JURNAL BIOMETRIKA DAN KEPENDUDUKAN

(Journal of Biometrics and Population)

PARENTING BEHAVIOUR AND STUNTING PREVENTION IN SOUTH SULAWESI PROVINCE, INDONESIA

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Published by *Fakultas Kesehatan Masyarakat Universitas Airlangga*

Keywords:
stunting,
behavior,
cultural factor

ABSTRACT

Stunting in children is influenced not only by food availability but also by various factors such as family caregiving practices, which in many cases remain suboptimal. There are still families who have not practiced optimal parenting patterns. This study aims to determine family parenting behavior and analyze factors that can support increased efforts to prevent stunting in toddlers. The study used a quantitative approach with a survey method, the population was all families with toddlers in South Sulawesi Province and 260 families as samples. The data were processed and analyzed through three stages: univariate analysis to describe the characteristics of the variables, bivariate analysis using the Chi-square statistical test (with Yates' correction) to see the relationship between variables, and multivariate analysis using a binary logistic regression model. The study's results showed a positive relationship between parenting behavior and parenting knowledge, environmental sanitation knowledge, nutritional knowledge, parenting attitudes, parenting motivation, family planning, and culture ($p<0.05$). Meanwhile, the variables of environmental health knowledge and environmental sanitation attitudes did not show a significant relationship ($p>0.05$). The main strategies for interventions to improve family parenting behavior in efforts to prevent stunting are culture (B=2.492;p=0.000), environmental sanitation knowledge (B=1.936;p=0.000), family planning (B=1.429;p=0.030), and parenting attitudes (B=1.003;p=0.000). Recommendations include involving local stakeholders, including community leaders, religious leaders, and regional organizations in supporting family parenting efforts in controlling stunting through increasing environmental sanitation knowledge, family planning, and positive parenting attitudes based on local wisdom.

***Kata Kunci**:*
stunting,
perilaku,
faktor budaya

ABSTRAK

Stunting pada anak dipengaruhi tidak hanya oleh ketersediaan pangan, tetapi juga oleh berbagai faktor, termasuk perilaku pengasuhan keluarga. Praktik pengasuhan yang diterapkan dalam keluarga belum berlangsung secara optimal. Penelitian ini bertujuan untuk mengetahui perilaku pengasuhan keluarga serta menganalisis faktor yang dapat mendukung peningkatan upaya pencegahan stunting pada balita. Penelitian menggunakan pendekatan kuantitatif dengan metode survei, populasi adalah seluruh keluarga yang memiliki anak balita di Provinsi Sulawesi Selatan dan sebanyak 260 keluarga sebagai sampel. Data diolah dan dianalisis melalui tiga tahapan, analisis yaitu univariat untuk menggambarkan karakteristik variabel, analisis bivariat menggunakan uji statistik Chi-square (dengan koreksi Yates) untuk melihat hubungan antar variabel, serta analisis multivariat melalui model regresi logistik biner. Hasil studi menunjukkan adanya hubungan positif antara perilaku pengasuhan dengan pengetahuan pola asuh, pengetahuan sanitasi lingkungan, pengetahuan gizi, sikap pola asuh, motivasi pengasuhan, perencanaan keluarga, dan budaya ($p<0,05$). Sementara variabel pengetahuan kesehatan lingkungan dan sikap sanitasi lingkungan tidak menunjukkan hubungan signifikan ($p>0,05$). Strategi utama intervensi peningkatan perilaku pengasuhan keluarga dalam upaya pencegahan stunting yaitu budaya (B=2,492; p=0,000), pengetahuan sanitasi lingkungan (B=1,936; p=0,000), perencanaan keluarga (B=1,429; p=0,030), dan sikap pola asuh (B=1,003; p=0,000). Rekomendasi yaitu melibatkan pemangku kepentingan lokal, termasuk tokoh masyarakat, tokoh agama dan organisasi lokal dalam mendukung upaya pengasuhan keluarga dalam pengendalian stunting melalui peningkatan pengetahuan sanitasi lingkungan perencanaan keluarga, dan sikap positif pola asuh berbasis kearifan lokal setempat.

Received 16 October 2024 **; Reviewed** in 24 March 2025 **; Accepted** in 30 June 2025 **; p-ISSN** 2302–707X - **e-ISSN** 2540–8828 ; **DOI:** https://doi.org/10.20473/jbk.v14i1.2025.66-77 **; Cite this as :** Azis R, Akmal A, Rahayu I, Masriadi M, Alif AB, Samsidarwati B. Parenting Behaviour and Stunting Prevention in South Sulawesi Province, Indonesia. J Biometrika dan Kependud [Internet]. 2025;14(1):56–67. Available from: https://doi.org/10.20473/jbk.v14i1.2025.66-77

INTRODUCTION

Sustainable Development Goals (SDGs) have various goals, including ending hunger, improving food security and nutrition, promoting healthy lifestyles, and ensuring access to clean water and adequate sanitation. This goal is crucial because it is closely related to preventing stunting, a condition of stunted growth in children caused by chronic malnutrition and repeated infections. Stunting prevention can be achieved by ensuring adequate nutrition, a clean environment, and basic health services are met. Children are the most vulnerable group because they are highly dependent on adequate nutrition, a clean environment, and basic health services. Failure to meet these needs can increase the risk of stunting, which negatively impacts a child's long-term growth and development (1).

The risk of malnutrition in children can be prevented starting in the womb and continuing through the first two years of life, known as the first 1000 days of life.(2)The negative impacts of stunting can last a lifetime and even affect future generations. Toddlers who are stunted will face difficulties in achieving optimal growth and development in the future and are at risk of developing chronic diseases such as diabetes, hypertension, obesity, heart disease, and other degenerative diseases (3–5).

Globally in 2024, approximately 150.2 million children under 5 years of age (toddlers) will experience stunting, which is equivalent to 23.2% of the total population of children of that age (6). According to data from the Indonesian Nutritional Status Survey or *Survei Status Gizi Indonesia* (SSGI), the prevalence of stunting in Indonesia is projected to increase from 21.5% in 2023 to 19.8% in 2024. Despite the decline, this figure remains above the WHO standard, which sets an ideal stunting prevalence of below 20%. The government is targeting a further reduction to 14.2% by 2029, in accordance with the National Medium-Term Development Plan or *Rencana Pembangunan Jangka Menengah Nasional* (RPJMN). This requires strong efforts and closer collaboration (7).

The prevalence of stunting in toddlers in South Sulawesi is 27.2% (SSGI 2022) and 21.5% (Indonesian Health Survey Data 2023), which is still relatively high and above the national average. The highest prevalence of stunting was in Jeneponto (39.8%) in 2022, which decreased to 16.99% in 2023. Makassar City (18.4%) in 2022 increased to 25.7% in 2023. The target set by the WHO (World Health Organization) is 20%, and the government's target by the end of 2024 is 14%.(3,8,9)The significant changes in stunting rates in these two regions demonstrate the dynamics of efforts to address child nutrition issues. The increase in stunting rates in Makassar City is a serious concern, while the significant decline in Jeneponto Regency reflects the success of the interventions.

The family is the primary environment that determines how to maximize the golden age (the first 1,000 days of a child's life, calculated from conception to the age of two), a stage of rapid growth and development. Parents must know how to capitalize on this opportunity, as this is a critical period in their child's development (10).

Parenting knowledge, motivation, attitudes, and behaviors significantly influence a child's growth and development. Child development issues that can lead to stunting are not solely due to family food availability but can also be caused by a variety of factors, including social and economic conditions, maternal nutrition during pregnancy, recurrent infant illness, health services, sanitation, environmental health, and family knowledge, motivation, attitudes, and behavior.

Parenting patterns within a family significantly determine the investment in a child's growth and development. Parenting practices within the family must be ensured to be optimal. Children's needs encompass three aspects: nurturing (biomedical), asih (affection or emotional), and asah (stimulation), especially in the early stages of a child's life (11,12).

Family planning, particularly regarding reproductive health, is a factor that determines the mother's health and the development of her child. The ideal age for pregnancy is between 20 and 35. Addressing maternal health risks during pregnancy requires family planning and regular checkups through the healthcare system (13).

The process of nurturing and developing children is inseparable from the local cultural values embraced by the family. Local wisdom in child-rearing patterns is a cultural value based on divinity, compassion, humanity, and the environment, which is integrated in such a way that it creates a harmonious connection between human life and

its surroundings, a practice that has persisted from generation to generation(14).

Recognizing the importance of a child's future potential and their growth and development, all stakeholders, including the family, community, government, and the private sector, must provide this support. Therefore, a family parenting strategy is needed to optimize child growth and development. Family strategies for childcare to control stunting can be implemented by optimally utilizing family resources while still considering the challenges and obstacles faced by the family.

Previous research has revealed that stunting in toddlers is caused by prolonged nutritional deficiencies. Other factors, including socioeconomic conditions, maternal nutrition during pregnancy, recurrent illnesses in infants, environmental sanitation, and the use of unsafe water, also contribute to stunting (15–17). Stunting is also influenced by a family's knowledge, attitudes, and motivation regarding child development. Other researchers also mention the influence of family parenting knowledge and practices (16,18). The incidence of stunting in children under five is also caused by the mother's age, education, marital status, wealth index, age of the toddler, order of children, birth distance too close, number of children born to one mother (17,19,20). Mothers who experience stunting during childhood tend to also give birth to stunted children (21). Local cultural values that exist in society greatly influence the parenting patterns of parents towards their children (22).

The novelty of this research lies in its study of stunting prevention, which is based on more strategic family planning, not only in terms of the number of children and birth spacing, but also encompassing maternal health, mental preparedness, and access to quality health information and services. Observations of family care using a more contextual cultural approach, namely scientific knowledge about nutrition and health integrated with parenting practices that have developed within local traditions.

This study aims to analyze the influence of knowledge, attitudes, motivation, family planning, and culture on toddler parenting behavior. This study seeks to answer the question: do knowledge, attitudes, motivation, family planning, and culture influence family parenting behavior in preventing toddler stunting in South Sulawesi Province.

METHODS

This study uses a quantitative approach with a survey method. The target of this study is all families with toddlers in South Sulawesi. The research area includes Jeneponto Regency and Makassar City, with the following considerations: (a) Areas with stunting rates that are still relatively high compared to national standards, making them an important focus for research; (b) Makassar City as the provincial capital recorded an increase in stunting prevalence from 18.4% (2022) to 25.7% in 2023, exceeding the national average. This condition indicates that although Makassar is a large city with relatively good health facilities, the problem of stunting remains a serious challenge; (c) Jeneponto Regency can provide an overview of conditions in areas with more limited access; (d) Both regions are active in stunting reduction acceleration programs run by the provincial and central governments, so the research can contribute directly to program and policy improvements.

The population of this study was 744 families with toddlers at the designated research location. The sample was selected using the Slovin formula, with a total sample size of 260 families. This study underwent an ethical review process and received approval from the Research Ethics Committee of the Muslim University of Indonesia, with permit number 667/A.1/KEP-UMI/VII/2024 and registration number UMI022407449.

Data processing and analysis were carried out in three stages: univariate analysis, bivariate test using Chi-square (with Yates continuity correction), and multivariate analysis with binary logistic regression to predict the influence of independent variables on family parenting behavior in preventing stunting in toddlers.

RESULT

The results of descriptive statistical analysis of respondent characteristics are presented in Table 1. The largest maternal age group was 25-29 years (36.2%), and the toddler's parents' education was high school (45.4% of mothers and 54.6% of fathers).

71.9% of mothers took care of the household, and fathers worked in the service sector (35.8%). Nearly 70% of families had incomes below the Provincial Minimum Wage (UMP) of IDR 3,385,000 per month.

Table 1. Distribution of Respondent Characteristics in South Sulawesi Province, Indonesia, 2024 (n=260)

Characteristics	F	%
Mother's Age (Years)		
15-19	17	6.5
20-24	83	31.9
25-29	94	36.2
30-34	41	15.8
35-39	22	8.5
40-44	3	1.2
Mother's Education		
Did not finish elementary school	5	1.9
Graduated from elementary school	42	16.2
Graduated from junior high school	66	25.4
Graduated from high school	118	45.4
College	29	11.2
Father's Education		
Did not finish elementary school	4	1.5
Graduated from elementary school	32	12.3
Graduated from junior high school	53	20.4
Graduated from high school	142	54.6
College	29	11.2
Mother's Occupation		
ASN	16	6.2
Farmers/fishermen	25	9.6
Private sector employee	21	8.1
Housewife	187	71.9
Service	11	4.2
Type of your job		
ASN	17	6.5
Farmers/fishermen	73	28.1
Private sector employee	69	26.5
Self-employed	8	3.1
Service	93	35.8
Average Family Income		
≤UMP	179	68.8
> UMP	81	31.2
≤UMP	179	68.8

Source: Primary Data

Table 2 shows that most mothers had one toddler (56.5%). The gender of the first and second toddlers was predominantly female, while the last toddler was male (51.2%) and aged 24-35 months. The birth spacing between toddlers and their older siblings was mostly 26-35 months (34.3%). Approximately 26.5% of mothers had an ideal birth spacing (3 years or more), while 37.3% had a birth spacing of less than 25 months, including nearly 5% of mothers who became pregnant again when their child was 3-6 months old. A total of 29.2% of toddlers were categorized as stunted and 70.8% were categorized as normal according to WHO standards.

Table 2. Characteristics of Toddlers in South Sulawesi Province, Indonesia, 2024 (n=260)

Characteristics	f	%
Number of toddlers in the family		
1 person	147	56.5
2 persons	102	39.3
3 people	11	4.2
Gender (Toddler I)		
Man	107	41.2
Woman	153	58.8
Gender (Toddler II)		
Man	48	42.5
Woman	65	57.5
Gender (Toddler III)		
Man	8	72.7
Woman	3	27.3
Gender (Last Infant)		
Man	133	51.2
Woman	127	48.8
Last Toddler Age (Months)		
0-5	4	1.5
6-11	20	7.7
12-23	96	36.9
24-35	97	37.3
36-47	26	10.0
48-59	17	6.5
Distance between last and previous births (Months)		
0 (first child)	5	1.9
12-15	12	4.6
16-25	85	32.7
26-35	89	34.3
≥36	69	26.5
Stunted Category (Short)		
Stunting	76	29.2
Normal	184	70.8

Source: Primary Data

Table 3 shows parenting behaviors related to stunting prevention. Prenatal checkups were most frequently categorized as poor (37.7%), maternal and infant nutritional intake was categorized as adequate (45%), complementary feeding (MP-ASI) and immunization were predominantly categorized as adequate (42%), and disease prevention and treatment were categorized as adequate (40%). Child stimulation indicators were almost evenly distributed across the good (30.8%), adequate (35.8%), and poor (33.5%) categories.

Table 3. Parenting Behavior Indicators for Stunting Prevention in South Sulawesi Province, Indonesia, 2024 (n=260)

Characteristics	f	%
Pregnancy Checkup		
Good	73	28.1
Enough	89	34.2
Bad	98	37.7
Nutritional Intake for Pregnant Women and Babies		
Good	76	29.2
Enough	117	45.0
Bad	67	25.8
Providing complementary foods and immunizations		
Good	77	29.6
Enough	109	41.9
Bad	74	28.5
Disease Prevention & Treatment		
Good	86	33.1
Enough	105	40.4
Bad	69	26.5
Child Stimulation		
Good	80	30.8
Enough	93	35.8
Bad	87	33.5

Source: Primary Data

Table 4 shows a description of knowledge, attitudes, motivation, family planning, and culture. Knowledge of parenting, environmental sanitation, and nutrition was mostly in the sufficient category (around 60%), while environmental health knowledge was mostly in the insufficient category (52.7%). Attitudes toward parenting and environmental sanitation tended to be positive, at 57% and 55%, respectively. Motivation for parenting and family planning showed a proportion with high motivation (54%) and sufficient planning (55.8%). Cultural aspects and parenting behavior were dominated by a less supportive culture (57.3%) and poor parenting behavior (55.8%).

Table 5 shows the results of the Yates continuity correction test, which indicates a positive relationship between knowledge (parenting patterns, environmental sanitation, nutrition), parenting attitudes, parenting motivation, family planning, and culture with parenting behavior in toddlers ($p<0.05$). However, the variables of environmental health knowledge and environmental sanitation attitudes showed no relationship with parenting behavior ($p>0.05$).

Table 6 lists strategies for improving family parenting behaviors in preventing and managing stunting, with interventions focused on five variables: culture, environmental sanitation knowledge, family planning, parenting attitudes, and environmental sanitation attitudes. The environmental sanitation variable, which showed a negative standardized beta coefficient, was excluded as the focus of interventions for preventing and managing stunting in toddlers in South Sulawesi Province.

Table 4. Description of Research Variables in South Sulawesi Province, Indonesia, 2024 (n=260)

Characteristics	f	%
Parenting Knowledge		
Enough	156	60.0
Not enough	104	40.0
Nutrition Knowledge		
Enough	153	58.8
Not enough	107	41.2
Environmental Sanitation Knowledge		
Enough	159	61.2
Not enough	101	38.8
Environmental Health Knowledge		
Enough	123	47.3
Not enough	137	52.7
Parenting Attitudes		
Positive	148	56.9
Negative	112	43.1
Environmental Sanitation Attitude		
Positive	143	55.0
Negative	117	45.0
Parenting Motivation		
Tall	141	54.2
Low	119	45.8
Family Planning		
Enough	145	55.8
Not enough	115	44.2

Culture		
Support	111	42.7
Less Supportive	149	57.3
Parenting Behavior		
Not enough	145	55.8
Good	115	44.2

Source: Primary Data

Table 5. The Relationship between Knowledge, Attitude, Motivation, Parenting Culture, and Family Planning with Parenting Behavior in South Sulawesi Province, Indonesia, 2024 (n=260)

Variables	Parenting Behavior				Amount	p value
	Not good		Good			
	F	%	f	%		
Parenting Knowledge						0,000
Not enough	81	77.9	23	22.1	104	
Enough	64	41.0	92	59.0	156	
Nutrition Knowledge						0,000
Not enough	86	80.4	21	19.6	107	
Enough	59	38.6	94	61.4	153	
Environmental Sanitation Knowledge						0,000
Not enough	83	82.2	18	17.8	101	
Enough	62	39.0	97	61.0	159	
Environmental Health Knowledge						0.306
Not enough	81	59.1	56	40.9	137	
Enough	64	52.0	59	48.0	123	
Parenting Attitudes						0,000
Negative	92	82.1	20	17.9	112	
Positive	53	35.8	95	64.2	148	
Environmental Sanitation Attitude						0.188
Negative	71	60.7	46	39.3	117	
Positive	74	51.7	69	48.3	143	
Parenting Motivation						0.011
Low	77	64.7	42	35.3	119	
Tall	68	48.2	73	51.8	141	
Family Planning						0,000
Not enough	79	68.7	36	31.3	115	
Good	66	45.5	79	54.5	145	
Culture						0,000
Less Supportive	118	79.2	31	20.8	149	
Quite Supportive	27	24.3	84	75.7	111	

Source: Primary Data

Table 6. Stunting Prevention and Management Strategy which will be the focus of intervention in South Sulawesi Province, Indonesia

Stunting Prevention and Management Strategies	Beta Standard Coefficient	p value
Culture	2,492	0,000
Environmental sanitation knowledge	1,936	0,000
Family planning	1,429	0.030
Parenting attitudes	1,003	0.008
Environmental sanitation attitudes	-0.734	0.265

Source: Primary Data

DISCUSSION

The study results showed that approximately 60% of mothers had sufficient knowledge and positive attitudes regarding parenting patterns, as well as adequate nutritional knowledge. Statistical analysis showed that knowledge and attitudes regarding parenting patterns and nutritional knowledge

were significantly related to parenting behavior, meaning that mothers with low knowledge and attitudes regarding parenting patterns and nutritional knowledge tended to have poor parenting behavior.

A study at the Paal Merah Community Health Center, Jambi City, showed a similar correlation between knowledge, attitudes, and parenting patterns on children's nutritional status (23). A review of the scientific literature (2017–2021) emphasized the importance of appropriate parenting and feeding practices to address nutritional issues in toddlers. Lack of understanding or application of nutritional information contributes to the risk of stunting, particularly in children under two years of age (24).

A mother's nutritional knowledge plays a crucial role in parenting behavior, particularly in meeting the nutritional needs of toddlers. Mothers with adequate nutritional understanding are more likely to implement a balanced diet, demonstrate appropriate parenting behaviors, and maintain optimal nutritional status and child development.

Various studies in Indonesia, including in Bantul (25), Cintapuri Darussalam Community Health Center Working Area (26),Margomulyo Village, Sleman (27), in Sumowono District, Semarang (28), and the results of systematic reviews in agricultural areas (29), shows a significant relationship between maternal nutritional knowledge and the incidence of stunting in toddlers aged 6–24 months through the influence of eating patterns and parenting patterns, which can be improved through education by health workers (25,26), in line with findings in Tanzania showing that nutrition education increases knowledge, improves the quality of family diets, and encourages the use of local foods such as home garden produce to improve family health (30).

The lack of maternal knowledge about nutrition and parenting patterns is due to, among other factors, low education levels, limited access to accurate and sustainable information, particularly in remote areas with minimal outreach, and limited use of digital media. However, suboptimal access to health services, such as a shortage of health workers and limited routine outreach, also hinders the effective delivery of nutrition information (25,26). Another study showed that mothers who regularly access health services and attend integrated health posts (Posyandu) have better nutritional knowledge (31).

Although knowledge about environmental sanitation (61%) and positive attitudes toward it (55%) were considered adequate, and knowledge about environmental health (47%) showed a positive trend, all three were still relatively inadequate. Statistical tests showed that only knowledge about environmental sanitation was significantly related to parenting behavior ($p<0.05$), while attitudes toward sanitation and knowledge about environmental health did not show a significant relationship ($p>0.05$). Sanitation knowledge tended to be better because it covered more concrete areas, such as clean water and waste management, which have a direct impact on children's health. Conversely, positive attitudes toward sanitation were not always followed by concrete behavior, possibly due to limited access, economic constraints, or environmental support. These findings emphasize the importance of educational and structural interventions to encourage changes in parenting behavior that support environmental health.

Different research in the Sijunjung Community Health Center Working Area(32)and in Babakan Village, Ciseeng District, no significant relationship was found between environmental sanitation and stunting, where the environmental sanitation conditions in the village were already in the good category (33). Research findings in Langkat Regency indicate a significant relationship between environmental sanitation and stunting through an increased risk of infection. Hygiene education, such as handwashing, effectively promotes healthy behaviors. Improving health literacy is a key strategy for disease prevention and improving children's nutritional status (34). Other research findings reveal that various environmental risk factors, to varying degrees, interact with nutritional factors in influencing stunting in children (15). Poor environmental sanitation can increase the risk of stunting, so improving sanitation can help reduce the prevalence of stunting.

As many as 54% of mothers had high parenting motivation, and this motivation was statistically significantly associated with parenting behavior ($p<0.05$). The findings indicate that maternal motivation plays a crucial role in enhancing responsive, proactive, and consistent parenting practices. Previous

research has shown that maternal motivation significantly influences stunting prevention behavior in toddlers, with a direct effect of 23.13% (35). Therefore, interventions that focus on increasing motivation can be an effective strategy in preventing stunting.

Family planning is a crucial factor influencing stunting. Data analysis shows a significant relationship between family planning and parenting behavior. Mothers with suboptimal family planning tend to adopt ineffective parenting patterns, increasing the risk of stunting in toddlers.

Research at the Sangurara Community Health Center in Palu, Central Sulawesi, in 2021 showed that maternal age during pregnancy is a major factor in family planning, contributing to the risk of stunting in toddlers. Early marriage is associated with early pregnancy, which increases the risk of maternal and infant mortality, as well as premature birth and stunting (17). Therefore, planning the age at which a woman marries and becomes pregnant plays a crucial role in reducing the prevalence of stunting.

Strategic family planning is crucial for stunting prevention by integrating maternal health, mental preparedness, and access to quality health information and services. This will support fetal development, optimal care, and informed decision-making to prevent stunting.

As many as 57.3% of respondents had an unsupportive parenting culture. This culture was significantly associated with suboptimal parenting behavior. Based on the strategy analysis,prevention and handling of stunting which will be the main focus of intervention, namely culture.

Culture influences parenting behavior through beliefs or taboos regarding certain foods. For example, the belief that consuming seafood and eggs causes birth defects, and the taboo against moringa leaves, which are thought to cause labor difficulties, are common. However, these foods contain essential nutrients for pregnant women and babies.

Various studies and policies, including those in Ethiopia (2019), the Eastern Cape of South Africa (2019), and Pamekasan Regency (2021), show that effective nutrition interventions need to be community-oriented, culturally appropriate, and take into account dietary restrictions, the role of the family, and maternal knowledge in fulfilling children's nutritional needs (36–38). Relevant research in Indonesia shows that culture and food taboos, as found in pregnant women of the Dayak tribe in West Kalimantan (39), pregnant women of the Osing Tribe in Banyuwangi(40), pregnant women of the Tolaki tribe in Kendari (41), as well as breastfeeding mothers in Central Lombok (42), can impact the nutritional status of mothers and children. Foods that are avoided, such as fish, durian, pineapple, and others, contain important nutrients. Therefore, cultural understanding is necessary to design effective nutrition interventions that are sensitive to the local context.

Other traditions that are detrimental to toddlers include the use of physical punishment, which is considered effective in disciplining children, the practice of excessive swaddling, and refusal of vaccination based on beliefs, which have been proven to have a negative impact on emotional, social, and motor development, as well as increasing the risk of infection and disease (43,44). The assumption that mothers alone are responsible for childcare hinders ideal child development and increases the risk of stunting. A systematic review study found that a family approach involving fathers in providing appropriate nutrition, good parenting, and sound health practices is crucial for preventing stunting and supporting optimal child growth and development (45). The paternalistic culture in South Sulawesi places men as heads of families, yet their involvement in infant care is minimal. The value of siri' na pacce, which symbolizes self-esteem and social solidarity in Bugis-Makassar culture, can serve as a foundation for encouraging father involvement in childcare. This needs to be an integral part of public nutrition and health intervention programs in South Sulawesi.

CONCLUSIONS AND SUGGESTIONS

Conclusion

There was a significant relationship between parenting behavior and parenting knowledge, environmental sanitation knowledge, nutritional knowledge, parenting attitudes, motivation, family planning, and culture. Conversely, environmental health knowledge and environmental sanitation attitudes did not show a significant relationship. Key intervention strategies for improving family parenting behavior in stunting

prevention include culture, environmental sanitation knowledge, family planning, and parenting attitudes.

Suggestion

An emphasis on a family-based parenting approach, which strengthens the family's collective role in providing care for children's health, including ensuring optimal nutrition and stimulating development. The importance of optimizing the potential of cultural values implemented within the family through increased knowledge of environmental sanitation, family planning, and positive parenting attitudes.

ACKNOWLEDGEMENT

Authors would like to express our gratitude to the Directorate of Research, Technology, and Community Service, Directorate General of Higher Education, Research, and Technology, Ministry of Education, Culture, Research, and Technology, for their financial support in providing this research.

AUTHOR CONTRIBUTIONS

This article was written through the collaboration of six contributors. The first author (RA) was responsible for the study design and writing of the final manuscript. The second author (A) contributed to the data collection and interpretation of the results. The third author (IR) contributed to the literature review, data collection, and discussion of the findings. The fourth author (M) provided academic supervision, ensuring the methodology and validity of the study. The fifth and sixth authors (ABA and BS) contributed to data collection, editing, and adjusting the manuscript in accordance with journal guidelines.

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