

Determinants of maternal health-seeking behavior for stunted children in Indonesian community health centers: A cross-sectional study

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ABSTRACT

INTRODUCTION Stunting is a common health problem among children aged <5 years, with prevalence in Indonesia exceeding the WHO global limit. Despite progress, challenges remain, including mothers' decision to seek health facilities. This study aims to identify factors that influence mothers of stunted children to seek health services at a community health center.

METHODS This study used a cross-sectional design. Data were collected from 1 February to 31 October 2022 through questionnaires filled in by participants. The sample size was 224 participants who were recruited using consecutive sampling with the inclusion criteria of mothers who had short or very short children aged 24–59 months. Multiple logistic regression was used to analyze the data.

RESULTS Maternal education level (AOR=8.6; 95% CI: 2.36–31.84; p=0.002), sources of health information from healthcare providers (AOR=4.1; 95% CI: 1.24–17.17; p=0.025), number of children aged <5 years (AOR=0.2; 95% CI: 0.07–0.85; p=0.017), and family support (AOR=0.06; 95% CI: 0.02–0.33; p<0.001) were significantly associated with maternal healthcare-seeking behavior and remained in the adjusted model with p<0.05.

CONCLUSIONS Within our community health center setting, maternal health seeking behavior was influenced by maternal education level, healthcare providers' health information, the number of children aged <5 years, and family support. Socioeconomic and sociocultural factors may be considered for future research.

INTRODUCTION

Child chronic undernutrition is statistically significant as it provides an overview of the nutritional status of children in a population or country¹. One of the health problems today is the prevalence of short children, often known as stunting. Stunting refers to reduced physical growth and cognitive impairment, although the WHO definition focuses on the anthropometric aspect where stunted children have a height-for-age z-score (HAZ) that is >2 SD (standard deviation) below the WHO Child Growth Standards² median, or defined as HAZ < -2 SD. A reduction in physical development can be shown in height and weight that do not correspond to the average for children of the same age, as well as inactivity in the child. Meanwhile, cognitive abilities decrease as the child's thinking, learning, and memory skills are disrupted,

affecting gross and fine motor skills such as reading, writing, and playing with friends³. Toddler health is crucial because they are at a critical age of development and growth in their lives. Efforts to ensure toddler health are critical to provide a solid foundation for a healthy life in the future.

Stunting impacted around 21.9%, or 149 million toddlers worldwide, in 2018⁴. However, when compared to the stunting data from 2017, this figure had decreased partially⁵. The WHO report on stunting data indicates a trend of decreasing incidence rates from year to year, both internationally and in subregions around the world. Despite the drop, stunted toddlers can still be seen in every country, especially Indonesia. According to the results of the Indonesian Toddler Nutrition Status Survey from the 2019 Health Research and Development Agency's public relations, the prevalence

of stunting among children under the age of five years in Indonesia in 2019 was 27.67%⁶, and based on these findings, there has been a 3.1% drop in the incidence of stunting in children under the age of five years in Indonesia, compared to the 30.8% found in the 2018 Basic Health Research¹. Statistics on stunting can be utilized to create more effective policies and intervention programs to enhance children's nutritional status. This decrease in the number of stunting cases shows that the government's stunting reduction efforts can be regarded as effective in reducing stunting instances in Indonesia. Routine pregnancy check-ups, referred to as antenatal care (ANC), and education for pregnant women are among the policies implemented by the Indonesian government to prevent stunting during pregnancy⁷.

Male gender, small birth weight, children from low-income families, mother's low level of education, and multiple deliveries all have a substantial impact on the occurrence of stunted in children in the future⁸. Stunting in Indonesia is caused by factors such as family socioeconomic potential and cultural factors^{9,10}. The behavior of mothers seeking healthcare facilities for their children who have health concerns such as stunting has a significant impact on the success of government efforts to combat stunting in Indonesia, particularly in ensuring that children receive healthcare. However, this is inversely proportional to the actual condition of society, since many individuals are still unable to access existing healthcare facilities. According to previously conducted studies, as many as 52% of women did not go to healthcare facilities because they believed that the illness might treat itself, believed in traditional medicine, were busy with work, needed to travel a long distance, or had no concerns¹¹. Another study concluded that 29.2% of mothers did not seek healthcare due to household economics and access to services¹². Other studies identified factors such as shy mothers, distrust of officers, and poor attitudes of health personnel¹³, household economic income, lack of information exposure, and accessibility to services¹⁴, as well as factors such as education and insurance also had a huge impact¹⁵.

According to statistics, behavioral factors contribute to 30% of health problems¹⁶. Health behavior is a set of individual behaviors that contribute to health¹⁷, particularly the behavior of mothers in seeking health services for their stunted children¹⁸. Understanding maternal healthcare-seeking behavior is a crucial step towards reducing child stunting¹⁹. As a result, the objective of this study was to identify the primary factors that influence mothers' decisions to seek health treatment at a community health center for their stunted children.

METHODS

Study design and setting

This is a cross-sectional observational study. The study was conducted at Menjalin and Karang community health centers in Landak Regency, West Kalimantan Province,

Indonesia. The villages with the highest prevalence of stunting were among the 16 villages included in this study at the community health center. The study was done from February to October 2022.

Participants

The inclusion criteria for this study were mothers who had stunted children aged 24–59 months through measurements based on height-for-age z-scores of < -2 SD, using the World Health Organization's growth reference curve². Mothers who had short and very short children based on the measurement results were included in this study. Exclusion criteria for this study were mothers who had children with severe infectious diseases, congenital abnormalities, chronic diseases, mental retardation, or refused to participate. The sample was taken using consecutive sampling technique, by selecting every mother who brought her child to the community health center according to the inclusion criteria. The study sample was calculated using the proportion estimation formula for cross-sectional research with the formulation²⁰:

$$n = \frac{Z^2 \times p(1-p)}{d^2}$$

where Z^2 is 1.96 for a 95% confidence level, p is the expected prevalence of 0.16 based on documentation studies at the community health center, q is the complement of p ($1-p$, or 0.84), and d is the margin of error of 0.05. The total sample size according to the calculation is 207, but in this study the researcher used a sample size of 224 on the grounds of anticipating invalid, damaged or missing data.

Data sources and measurements

Data collection was carried out by researchers together with research assistants using a questionnaire sheet in the form of a checklist. Research assistants were chosen from health workers who had been trained in measuring anthropometry of height and weight. Research assistants were also health workers who work at the community health center where the study was conducted. Questionnaires were given to participants to fill in themselves if the respondent had the ability to read and write, but if the respondent did not have the ability to read and write, the questionnaire was filled in assisted by the researcher by reading the questions and selecting the answer by circling it using a pen. Before the questionnaire sheet was given, the researcher first explained how to fill in the questionnaire by the mother and the anthropometric measurements required on the child. After consent was obtained from the respondent, a new questionnaire sheet was given to be filled in within about 15 minutes. Once the questionnaire sheet was completed, it was given to the researcher who checked that all questions were filled in by the respondent. Researchers designed their own questionnaires in accordance with the variables to be studied, based on the research objectives. The answers to the questions were in the form of two categories using a

nominal scale, and a questionnaire was tested on 30 different respondents before the questionnaire was actually given for research; the results were r table >0.320 and $\alpha=0.70$, so that it was declared valid and reliable. The questionnaire is divided into 3 parts, namely information sheet, consent sheet and question sheet according to the variables studied.

Variables

Maternal health seeking behavior was the dependent variable. Maternal behavior was measured by asking the mother about the first health service she went to when her child experienced symptoms of developmental delay such as appearing short, thin and inactive compared to other children of the same age, whether her child was taken directly to the community health center or not. The independent variables of this study were the mother’s education level (formal education, no formal education), having more than one child under 5 years of age (yes, no), whether the distance of residence to the health center is <1 km (yes, no), getting information from health workers (yes, no), family support (yes, no), friends’ support (yes, no), and health workers’ support (yes, no).

Statistical analysis

Data analysis was conducted using STATA 16 software. First, a univariate and bivariate analysis using frequency distribution statistics was performed to describe the characteristics of participants. Potentially confounding variables such as the mother’s education level, more than one child aged <5 years, distance of home from community health center <1 km, source of information from health workers, family support, friends’ support, and health workers’ support were subjected to regression model analysis to control for their influence on mothers’ health-seeking behavior towards community health centers, including variables with a $p<0.25$ in the bivariate analyses in the multivariate analysis using multiple logistic regression statistical tests. We then created a model to exclude the confounding variable by computing the change in the odds ratio (OR) value for all independent variables, starting with the independent variables with the highest p -value. Finally, we ensured that there were no more independent variables that had a $p> 0.05$ in the final model.

Ethical considerations

Ethical clearance was issued by the Health Research Ethics Committee, Polytechnic Ministry of Health in Pontianak, with ethical approval number 44/KEPK-PK.PKP/III/2022. Date of approval 16 March 2022. All participants already signed informed consent for the study. The researcher used a code for each research information to ensure the anonymity and confidentiality of the participants.

RESULTS

A total of 640 mothers who came to the community health center to have their children examined were selected for

the study sample, but 224 participants were confirmed to be eligible for inclusion in the study until data analysis was conducted. Participants who did not fulfil the inclusion criteria were excluded from the study. There was no missing data from any participant, and the response rate was high as all participants were willing to take part in every stage of the study.

Table 1 gives sociodemographic characteristics of the participants. The mean \pm SD age of participants was 31.4 ± 6.4 years, mainly housewives (93.7%), indigenous people (96.4%), permanent residents (99%), and most (91%) referred their stunted children to the community health center.

Table 2 shows that there are several factors that are statistically significantly associated with maternal healthcare-seeking behavior at community health center: maternal education level ($p<0.001$), having more than one child aged <5 years versus maternal healthcare-seeking behavior ($p<0.05$), the distance between home and community health center <1 km ($p<0.05$), source of health information obtained from healthcare providers ($p<0.05$), supported by family ($p<0.001$), and supported by friends ($p<0.05$).

Table 3 shows that after conducting multiple logistic regression analysis and controlling for potential confounding factors, the results showed that maternal education level (AOR=8.6; 95% CI: 2.36–31.84; $p=0.002$), sources of health information obtained from health workers (AOR=4.1; 95% CI: 1.24–17.17; $p=0.025$), having more than one child aged <5 years (AOR=0.2; 95% CI: 0.07–0.85; $p=0.017$), and having family support (AOR=0.06; 95% CI: 0.02–0.33; $p<0.001$) were significantly associated with maternal health seeking behavior and remained in the adjusted model. Other variables, such as support from friends and the distance between the residence and the health facility, were not retained in the final model, suggesting that they did not significantly affect the outcome after adjustment.

Table 1. Characteristics of participants by age, occupation, ethnicity, and residency (N=224)

Characteristics	n	%
Age (years), mean \pm SD	31.4 \pm 6.4	
Another occupation		
Yes	14	6.3
No	210	93.7
Ethnicity		
Indigenous	216	96.4
Not indigenous	8	3.6
Residency		
Permanent	222	99
Temporary	2	1

Table 2. Bivariate analysis of factors influencing maternal behavior in utilizing health services at community health centers (N=224)

Factors	Seeking healthcare at the community health center				Total		p
	Yes		No		n	%	
	n	%	n	%			
Total	202	90.2	22	9.8	224	100	
Mother's education level							
Formal education	191	85	13	6	204	91	0.000**
No formal education	11	5	9	4	20	9	
More than one child under five years							
Yes	142	63.4	7	3.1	149	66.5	0.001*
No	60	26.8	15	6.7	75	33.5	
Distance between residence and health facility <1 km							
Yes	125	55.8	21	9.4	146	65	0.013*
No	77	34.4	1	0.4	78	35	
Sources of health information from healthcare provider							
Yes	178	79.4	15	6.7	193	86.2	0.014*
No	24	10.8	7	3.1	31	13.8	
Family support							
Yes	195	87	12	5.4	207	92.4	0.000**
No	7	3.1	10	4.5	17	7.6	
Friends' support							
Yes	183	81.7	14	6.2	197	88	0.001*
No	19	8.5	8	3.6	27	12	
Healthcare providers' support							
Yes	196	87.5	21	9.4	217	96.8	0.689
No	6	2.7	1	0.4	7	3.2	

Showned statistically significant relationship: *p<0.05, **p<0.001.

Table 3. Logistic regression analysis of full and final models on maternal health seeking behavior at community health centers (N=224)

Variables	Full models			Final models		
	p	OR	95% CI	p	AOR	95% CI
Mother's education level	0.014	6.5	1.46–29.00	0.002	8.6	2.36–31.84
Source of health information from healthcare provider	0.022	4.6	1.24–17.17	0.025	4.1	1.19–14.51
More than one child under 5 years	0.026	0.2	0.07–0.85	0.017	0.2	0.07–0.78
Family support	0.000	0.08	0.02–0.33	0.000	0.06	0.01–0.22
Friends' support	0.001	0.4	0.10–2.09			
Distance between residence and health facility <1 km	0.044	9.2	1.05–80.46			

AOR: adjusted odds ratio.

DISCUSSION

Mother's education level, information from health providers, mothers having more than one child aged < 5 years, and family support, were statistically significant factors influencing mothers' behavior to go to the community health center in terms of the health facility mothers chose for their stunted child. However, the factors of friends' support and distance from the health center did not have a statistically significant effect. Some previous studies have stated that distance from the residence influences whether a person utilizes health facilities^{21,22}, but this is different from the results of this study. According to the researchers, the ease of accessing the location²³ and the limited choice of healthcare facilities²⁴ influence a person to utilize health services. Further research needs to be conducted to see the extent of the influence of distance from home or residence on the behavior of choosing healthcare facilities.

In this study, mothers' education level was the dominant factor that most influenced maternal health seeking behavior at community health centers. Mothers who have formal education such as elementary, junior high school, senior high school and higher education have a tendency to choose community health centers to treat their stunted children, compared to mothers who have no formal education. These results are in line with previous research which states that a higher level of education of the mother allows mothers to use the healthcare facilities available²⁴. Other research that supports the results of this study is that low levels of maternal education have a negative impact on mothers in seeking health services²⁵. Education is a social predictor of individuals that can influence health²⁶. According to researchers, formal education, such as school and college, gives individuals access to a wider range of knowledge. A person with higher education may be better able to seek and understand relevant health information such as the various health services available compared to those with lower education. The higher the level of the mother's education, the larger her chances of being exposed to health information²⁷.

In this study, mothers mostly obtained health information about stunted children from healthcare providers at the community health center; the role of health workers indirectly had an impact on mothers' self-confidence because they trusted this information, provided by healthcare providers²⁸. Further, the same community setting, particularly the sociocultural framework between health workers and mothers, instills confidence and trust in the information provided by healthcare providers, this way mothers can access health services at the community health center²⁹.

According to the findings of this study, the child's age can also influence the mother. Children aged <5 years are more prone to disease because their immune systems are still learning to recognize foreign bodies, particularly viruses and bacteria, that enter their bodies³⁰. Concern about the child's condition and the necessity of early treatment for children

may prompt mothers to get healthcare services¹¹. The family will endeavor to protect and defend each family member from potentially harmful situations, and the family will always protect its members in accordance with the family's protective function³¹.

In this study, offering advice to mothers to bring their children to the health center contributed to almost half of the family support. Numerous studies have shown that family support has a significant impact on improving health^{32,33}. The mother's nuclear or extended family serves as a social support network³⁴. Mothers who get correct information from family members they trust, tend to be more consistent in adopting positive health behaviors such as promoting sick family members to access good health services³⁵. In addition, emotional support from family members can improve a mother's psychological well-being³⁶.

Strengths and limitations

The strengths of this study are the use of multivariate analysis which allows potential confounding variables to be controlled, and the collection of primary data directly collected in the field ensures that specific factors that can affect stunting can be identified properly, which is expected to strengthen the validity of the study results. A limitation of this study is that a multicollinearity test was not conducted to check whether there is a strong linear relationship between two or more independent variables in the regression analysis, but we performed Pearson correlations as a simple method to detect early signs of multicollinearity between two variables. Due to cross-sectional design, we were not able to assess causality. The results of this study may be generalized to areas with similar sociodemographic characteristics.

CONCLUSIONS

The results of this study reinforce the existing theory that maternal education is related to children's health status, so education to mothers may have an effect on improving public health, while accurate sources of information can reduce misinformation that can have a negative impact on health. Families with more children may have challenges in providing nutritious food for all children or lack of attention and support from parents, which may interfere with child development. Local governments can use these findings to improve health education programs and primary healthcare services in rural areas. This study provides strong empirical evidence to support health policy reform in the area of maternal and child health services. However, other factors such as socioeconomic and cultural factors may also influence these findings, so further research is needed to examine the influence of these factors on maternal health-seeking behavior.

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CONFLICTS OF INTEREST

The authors have completed and submitted the ICMJE Form for Disclosure of Potential Conflicts of Interest and none was reported.

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DATA AVAILABILITY

The data supporting this research are available from the authors on reasonable request.

PROVENANCE AND PEER REVIEW

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