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ORIGINAL ARTICLE

Factors influencing the participation of mothers with toddlers in posyandu activities in Kemenangan Tani Village, Medan Tuntungan District

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ABSTRACT

Posyandu is a type of community-based health effort (UKBM) which is managed and organized by, for, and with the community in the implementation of health development. Empowering the community to obtain essential health services, accelerating the reduction of maternal and child mortality. This study aims to determine the relationship between knowledge and characteristics of mothers under five with visits to posyandu activities in Kelurahan Kemenangan Tani. This research is an analytic survey with a cross-sectional approach. The population in this study were mothers of children under five at the Kelurahan Kemenangan Tani Posyandu. The sample in this study was 60 respondents with the determination of the number of samples using the slovin formula. The sampling technique used is proportional random sampling with inclusion and exclusion criteria. Data was collected through interviews using a questionnaire. This study used the chi-square statistical test (Confidence Interval (CI) 95%; = 0.05). Multivariate analysis using logistic regression. The results of this study indicate that there is a significant relationship between mother's knowledge and mother's characteristics with the visit of mothers under five in posyandu activities ($p < 0.05$). The dominant independent variable was education ($p = 0.011$; $PR = 14,903$, 95% CI = 1,872-118,660). The conclusion of this study is that there is a significant relationship between mother's knowledge and mother's characteristics with the visit of mothers under five in posyandu activities. The dominant independent variable is education.

Keyword: knowledge, mother characteristics, mother toddler visits

Introduction

The Indonesian Ministry of Health is committed to optimizing child growth and development by leveraging community-based health services, particularly Posyandu (Integrated Service Post).¹ This strategy is crucial for enhancing the quality of human resources and aligning with international health development goals. Posyandu serves as a vital platform for public health communication and service delivery, created by and for the community, with a strategic focus on early childhood development.^{2,3} Several factors influence mothers' participation in Posyandu activities. Knowledge about Posyandu benefits is a significant determinant, with higher knowledge associated with increased participation.^{4,5} Education level also plays a role, as longer education correlates with higher activity levels.⁶ Employment status affects attendance, with working mothers less likely to participate.^{4,7} Family support, particularly from husbands, is positively associated with maternal involvement.⁵ Cadre support strongly influences mothers' visits to Posyandu.⁷

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While some studies found no significant relationship between age and participation⁵, others reported a correlation.⁶ The perception of supplementary feeding programs may also impact participation.⁴ These factors collectively contribute to mothers' decisions to attend Posyandu activities.

Previous research has explored various determinants of maternal participation in community health programs or Posyandu in Indonesia. Several studies have identified factors influencing mothers' attendance, including religious beliefs, cultural norms, and concerns about adverse events following immunization.⁸ Mothers' satisfaction with Posyandu services, attitudes towards its benefits, and intention to attend regularly were also found to be significant predictors of participation. Additionally, household income was associated with attendance, with lower-income families more likely to participate.⁹ Some studies found that mothers' participation in Posyandu was positively correlated with the utilization of maternal and child health handbooks.¹⁰ Other factors such as mothers' knowledge about Posyandu, husband's support, and cadre activeness were also identified as significant determinants.⁵ However, factors like maternal age, education, and occupation were not consistently associated with participation across studies.^{5,10}

The Posyandu in Kemenangan Tani Village is well-equipped. Information dissemination to mothers about session schedules is minimal, often dependent on the family's knowledge. However, family support is present, with some husbands occasionally accompanying their wives and children. While Posyandu activities are comprehensive, including immunizations, growth monitoring, and counseling, attendance is unstable and declining each month. This highlights a pressing need to investigate the factors that influence community participation to improve engagement. A preliminary survey conducted on August 10, 2022, at the Posyandu in Kemenangan Tani Village, Medan Tuntungan District, revealed low maternal participation. Of the 15 mothers surveyed, only five were active participants. Interviews identified two primary barriers to attendance: a lack of transportation and time constraints due to work.

Furthermore, a limited understanding of Posyandu's purpose was evident, with eight out of 15 mothers believing it was only for vaccinations, Vitamin A distribution, and supplementary feeding. The local Melati 3 Posyandu, however, is supported by a dedicated team of five cadres who consistently attend monthly sessions. The cadres actively encourage mothers to bring their children for regular monitoring and even perform follow-ups for those who miss sessions for three consecutive months, sometimes picking them up to ensure their children's growth and development are not neglected.

The Posyandu service model, with its five-table approach, aims to provide comprehensive and accessible care to its target population of infants, toddlers, and mothers. As a community-led initiative, it is designed to empower local residents in their own health development. The low participation among the 145 mothers in Kemenangan Tani Village suggests that many toddlers' nutritional statuses are not being adequately monitored. Therefore, this study aims to identify the specific factors—occupation, education, knowledge, and attitude—that influence a mother's decision to participate in Posyandu activities, with the ultimate goal of improving community engagement and child health outcomes.

Method

This study will employ a quantitative approach with a cross-sectional design, wherein data regarding factors influencing the participation of mothers with toddlers and their participation levels will be collected simultaneously at a single point in time. The research will be conducted at the Posyandu in Kemenangan Tani Village, Medan Tuntungan District, Medan City, with the implementation planned for the coming months after obtaining necessary permits. The study population comprises all 145 mothers with toddlers registered at this Posyandu. Given the relatively manageable population size, a total sampling method will be applied, meaning all 145 eligible mothers will serve as the sample. The independent variables to be investigated include the mother's occupation, education level, knowledge, attitude towards Posyandu activities, distance from residence, family support, and the role and attitude of Posyandu cadres. The dependent variable is the level of participation of mothers with toddlers in Posyandu activities. Data will be collected using questionnaires that have undergone validity and reliability testing, and observation checklists where necessary. Data collection procedures will commence with obtaining research permits, followed by detailed explanations to respondents to secure informed consent, questionnaire administration, and data verification. Data analysis will be performed quantitatively using statistical software, beginning with univariate analysis for descriptive characteristics and variable distribution, followed by bivariate analysis (using Chi-Square tests or correlation) to examine relationships between variables, and if feasible, multivariate analysis to assess the simultaneous influence of multiple factors. Throughout the research

process, ethical principles such as data confidentiality, informed consent, and the right of respondents to withdraw will be strictly upheld.

Results

Table 1 presents the demographic characteristics distribution of 60 mothers with toddlers who served as respondents in this study, covering the mother's age, toddler's age, toddler's gender, mother's education level, and mother's occupation. The distribution of mothers' ages across the three categories is relatively even, with the 20-39 year old group being the majority (35.0%). Toddlers brought to the Posyandu are predominantly in the 2-4 year old age group (55.0%), with slightly more male toddlers (53.3%) than female. This segment of the table presents the distribution of respondents based on their educational attainment and employment status.

Table 1. Characteristics of respondents

Variable	n	%
Mother's Age		
<20 years	20	33.3
20-39 years	21	35.0
40-49 years	19	31.7
Toddler's Age		
<2 years	27	45.0
2-4 years	33	55.0
Toddler's Gender		
Male	32	53.3
Female	28	46.7
Mother's Education		
Elementary School	3	5.0
Junior High School	5	8.3
Senior High School	29	48.3
Diploma	7	11.7
Bachelor/Profession	16	26.7
Mother's Occupation		
Unemployed	40	66.7
Employed	20	33.3

A significant majority of respondent mothers (48.3%, n=29) completed Senior High School (SMA), followed by those with a Bachelor's or professional degree (26.7%, n=16), indicating that most mothers in this study have attained at least a secondary education level or higher. Conversely, the proportion of mothers with only elementary (5.0%, n=3) or junior high school (8.3%, n=5) education is notably low. Regarding occupation, two-thirds of the mothers (66.7%, n=40) are unemployed, likely functioning as full-time homemakers, while the remaining one-third (33.3%, n=20) are employed. This data highlights that while most mothers possess a relatively good educational background, the majority are not employed, a factor that could significantly influence their availability and willingness to participate in Posyandu activities.

Table 2. Frequency distribution based on mother's knowledge, mother's attitude, and mother's participation in posyandu activities

Variable	n	%
Mother's Knowledge		
High	41	68.3
Low	19	31.7
Mother's Attitude		
Good	28	46.7
Less Favorable (or Poor)	32	53.3

Participation of Mothers with Toddlers in Posyandu Activities		
Active (> 8 times/year)	35	58.3
Not Active (< 8 times/year)	25	41.7

Based on the table above, it shows that the majority of mothers with toddlers have a high level of knowledge, totaling 41 people (68.3%), compared to those with low knowledge, totaling 19 people (31.7%). The majority of mothers with toddlers have a less favorable attitude, totaling 32 people (53.3%), while those with a good attitude total 28 people (46.7%). The participation of mothers with toddlers in Posyandu activities is mostly active in bringing their toddlers to Posyandu, totaling 35 people (58.3%), compared to mothers who are not active in bringing their toddlers to Posyandu, totaling 25 people (41.7%).

Table 3. Bivariate Analysis

Variables	Participation of Mothers with Toddlers in Posyandu Activities				Total		p-value
	Active		Not Active		f	%	
	f	%	f	%			
Education of mother							
Elementary School	1	33,3	2	66,7	3	100	0,01
Junior High School	5	100	0	0	5	100	
Senior High School	11	37,9	18	62,1	29	100	
Diploma	5	71,4	2	28,6	7	100	
Bachelor	13	81,2	3	18,8	16	100	
Occupation of mother							
Employed	7	35	13	65	20	100	0.01
Unemployed	28	70	12	30	40	100	
Knowledge of mother							
High	28	68,3	13	31,7	41	100	0.022
Low	7	36,8	12	63,2	19	100	
Attitude							
Support	21	75	7	25	28	100	0.014
Not Support	14	43,8	18	56,2	32	100	
Age of mother							
<20 years	15	75	5	25	20	100	0.014
20-39 years	7	33,3	14	66,7	21	100	
40-49 years	13	68,4	6	31,6	19	100	

Table 3 presents the bivariate analysis results exploring the relationship between several mother's characteristics (education, occupation, knowledge, attitude, and age) and the participation level of mothers with toddlers in Posyandu activities. The analysis shows a highly significant relationship between the mother's education level and Posyandu participation (p-value = 0.01). A clear pattern emerges where higher maternal education tends to correlate with higher active participation. For example, among 3 mothers with Elementary School education, only 1 (33.3%) was active. In contrast, all 5 mothers (100%) with Junior High School education showed active participation. At the Senior High School level, out of 29 mothers, 11 (37.9%) were active, while the majority (62.1%) were not active. However, at the Diploma level, 5 out of 7 mothers (71.4%) were active, and at the Bachelor/Profession level, 13 out of 16 mothers (81.2%) actively participated. This indicates that higher education might increase awareness or access to information regarding the importance of Posyandu. A significant relationship was found between the mother's occupation status and Posyandu participation (p-value = 0.01). Unemployed mothers showed a much higher rate of active participation; out of 40 unemployed mothers, 28 (70%) were actively participating, while only 12 (30%) were not active. Conversely, out of 20 employed mothers, only 7 (35%) were active, with the majority (13 people or 65%) being not active. This strongly suggests that time constraints due to employment are a significant barrier to maternal participation.

The analysis revealed a significant relationship between mother's knowledge about Posyandu and their participation level (p -value = 0.022). Mothers with high knowledge showed a much more dominant active participation; out of 41 highly knowledgeable mothers, 28 (68.3%) were active, while 13 (31.7%) were not active. Conversely, among 19 mothers with low knowledge, only 7 (36.8%) were active, while the majority, 12 people (63.2%), were not active. This emphasizes that a good understanding of Posyandu's benefits and functions is key to encouraging active involvement. A significant relationship was also found between the mother's attitude and Posyandu participation (p -value = 0.014). Mothers with a supportive attitude towards Posyandu were significantly more likely to participate actively; out of 28 mothers with a good (supportive) attitude, 21 (75%) were active, and only 7 (25%) were not active. Meanwhile, among 32 mothers with a less favorable (unsupportive) attitude, only 14 (43.8%) were active, and 18 (56.2%) were not active. This indicates that a positive attitude is an important predisposition for participation.

The analysis showed a significant relationship between the mother's age and Posyandu participation (p -value = 0.014), though with an interesting pattern. Mothers aged <20 years showed the highest active participation (15 out of 20 mothers, or 75%). Mothers aged 40-49 years also had a high rate of active participation (13 out of 19 mothers, or 68.4%). However, the 20-39 year old age group showed the lowest active participation (7 out of 21 mothers, or 33.3%), with the majority (66.7%) being not active. This pattern might indicate that younger and older age groups have different time availabilities or motivations compared to the 20-39 age group, who might be more burdened with career and young family demands.

Table 4. Multivariate analysis

Variable	p	OR	95% CI
Knowledge	35	117	0.016 – 0.861
Age	933	914	0.111 – 7.494
Education	112	51	0.001 – 1.999
Occupation	14	15.080	1.743 – 130.479
Attitude	19	116	0.019 – 0.698

Table 4 presents the results of a multivariate analysis assessing the independent influence of various maternal characteristics on the participation of mothers with toddlers in Posyandu activities, after controlling for other factors. The analysis reveals that mother's occupation is a highly significant predictor ($p=0.014$), demonstrating a remarkably strong association with participation, with an Odds Ratio (OR) of 15.080 and a 95% Confidence Interval (CI) of [1.743 – 130.479]. This indicates that mothers in a specific occupational category (likely unemployed, when compared to employed) are approximately 15 times more likely to participate actively, making it the most dominant factor in the model. Mother's knowledge also shows a statistically significant relationship ($p=0.035$) with participation, with an OR of 0.117 (95% CI: [0.016 – 0.861]). However, this OR of less than 1 suggests that, contrary to typical expectations and previous bivariate findings, higher knowledge is associated with decreased odds of active participation, potentially pointing to issues in variable coding or complex underlying relationships. Similarly, mother's attitude is significantly related ($p=0.019$), with an OR of 0.116 (95% CI: [0.019 – 0.698]), where a more favorable attitude is also associated with decreased odds of active participation, mirroring the counter-intuitive direction observed for knowledge. Conversely, mother's age ($p=0.933$) and mother's education ($p=0.112$) do not demonstrate a statistically significant independent relationship with Posyandu participation when other variables are controlled in this multivariate model. In summary, while mother's occupation emerges as the primary driver of participation, the significant yet inverse relationships observed for knowledge and attitude warrant further investigation into variable coding or the nuanced dynamics at play.

Discussion

This research finding is in line with Qiftiyah's¹¹ study, which found a significant relationship between education and Posyandu participation: the lower one's education, the less participation in Posyandu, and the higher one's education, the better the visits to Posyandu. A highly educated person will have a good understanding of a healthy lifestyle. The majority of respondents in this study were highly educated. Thus, these research findings are also in line with the theory that respondents come and visit Posyandu for their toddlers. Conversely, respondents with low education will hinder the development of a person's attitude towards healthy lifestyle changes, including understanding the importance of visiting Posyandu to monitor

children's health and development.¹² Therefore, it is necessary to increase mothers' understanding of Posyandu's benefits through health promotion carried out by health workers.

The occupations of mothers with toddlers registered at the Posyandu in Kemenangan Tani Village, Medan Tuntungan District, include private employees, farmers, and some who are unemployed. The researcher conducted observations and interviews with mothers of toddlers at the Posyandu. Mothers who are employed often do not have time to bring their children to Posyandu activities due to being too busy. There are also some employed mothers who do not attend Posyandu activities because they are able to take their children to hospitals, which they perceive as having better facilities than Posyandu. Occupation is strongly related to the participation level of toddlers in Posyandu. This is because some mothers still do not bring their toddlers to Posyandu, citing reasons such as not having time due to busy schedules, needing to help earn money for daily needs. The average economic status of the community in Gunung Selamat Village is relatively low, so mothers of toddlers often have to help their husbands earn a living. Sometimes, they visit Posyandu inconsistently and prefer to wait for health workers to visit their homes to provide health services for their toddlers. The results of this study show that some mothers with toddlers have limited knowledge about Posyandu. This indicates that mothers of children under 5 years old at the Posyandu in Kemenangan Tani Village, Medan Tuntungan District, still lack information about Posyandu. Several factors can influence mothers' lack of knowledge about toddlers. These include lack of information, poor maternal education, relatively young age, and no prior experience with children. This aligns with the fact that the researcher conducted a survey using questionnaires and provided health education to mothers with toddlers at the Posyandu in Kemenangan Tani Village, Medan Tuntungan District. Respondent feedback indicated that some mothers still did not understand the activities taking place at Posyandu. This is because most mothers with young children do not care about these activities, considering it a waste of time and money to bring their toddlers to Posyandu. With little knowledge, mothers are unaware of the benefits of participating in Posyandu activities. The role of health workers is to provide information to mothers with young children and encourage them to participate in their health and socialization. This increases mothers' knowledge and enables their children to be brought to Posyandu. The higher a mother's knowledge about the importance of Posyandu activities for toddlers, the better their toddler's health.¹³

Attitude is a predisposing factor or an inherent factor learned by an individual to respond in a consistent manner, describing a person's like or dislike towards a given object. Attitudes are often acquired from personal experiences or those of close others. Attitudes cause a person to approach or avoid others or other objects. A positive attitude towards health actions does not always manifest in an action, depending on the current situation. Attitudes will be followed by actions referring to the experiences of others; attitudes are followed or not followed by an action based on the extent of experience (Putri et al., 2015). From the research results, it was observed that 13 respondents (mothers) had a less favorable attitude but actively participated in Posyandu. This was influenced by peer encouragement to go to Posyandu, creating a sense of motivation due to having companions. Also, sufficient family support from husbands or other family members motivated mothers to go to Posyandu. Furthermore, 22 respondents (mothers) had a good attitude but were not active in visiting Posyandu. This was also caused by many factors, such as the mother's busy schedule on Posyandu day, lack of transportation to Posyandu because the distance somewhat requires using a vehicle, thus becoming a factor in the lack of Posyandu visits. These research findings are consistent with the studies by Arianti et al.¹⁴ and Sutatik et al.¹⁵ which found a relationship between the attitude of mothers with toddlers and Posyandu visits, indicating that mothers with a less favorable attitude are more likely to participate inactively in Posyandu than mothers with a sufficient attitude.

Conclusion

Based on the research findings, there is a significant relationship between mothers' knowledge and the visits of mothers with toddlers to Posyandu activities in Kemenangan Tani Village, Medan Tuntungan District in 2022. Furthermore, the characteristics of mothers with toddlers (age, education, occupation, and attitude) also show a relationship with their participation in Posyandu activities in the same location. Among all the independent variables studied, the mother's occupation is the most dominant factor influencing the participation of mothers with toddlers, with a p-value of 0.014, indicating strong significance.

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