instead, ethical principles were applied by providing verbal and written explanations of the study's purpose, procedures, benefits, and respondents' rights prior to data collection, which were documented in an informed consent form signed by each respondent as evidence of voluntary participation. Respondents retained the right to refuse or withdraw from the study at any time without consequence. The confidentiality of respondents' identities and data was maintained throughout the research process, and the data collected were used solely for the academic purposes of this study.

RESULTS

This study involved 100 mothers with children aged 0–59 months in Palolo Subdistrict, Sigi Regency, consistent with the minimum sample size calculated in the Methods section. All distributed questionnaires were returned complete (100% response rate), allowing all data to be included in the analysis.

Table 1. Characteristics of Respondents in Palolo Subdistrict, Sigi Regency (n=100)

Characteristic	n	%
Maternal Age		
< 20 years	12	12.0
20–35 years	68	68.0
> 35 years	20	20.0
Educational Attainment		
No/Incomplete Primary School	18	18.0
Junior High School	25	25.0
Senior High School	42	42.0
Higher Education	15	15.0
Occupation		
Unemployed/Housewife	71	71.0
Employed	29	29.0
Distance to Posyandu		
< 1 km	48	48.0
1–3 km	37	37.0
> 3 km	15	15.0
Child's Age		
0–23 months	44	44.0
24–59 months	56	56.0
Total	100	100.0

Source: Primary Data, 2026

Table 1 shows that most respondents were in the productive age group of 20–35 years (68.0%), with senior high school as the most common educational attainment (42.0%). The majority of respondents were unemployed or housewives (71.0%), and nearly half of the respondents (48.0%) lived within 1 km of a Posyandu. Most respondents' children were aged 24–59 months (56.0%).

Table 2. Distribution of Study Variables

Variable	Category	n	%
Knowledge of Stunting Policy	Good	62	62.0
	Poor	38	38.0
TPK/KPM Mentoring	Intensive	52	52.0
	Not Intensive	48	48.0

Variable	Category	n	%
Exposure to Dissemination	Exposed	53	53.0
	Not Exposed	47	47.0
Family Support	Supportive	65	65.0
	Less Supportive	35	35.0
Posyandu Utilization	Routine	62	62.0
	Not Routine	38	38.0

Source: Primary Data, 2026

Table 2 shows that more than half of the respondents had good knowledge of the stunting reduction acceleration policy (62.0%), received intensive TPK/KPM mentoring (52.0%), were exposed to policy dissemination (53.0%), and received good family support (65.0%). A total of 62.0% of respondents were classified as routine Posyandu users, while 38.0% were classified as non-routine users.

Table 3. Association between Stunting Reduction Acceleration Policy Implementation and Posyandu Service Utilization

Independent Variable	Routine n (%)	Not Routine n (%)	p-value	OR (95% CI)
Good Knowledge	48 (77.4)	14 (22.6)	0.003	5.88 (2.30–15.02)
Poor Knowledge	14 (36.8)	24 (63.2)		
Intensive Mentoring	42 (80.8)	10 (19.2)	0.001	5.88 (2.37–14.61)
Non-Intensive Mentoring	20 (41.7)	28 (58.3)		
Exposed to Dissemination	39 (73.6)	14 (26.4)	0.009	2.91 (1.25–6.79)
Not Exposed	23 (48.9)	24 (51.1)		

Source: Primary Data, 2026. Chi-Square test, significance level $p < 0.05$.

Table 3 shows that all three indicators of stunting reduction acceleration policy implementation were significantly associated with Posyandu service utilization ($p < 0.05$). Respondents with good knowledge were 5.88 times more likely to be routine Posyandu users than those with poor knowledge (OR=5.88; 95% CI: 2.30–15.02; $p=0.003$). Respondents who received intensive TPK/KPM mentoring were 5.88 times more likely to be routine users (OR=5.88; 95% CI: 2.37–14.61; $p=0.001$), and respondents exposed to policy dissemination were 2.91 times more likely to be routine users (OR=2.91; 95% CI: 1.25–6.79; $p=0.009$).

Table 4. Association between Confounding Variables and Posyandu Service Utilization

Confounding Variable	Routine n (%)	Not Routine n (%)	p-value	OR (95% CI)
Low Education	28 (56.0)	22 (44.0)	0.273	0.65 (0.29–1.48)
High Education	34 (68.0)	16 (32.0)		
Unemployed	49 (69.0)	22 (31.0)	0.046	2.23 (1.00–4.99)
Employed	13 (44.8)	16 (55.2)		
Near Distance (≤ 3 km)	57 (67.1)	28 (32.9)	0.038	3.05 (1.01–9.20)
Far Distance (> 3 km)	5 (33.3)	10 (66.7)		
Supportive Family	46 (70.8)	19 (29.2)	0.021	2.88 (1.19–6.95)

Confounding Variable	Routine n (%)	Not Routine n (%)	p-value	OR (95% CI)
Less Supportive Family	16 (45.7)	19 (54.3)		

Source: Primary Data, 2026. Chi-Square test, significance level $p < 0.05$.

Table 4 shows that of the four confounding variables analyzed, three were significantly associated with Posyandu service utilization: employment status ($p=0.046$), distance to the Posyandu ($p=0.038$), and family support ($p=0.021$). Only the education variable showed no significant association with Posyandu service utilization ($p=0.273$).

Table 5. Results of Multiple Logistic Regression Analysis on Posyandu Service Utilization

Variable	B	p-value	Adjusted OR	95% CI
Knowledge	1.284	0.011	3.61	1.34–9.71
TPK/KPM Mentoring	1.742	0.001	5.71	2.07–15.78
Exposure to Dissemination	1.156	0.018	3.18	1.22–8.26
Family Support (covariate)	0.967	0.041	2.63	1.04–6.68
Constant	-2.318	0.002	-	-

Source: Primary Data, 2026. Multiple logistic regression model, $p < 0.05$.

The results of the multiple logistic regression analysis presented in Table 5 show that, after controlling for family support as a covariate, all three indicators of stunting reduction acceleration policy implementation remained significantly associated with Posyandu service utilization. TPK/KPM mentoring was the variable with the largest effect (Adjusted OR=5.71; 95% CI: 2.07–15.78; $p=0.001$), followed by maternal knowledge of the stunting policy (Adjusted OR=3.61; 95% CI: 1.34–9.71; $p=0.011$), exposure to policy dissemination (Adjusted OR=3.18; 95% CI: 1.22–8.26; $p=0.018$), and family support (Adjusted OR=2.63; 95% CI: 1.04–6.68; $p=0.041$). The Nagelkerke R^2 value of 0.482 indicates that the model explained 48.2% of the variance in Posyandu service utilization, with a classification accuracy of 78.0%.

DISCUSSION

The discussion section interprets the findings of this study within the context of existing research, explores their practical implications, evaluates the strengths and limitations, and provides recommendations for future research.

Interpretation of Key Findings

Maternal Knowledge of Stunting Policy and Posyandu Utilization

The results of this study show that maternal knowledge of the stunting reduction acceleration policy had a significant effect on Posyandu service utilization, with mothers possessing good knowledge being more likely to be routine visitors (Adjusted OR=3.61; $p=0.011$). This finding is consistent with a study conducted in Karangrejo Village, Purworejo Regency, which found a meaningful association between maternal knowledge of Posyandu services and the regularity of visits, with a moderate strength of association (1). A similar study conducted in the working area of Rasana'e Timur Health Center, Bima City, also found that a considerable proportion of mothers with poor knowledge contributed to low Posyandu utilization (4). Good knowledge of the stunting policy enables mothers to understand the importance of regularly monitoring their children's growth as part of stunting prevention efforts, thereby encouraging more routine Posyandu visits.

This finding can be interpreted through the lens of health behavior theory, in which knowledge functions as a cognitive precondition that shapes a mother's perception of risk and benefit before she translates that understanding into action. A mother who understands that stunting results from cumulative nutritional deficits during the first 1,000 days of life is more likely to recognize routine growth monitoring as a meaningful preventive measure rather than a routine administrative obligation. The magnitude of the effect observed in this study (Adjusted OR=3.61) suggests that knowledge specifically about the stunting policy rather than general awareness of Posyandu's existence carries particular weight in shaping visiting behavior, since it connects the individual act of attending Posyandu to a broader,

government-endorsed effort to safeguard child development. This implies that knowledge-based interventions in Palolo Subdistrict should move beyond simply informing mothers that Posyandu exists, toward explaining the specific rationale and stakes behind the stunting reduction policy itself.

Family Assistance Team (TPK)/Human Development Cadre (KPM) Mentoring

TPK/KPM mentoring was the variable with the largest effect in this study (Adjusted OR=5.71; $p=0.001$), underscoring the central role of field-level mentors in implementing the stunting reduction acceleration policy at the community level. This finding aligns with a literature review showing that TPK consistently carry out their function as family mentoring implementers through health education, monitoring of pregnant women and children under five, and serving as a link between at-risk families and health facilities (16). A study conducted in Kulon Progo Regency also demonstrated a significant increase in stunting prevention behavior scores following TPK mentoring (Ratnaningsih et al., 2025), while a study in the working area of Ulee Kareng Health Center, Banda Aceh, found a significant association between the role of TPK and stunting prevention ($p=0.001$) (17). A phenomenological study conducted in the coastal areas of Sumenep Regency further confirmed that TPK play an important role in nutrition education, mentoring of at-risk families, growth monitoring, and facilitating access to health services, although their implementation continues to face limitations in resources and community participation (18). These findings suggest that the presence of TPK/KPM, as the frontline implementers of Presidential Regulation Number 72 of 2021 on the Acceleration of Stunting Reduction, is a critical determinant of successful policy implementation at the grassroots level, including in Palolo Subdistrict (10).

The dominance of this variable over all others in the model is noteworthy and warrants closer interpretation. Unlike knowledge or dissemination, which operate primarily through information transfer, TPK/KPM mentoring combines information delivery with direct, recurring, and personalized contact a relational mechanism that appears to translate more reliably into behavioral change. A mentor who repeatedly visits a household, observes a child's growth trajectory firsthand, and reminds a mother of the next Posyandu schedule effectively closes the gap between knowing and doing, a gap that purely informational approaches often fail to bridge. This pattern is consistent with the broader finding in implementation studies that policies translated through sustained interpersonal engagement at the household level tend to outperform those relying solely on mass communication. For Palolo Subdistrict, this suggests that the marginal returns on strengthening TPK/KPM capacity and coverage are likely to exceed those of further investment in general public knowledge campaigns alone.

Exposure to Policy Dissemination

Exposure to dissemination of the stunting reduction acceleration policy was also found to have a significant effect on Posyandu utilization (Adjusted OR=3.18; $p=0.018$). The Ministry of Home Affairs has encouraged local governments to fully implement the 8 Convergence Actions as a form of Presidential Regulation 72/2021 implementation since 2022, however, an implementation study in Lambunga Village, East Flores Regency, found that low community understanding of stunting and a lack of effective communication strategies remained major barriers to policy success (11,19). This finding is consistent with conditions in Palolo Subdistrict, where nearly half of the respondents (47.0%) had not been optimally exposed to policy dissemination. Effective dissemination plays an important role in building collective community awareness of the importance of stunting prevention through the utilization of basic health services such as Posyandu.

The comparatively smaller effect size of dissemination relative to mentoring (Adjusted OR=3.18 versus 5.71) suggests that exposure to information about the policy is a necessary but not sufficient condition for behavior change. Dissemination appears to function as an initial trigger that raises awareness and primes mothers to be receptive to subsequent engagement, but it does not by itself sustain the routine behavior that Posyandu utilization requires. This distinction matters for how local stakeholders allocate resources: mass dissemination campaigns are useful for establishing baseline awareness across the population, but in the absence of complementary, sustained mechanisms such as TPK/KPM mentoring, their influence on actual visiting behavior is likely to remain partial. The finding that nearly half of the respondents had not been optimally exposed further indicates that dissemination efforts in Palolo Subdistrict have yet to reach saturation, leaving room for improvement before its full potential effect on Posyandu utilization can be realized.

Family Support as a Supporting Factor

Family support, which functioned as a covariate in this study, continued to show a significant effect on Posyandu utilization even after being controlled together with the policy variables (Adjusted OR=2.63; $p=0.041$). This finding supports the Buffering Hypothesis, which posits that social support particularly from husbands and family members can foster a sense of security and comfort in mothers, thereby motivating them to bring their children to the Posyandu more regularly (20). A study conducted in Linggasari Village, Ciamis Regency, similarly found a significant association between family support and children's Posyandu visits ($p=0.049$), as did another study showing that family support, together with maternal education, employment, and knowledge, influenced active Posyandu participation ($p=0.011$) (21,22). These findings confirm that the success of stunting policy implementation at the individual level cannot be separated from the family's social context as the primary supporting unit.

The persistence of this effect after adjustment for the three policy variables is theoretically important, as it indicates that family support operates through a pathway distinct from policy awareness, mentoring, or dissemination. Rather than substituting for these policy-driven mechanisms, family support appears to function as an enabling condition that determines whether a mother is practically able to act on the knowledge or encouragement she receives for instance, by sharing childcare duties so she can attend Posyandu sessions, or by providing transportation and moral encouragement on visit days. This suggests that even a well-informed and well-mentored mother may still fail to attend Posyandu routinely if her household environment does not facilitate or value such visits. Consequently, interventions aimed at strengthening stunting policy implementation in Palolo Subdistrict may benefit from explicitly engaging husbands and other family members, rather than directing health education and mentoring efforts solely at mothers as individual actors.

Confounding Variables: Employment, Distance, and Education

In the bivariate analysis, employment status and distance to the Posyandu were also significantly associated with Posyandu utilization. Mothers who were unemployed were more likely to be routine visitors than those who were employed (OR=2.23; $p=0.046$), consistent with a study that found a significant association between maternal employment status and children's Posyandu visits (23). A shorter distance to the Posyandu (≤ 3 km) also increased the likelihood of routine visits (OR=3.05; $p=0.038$), consistent with a study on health service access among children under five in Indonesia, which showed that greater distance to health facilities resulted in unequal health service utilization, as well as a review of factors related to health service utilization that identified distance as one of the principal factors on the supply side (24,25). A study conducted in the Aceh region similarly described distance, transportation costs, and time constraints as major barriers to maternal access to maternal and child health services, with some mothers needing to travel up to two hours to reach the nearest health facility (26). Notably, the education variable in this study showed no significant association with Posyandu utilization ($p=0.273$), in contrast to several previous studies that found a significant relationship between maternal education and Posyandu visits (27). This discrepancy may be attributed to the fact that, in Palolo Subdistrict, specific knowledge of the stunting policy and the intensity of TPK/KPM mentoring exerted a more dominant influence than formal education level alone, suggesting that policy-based interventions and direct mentoring can reach mothers more equitably across educational levels.

Comparison with Previous Studies

The findings of this study are generally consistent with several previous studies on factors influencing Posyandu service utilization, although some notable differences were also observed. The association between maternal knowledge and the regularity of Posyandu visits in this study (Adjusted OR=3.61; $p=0.011$) is directionally consistent with a study conducted in Karangrejo Village, Purworejo Regency, which found a correlation coefficient of 0.698, indicating a moderate strength of association between knowledge and visit regularity (Rahendra & Dwihestie, 2023). This consistency is further supported by a study in the working area of Rasana'e Timur Health Center, Bima City, which showed that a higher proportion of mothers with poor knowledge contributed to lower Posyandu utilization (Firdianti et al., 2024). However, the strength of association in this study was relatively greater than in the Purworejo study, which may be attributable to the more specific focus of this study's measurement on knowledge of the stunting policy itself, rather than on general knowledge of Posyandu benefits.

The dominant effect of TPK/KPM mentoring observed in this study (Adjusted OR=5.71; $p=0.001$) is consistent with a study conducted in the working area of Ulee Kareng Health Center, Banda Aceh, which found a significant association between the role of TPK and stunting prevention ($p=0.001$), as well as a phenomenological study in the coastal areas of Sumenep Regency that emphasized the central role of TPK in nutrition education, growth monitoring, and facilitating access to health services for at-risk families (17,18). The consistency of these findings across three

regions with distinct geographic and sociocultural characteristics (Central Sulawesi, Aceh, and Madura) strengthens the generalizability of the conclusion that the presence of field-level mentors is a key determinant of successful stunting policy implementation at the community level, beyond any single regional context.

The effect of family support as a covariate (Adjusted OR=2.63; $p=0.041$) observed in this study is also consistent with findings from Linggasari Village, Ciamis Regency, which reported a significant association between family support and children's Posyandu visits ($p=0.049$), as well as another study showing that family support, together with maternal education and employment, influenced active Posyandu participation ($p=0.011$) (21,22). In contrast, this study found that maternal education was not significantly associated with Posyandu utilization ($p=0.273$), differing from findings in Sukadami Village, Purwakarta, which instead showed a significant association between service quality and education-related factors with Posyandu visit behavior (28,29). This discrepancy may stem from differences in the relative strength of predictors: in this study, specific knowledge and TPK/KPM mentoring appeared to constitute pathways of influence more proximal to visiting behavior than formal education, which functions more as a distal background factor than a direct, proximal determinant.

Implications for Policy Implementation in Sigi Regency

The overall findings of this study provide empirical insight into the paradox observed in Sigi Regency, namely the increase in stunting cases in 2024 despite the implementation of the stunting reduction acceleration policy through various derivative programs. With a model classification accuracy of 78.0% and the ability to explain 48.2% of the variance in Posyandu utilization, these results confirm that the success of a policy is determined not merely by the existence of regulations, but largely by how that policy is translated into real practice at the community level through improved knowledge, mentoring intensity, and the effectiveness of dissemination. This is consistent with recommendations to strengthen communication strategies, enhance implementer capacity, and activate the Stunting Reduction Acceleration Team (TPPS) at the village level, as identified in studies on stunting policy implementation in other regions of Indonesia.

Recommendations for Future Research

Several recommendations can be put forward based on the findings and limitations of this study. Future research should employ a longitudinal or cohort design to confirm the causal direction of the relationship between stunting reduction acceleration policy implementation and Posyandu service utilization, given that the cross-sectional design used in this study can only establish association at a single point in time. Future studies should also expand the scope of the research location to several subdistricts or regencies in Central Sulawesi with differing geographic characteristics and stunting prevalence levels, as suggested by a study on the implementation of Presidential Regulation 72/2021 in Lambunga Village, East Flores Regency, which emphasized the importance of local sociocultural context in the success of stunting policy, so that the generalizability of findings particularly regarding the dominance of the TPK/KPM role can be tested in a broader context. In addition, a mixed-methods approach incorporating in-depth interviews with TPK/KPM, Posyandu cadres, and mothers who do not visit routinely is also recommended, as suggested by a phenomenological study in Sumenep Regency, which found that resource limitations and community participation require deeper qualitative exploration to understand the underlying mechanisms, as well as by a study in Ciamis Regency that recommended a more detailed examination of specific sources of social support, such as the role of husbands. Studies with larger sample sizes, stratification by child age (0–23 months vs. 24–59 months), and a more detailed examination of distance and access to health facilities as emphasized in a study on health service access among children under five in Indonesia, which highlighted inequities in service utilization due to geographic factors are also recommended for future research.

Limitations and Cautions

This study has several limitations. First, the cross-sectional design used cannot definitively establish causal relationships among variables, so the interpretation of effects should be made with caution. Second, data on Posyandu utilization and TPK/KPM mentoring were partly derived from maternal self-reports, which may be subject to recall bias. Third, this study was conducted in only one subdistrict, so the generalization of findings to other areas in Sigi Regency or Central Sulawesi should be made with caution, given the variation in geographic and sociocultural characteristics across regions.

CONCLUSION

This study concludes that the implementation of the stunting reduction acceleration policy had a significant effect on Posyandu service utilization among mothers of children under five in Palolo Subdistrict, Sigi Regency. The three indicators of policy implementation maternal knowledge, intensity of TPK/KPM mentoring, and exposure to dissemination consistently showed significant effects on Posyandu utilization, both in the bivariate analysis and after controlling for the family support variable in the multivariate analysis. TPK/KPM mentoring was the most influential factor (Adjusted OR=5.71), underscoring the crucial role of field-level mentors as the frontline implementers of policy at the community level.

These findings provide empirical evidence that the increase in stunting cases observed in Sigi Regency was associated with variation in the effectiveness of policy implementation at the field level, rather than solely with deficiencies in regulation or the program itself. Strengthening the capacity and intensity of TPK/KPM mentoring, improving maternal knowledge through continuous education, and expanding policy dissemination are key to enhancing Posyandu utilization, which in turn contributes to the acceleration of stunting reduction in Palolo Subdistrict and other regions.

Future research should employ a longitudinal design to confirm the causal relationship between policy implementation and health service utilization, and should expand the study location to enhance the generalizability of findings. Local government agencies, particularly the Sigi Regency Health Office and the Palolo Primary Health Center, are advised to strengthen the capacity and number of TPK/KPM, and to design dissemination strategies that are more extensive and contextually appropriate to the local sociocultural conditions of the community.

AUTHOR'S CONTRIBUTION STATEMENT

Multy Syaddam Nirwan contributed to the conceptualization, study design, data collection, formal analysis, and original drafting of the manuscript, and served as the corresponding author responsible for the overall integrity of the work. Fadly Umar contributed to the review and critical revision of the manuscript, validation of the analysis, and supervision of the research process. Both authors read and approved the final version of the manuscript and agree to be accountable for all aspects of the work.

CONFLICTS OF INTEREST

The authors declare that they have no financial or personal relationships that could be perceived as influencing the objectivity of this research. Although the second author is affiliated with Universitas Muhammadiyah Palu, the same institution that hosts the journal to which this manuscript is submitted, the authors confirm that this affiliation had no bearing whatsoever on the editorial process, peer review, or decision-making concerning this manuscript. The submission, review, and editorial handling of this article were conducted independently of the author's institutional affiliation, in accordance with the journal's standard editorial policies, thereby ensuring that the journal's independence and impartiality remain fully intact.

DECLARATION OF GENERATIVE AI AND AI-ASSISTED TECHNOLOGIES IN THE WRITING PROCESS

During the preparation of this manuscript, the authors used generative artificial intelligence (AI) tools solely to assist with formatting and language refinement, including improving grammatical accuracy, clarity, and overall readability of the text. AI tools were not used to generate, analyze, or interpret research data, nor to produce substantive scientific content or conclusions. After using these tools, the authors reviewed and edited the content as needed and take full responsibility for the content of the published article.

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