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THE ROLE OF SOCIAL SUPPORT AND SOCIAL MEDIA USE IN SHAPING MOTHERS' KNOWLEDGE OF STUNTING IN INDONESIA: A CROSS-SECTIONAL STUDY

Agni Laili Perdani[1,*] Alifvia Fitri Zahira[2], and Dewi Srinatania[1]
[1]Department of Pediatric Nursing, Sekolah Tinggi Ilmu Keperawatan PPNI Jawa Barat
[2]Bachelor of Nursing Study Program, Sekolah Tinggi Ilmu Keperawatan PPNI Jawa Barat
Coressponding Email : alperdani1989@gmail.com

ABSTRACT

Introduction: Stunting is a persistent global public health issue and a key target of the Sustainable Development Goals (SDGs) 2030. Indonesia has the third highest prevalence of stunting among Southeast Asian countries. Maternal knowledge plays a critical role in the prevention and management of stunting during early childhood. **Purpose:** This study aimed to examine the relationship between social support, social media use, and maternal knowledge regarding stunting. **Methods:** A quantitative, cross-sectional study was conducted at a Community Health Center in an urban area of Indonesia between May and June 2022. A total of 250 mothers with children under five years of age participated. Data were collected using structured questionnaires, including demographic characteristics, a maternal stunting knowledge scale, the Multidimensional Scale of Perceived Social Support, and a scale assessing perceived internet use. Data were analyzed using linear regression. **Results:** The mean maternal age was 29.8 years (SD ± 6.92), and the mean age of children was 25.90 months (SD ± 17.15). Most participants reported high social support (60.4%), had a senior high school education (60.8%), were multiparous (55.6%), and were unemployed (81.2%). The average score for social media usability was 24.65 (SD ± 3.33). A majority of mothers (89%) demonstrated good knowledge of stunting. Maternal education contributed 4.5% to the variance in stunting knowledge. **Conclusion:** Higher maternal education was significantly associated with greater knowledge of stunting, possibly due to better access to accurate health information. Enhancing maternal education and information access may support national efforts to reduce stunting prevalence.

Keywords : Children, Knowledge, Social Support, Social Media, Stunting

INTRODUCTION

Stunting remains a significant public health concern globally and is explicitly targeted in the Sustainable Development Goals (SDGs) 2030 agenda (World Health Organization, 2018b). It predominantly occurs during the critical first 1,000 days of life—a

developmental window considered the "golden period" for growth. During this time, adequate nutrition, sanitation, and clean water access are crucial (Ministry of Health Republic of Indonesia, 2017). In Indonesia, the burden of stunting is particularly alarming, ranking third in Southeast Asia with a national prevalence of 36.4% among children under five (WHO, 2018c).

Multiple studies have highlighted individual-level determinants of maternal knowledge on stunting, including maternal age, education, employment status, attitudes, prior experience, and sources of health information (Rahmandiani et al., 2019; Rahmawati et al., 2019). Improving maternal knowledge is essential to promoting better feeding practices and ultimately preventing stunting, as inadequate understanding of nutrition and growth has been directly associated with developmental delays in children (Hall et al., 2018; Margawati & Astuti, 2018).

Social support and digital media are two emerging factors that may jointly influence maternal health knowledge. Social support commonly defined as emotional, informational, and instrumental aid provided by family, friends, and significant others plays a critical role in maternal decision-making. According to the Ecological Model, a mother's behavior is shaped not only by individual knowledge but also by the support systems surrounding her (Bronfenbrenner, 1994). Prior research has shown a positive correlation between family support and improved nutritional status among children under five (Zhou & Taylor, 2022), emphasizing that support enhances a mother's confidence and motivation to seek and apply health-related information (WHO, 2018a).

Concurrently, in the context of Industry 4.0, the proliferation of smartphones and social networks has reshaped how mothers access health knowledge. Digital media use—defined in this study as the frequency, duration, and purpose of using online platforms to obtain health information—has been associated with enhanced awareness and behavioral change. Several Indonesian studies have noted that 66% of mothers use smartphones to search for information on stunting, with 84% searching specifically for definitions and prevention strategies (Indriyani et al., 2018; Soekatri et al., 2020; Torlesse et al., 2016). However, the intensity and reliability of the information vary, and the actual impact of such digital engagement on health literacy is still underexplored.

Despite these insights, few studies in Indonesia have quantitatively explored how social support and digital media usage jointly influence maternal knowledge of stunting, particularly in the context of early childhood development. Moreover, there remains limited evidence on how these two factors interact and whether one moderates the effect of the other in enhancing maternal understanding.

Therefore, this study aims to examine the relationship between maternal knowledge of stunting and two key predictors such as social support and social media use among mothers of children under five in Indonesia. The findings are expected to offer insights for targeted health promotion strategies that integrate both community-based and digital approaches to reduce the prevalence of stunting through knowledge empowerment.

METODE

Study Design

This study adopted a quantitative cross-sectional research design, which was conducted over a two-month period, from May to June 2022. The study aimed to examine the predictive relationships between social support, perception of internet use, and maternal knowledge of stunting. This design was selected to capture data at a single point in time, allowing for analysis of associations among variables within the population of interest.

Sample and Sampling Technique

The research was conducted at selected Community Health Centers (Puskesmas) located in an urban area of Indonesia. The study employed a convenience sampling method, recruiting participants based on their availability and willingness to participate. Inclusion criteria were: (1) mothers with children under five years of age, (2) able to communicate effectively, and (3) provided informed consent to participate in the study. A total of 250 respondents met the eligibility criteria and were included in the final analysis.

Instruments

The instruments used in this study consisted of four structured components to comprehensively capture the variables under investigation. First, a demographic questionnaire was developed to collect basic information regarding maternal and child characteristics, including age, education level, employment status, parity, and the age of the child. Second, maternal knowledge of stunting was assessed using the Knowledge of Stunting Questionnaire, which was adapted from Haines et al. (2012) and validated in Bahasa Indonesia by Setyawati et al. (n.d.). This instrument comprised 20 dichotomous items (correct = 1, incorrect = 0), and demonstrated high internal consistency in the present study with a Cronbach's alpha of 0.881. Third, perceived social support was measured using the Multidimensional Scale of Perceived Social Support (MSPSS), developed by Gregory et al. (2014), consisting of 12 items across three subscales—family, friends, and significant others—rated on a 5-point Likert scale ranging from strongly disagree (1) to strongly agree (5). The MSPSS showed acceptable

reliability in this study with a Cronbach's alpha of 0.767. Fourth, the Perception of Internet Use Scale, developed by Tsai and Tsai (2003), was employed to assess participants' attitudes and frequency of social media use in relation to health information. This scale also used a 5-point Likert format and achieved a Cronbach's alpha of 0.844 in this study, indicating good reliability. Both the MSPSS and the Internet Use Scale were translated and culturally adapted into Bahasa Indonesia through a rigorous forward and backward translation process to ensure linguistic and conceptual validity.

Data Collection Procedure

Data were collected onsite by trained data collectors under the supervision of the principal investigator. Participants completed the questionnaires in a private setting within the health centers to maintain confidentiality and minimize response bias. Written informed consent was obtained prior to participation, and respondents were assured that their information would remain confidential and be used solely for academic purposes.

Data Analysis

Data analysis was performed using SPSS (Statistical Package for the Social Sciences) after initial data cleaning and screening procedures were completed. The dataset was examined for completeness, and missing data—found to be minimal (<5%)—were addressed using listwise deletion to maintain consistency across multivariate analyses. Descriptive statistics were used to summarize demographic characteristics, including means and standard deviations for continuous variables and frequencies and percentages for categorical variables. Prior to inferential analysis, the assumptions for linear regression were thoroughly tested. The normality of residuals was assessed through Q-Q plots and the Shapiro–Wilk test, while homoscedasticity was evaluated using residual-versus-predicted scatterplots. The independence of residuals was confirmed using the Durbin–Watson statistic, which fell within the acceptable range of 1.5 to 2.5. Multicollinearity among predictor variables was assessed using the Variance Inflation Factor (VIF) and tolerance values, with results indicating no multicollinearity issues (VIF < 2.0; tolerance > 0.5). For bivariate analysis, Pearson or Spearman correlation tests were employed depending on the distribution of the variables. Finally, multiple linear regression analysis was conducted to determine the predictive effects of perceived social support and perception of internet use on maternal knowledge of stunting. All statistical

tests were performed at a 95% confidence level, with a p-value of less than 0.05 considered statistically significant.

Ethical Consideration

The study received ethical clearance from the Institutional Review Board of STIKep PPNI West Java, with reference number: III/016/KEPK-SLE/STIKEP/PPNI/JABAR/VI/2022. All research procedures were conducted in accordance with the ethical principles outlined in the Declaration of Helsinki, including respect for autonomy, confidentiality, and voluntary participation.

RESULTS

Table 1. Mothers and children demographic characteristics toward stunting knowledge (n=250)

Variables	Mean ± SD	f(%)
Mother Age (year)	29.80 ± 6.92	
Children Age (months)	25.90 ± 17.15	
Gender		
Boys		110 (44)
Girls		140 (56)
Education		
Elementary School		16 (6.4)
Junior High School		58 (23.2)
Senior High School		152 (60.8)
Higher education		24 (9.6)
Type of parity		
Primiparous		103 (41.2)
Multiparous		147 (58.8)
Occupation		
Private & government employee		34 (17.2)
Entrepreneur		13 (5.2)
Unemployment		203 (81.2)
Family type		
Nuclear		171 (68.4)
Extended		79 (31.6)
Health history		
Infectious		5(2)
Non-infectious		245(98)
Exclusive breast milk		
Yes		191 (76.4)
No		59 (23.6)
Nutrition status (Weight/Age)		
Severely Underweight & Underweigh		33 (13.2)
Normal		198 (79.2)

Risk of obese	19 (7.6)
Nutrition status (Length/Age)	
Severely Stunted & Stunted	79 (31.6)
Normal	157 (62.8)
Tall	14 (5.6)
Nutrition status (Weight/Length)	
Severely Wasted & Wasted	
Normal	15 (10)
Overweight	198 (79.2)
Obese	30 (12)
	7 (2.8)

Table 2. The level of stunting knowledge, social support and social media use (n=250)

Variables	Mean ± SD	f(%)
Stunting knowledge		
Good	223 (89.2)	
Poor	27 (10.8)	
Social Support		
Low		4 (1.6)
Moderate		95 (38)
High		151 (60.4)
Total score stunting knowledge	12.92 ± 1.91	
Total score social support	2.59 ± 0.52	
Social media use	24.65 ± 3.33	

Table 3. The relationship between mother stunting knowledge and other variables

Variabel	Knowledge		*p-value*
	r/t/F	95% CI	
Age (mother)	0.05[a]	-0.07 – 0.17	0.43
Education	3.17[c]		0.01**
Type of parity	1.24[c]		0.28
Occupation	0.68[c]		0.56
Family type	-0.14[b]	-0.55 – 0.47	0.88
Age (children)	0.08[a]	-0.04 – 0.20	0.19
Gender	-0.44[b]	-0.58 – 0.37	0.65
Health history	0.56[b]	-1.21 – 2.19	0.57
Weight/Age	0.59[c]		0.62
Length/Age	1.23[c]		0.29
Weight/Length	0.89[c]		0.48
Exclusive breast milk	0.42[b]	-0.44 – 0.68	0.66
Social support	1.24[c]		0.28

Social media use	0.01[a]	-0.10 - 0.14	0.79

[a]Sperman correlation, [b] Independent t-test, [c] One-way Anova
**Correlation is significant at the 0.01 level (2-tailed).

Table 4. Factors associated toward sunting knowledge

Variabel	β	SE	Beta	t	*p-value*
Elementary School	-2.35	0.97	-0.30	-2.43	0.016*
Junior High School	-1.89	0.88	-0.41	-2.15	0.032*
Social support	0.00	0.01	0.03	0.54	0.60
Social media use	0.00	0.03	0.00	0.11	0.90

It shows that the average mother's age is 29.8 years (SD±6.92), and the most recent education of mothers from high school (60.8%). The parity status of most respondents was 139 mothers (55.6%) who were multiparous with 2-4 children. A total of 203 mothers (81.2%) were unemployed, all were married (100%), and 171 (68.4%) mothers lived with nuclear families (Table 1).

DISCUSSION

This study confirms that maternal education plays a pivotal role in determining knowledge about stunting in children under five. Mothers with higher levels of education are more likely to access health information from trustworthy sources, comprehend complex health messages, and apply accurate knowledge in daily caregiving. In the digital era, the interaction between educational background and information-seeking behavior becomes even more critical, particularly with the widespread availability of health content via social media.

Interestingly, although most mothers in this study reported frequent use of social media and high levels of social support, neither variable was significantly associated with their stunting-related knowledge. This raises important questions about the quality, credibility, and relevance of health information shared on social platforms. While social media can offer rapid and wide-reaching dissemination of public health campaigns, it may also foster misinformation or superficial engagement, especially when messages are not tailored to local culture or literacy levels.

Using the Health Belief Model (HBM) as a framework, a possible explanation is that although mothers may be exposed to health information online, the perceived severity, susceptibility, or self-efficacy related to stunting may not be adequately addressed through general social media content. For information to translate into knowledge and behavior, cues to action and belief modification are essential components often lacking in untargeted digital campaigns.

Similarly, according to the Theory of Planned Behavior (TPB), the intention to seek, process, and retain stunting-related knowledge is influenced not only by social norms (e.g., peer support) but also by perceived behavioral control—whether mothers believe they have the skills or opportunity to act on the information they receive.

From a practical standpoint, these findings suggest that health campaigns on social media must be carefully designed to engage Indonesian mothers, considering not just message content but also delivery style and cultural relevance. Campaigns should incorporate interactive elements, such as community testimonials, visual infographics, and behavior modeling videos, to enhance relatability and retention. Involving local influencers or community health workers in message dissemination may further enhance trust and uptake.

The study also found that mothers who were not engaged in full-time employment had higher stunting-related knowledge, possibly due to more opportunities for involvement in childrearing and access to health services. This supports the importance of targeted outreach to working mothers, who may be time-constrained and less exposed to educational activities offered by community health centers.

Nevertheless, the study has several limitations. The cross-sectional design prevents inference of causal relationships, and future research should consider longitudinal or experimental studies to clarify how digital media exposure over time influences maternal health literacy. Additionally, the study was conducted in urban health centers, which may limit generalizability to rural populations where internet access and health infrastructure differ significantly. The use of self-report measures may introduce recall or social desirability bias, and while validated instruments were used, the depth of actual behavioral change or application of knowledge was not assessed.

Future research could benefit from using mixed-methods approaches to understand not only how much mothers know, but also how they interpret, trust, and act upon health information. Additionally, randomized controlled trials of targeted social media interventions could determine the most effective strategies for improving maternal knowledge and preventing stunting in diverse Indonesian communities.

CONCLUSIONS

The results of this study highlight the significant influence of a mother's educational background on her understanding of stunting in children under five. Mothers with higher levels of education appear better equipped to seek out and process accurate health information, which may contribute to improved caregiving practices. Interestingly, although social media use and social support were widespread among participants,

neither showed a measurable impact on knowledge about stunting. This finding suggests that simply having access to information through digital or social channels is not enough what matters more is the quality, clarity, and cultural relevance of that information. The findings also point to the limitations of generic public health messaging on social media platforms. Health promotion efforts that do not consider the audience's beliefs, perceived risks, and behavioral confidence may struggle to translate awareness into action. Utilizing established theoretical models such as the Health Belief Model and Theory of Planned Behavior could help guide more effective interventions by addressing deeper psychological and social factors influencing maternal learning and behavior. Furthermore, the study found that mothers not engaged in formal employment had higher levels of knowledge, possibly due to greater availability to participate in childcare and access health education services. This calls for more inclusive outreach programs that consider the time limitations faced by working mothers. Given the study's limitations including its cross-sectional design, urban-only setting, and reliance on self-reported data—future research should adopt longitudinal or mixed-methods approaches to better understand how health information is interpreted, trusted, and applied by mothers. Tailored, evidence-based social media strategies have the potential to enhance maternal health knowledge and contribute meaningfully to stunting prevention across diverse Indonesian populations.

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