

Original Research

# Family Empowerment Model Based on Madurese Social and Cultural Structures to Prevent Stunting

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## ABSTRACT

**Background:** Bangkalan district has the highest incidence of stunting in East Java. Various efforts have been made to accelerate the reduction of stunting, but maximum results have not been achieved. This study aimed to determine the impact of family empowerment based on Madura sociocultural structures on the ability to prevent stunting. **Methods:** This study used a cross-sectional design with a population of families with school-aged children in PAUD, Regency area of Bangkalan, with a sample of 280 individuals drawn by stratified random sampling. Data analysis was performed using SEM. **Results:** The results showed that the Madurese family culture and social structure were built on religious, kinship, and economic interest indicators. Family empowerment, with aspects of family structural strength, family functioning, and family values, influences the family's ability to prevent growth retardation. Family empowerment in stunting prevention is strongly influenced by the culture and social structure of the Madura family. Indicators of stunting prevention skills include the ability to meet family nutrition, fertility management, growth and development monitoring, personal and environmental hygiene patterns, and family capacity to modify the environment. The more power a family has, the more impact it has on their ability to prevent stunting. **Conclusion:** Stunting based on Madhura culture can be achieved through the integrative implementation of stunting. Local government organizations involve informal community figures

**Keywords:** Family strengthening; Madurese culture; stunting prevention; social structure

## 1. INTRODUCTION

In terms of stunting prevalence in toddlers, Indonesia is ranked sixth in the world. One of the districts with a rather high stunting frequency, although it tends to decrease, is Bangkalan Regency. The frequency of stunting in Bangkalan Regency continues to increase, and this trend cannot be separated from the social structure and cultural practices of the Bangkalan people, especially the Madura tribe who are complex around dietary behavior. Effective and sustainable interventions need to be carried out to reduce the incidence of stunting, especially in Bangkalan Regency. The basis of the family empowerment model is the idea that the family can contribute to improving the family dynamics that are the guarantee of the welfare of its members. It is necessary to study the influence of elements of Madura cultural

and social structure on family empowerment for stunting prevention and the effect of family empowerment based on Madura culture and social structure. Parental and family socioeconomic characteristics determine parenting in the family, including feeding.<sup>(1,2)</sup> The cultural approach in providing nutrition interventions is easier for the community to adapt.<sup>(3)</sup> Health care in the family as well as a supportive environment for the child's growth.<sup>(4,5)</sup> Culture in Society determines how to feed children.<sup>(6)</sup> Social influence is mostly obtained from family, friends, and health workers.<sup>(7)</sup>

The family empowerment model developed in this study aims to increase family independence in the ability to prevent stunting and detect the occurrence of stunting in the family. This approach involves education on feeding families, especially pregnant and lactating women, increasing community access to health services and increasing the participation of community leaders to support families in meeting children's nutritional needs. Parents' knowledge and ability in feeding children affect children's eating habits, family socioeconomic status also determines child feeding.<sup>(1,8)</sup> Pregnant women who have good access to pregnancy check-ups both to doctors and health service facilities are at minimal risk of having children with malnourished status.<sup>(9)</sup>

This research offers a new approach in stunting prevention by integrating social and cultural structure factors of the Madura community in the family empowerment model. This is expected to be a reference for other health programs in Indonesia that have similar challenges.

This research is crucial as it addresses the persistent issue of stunting in Bangkalan Regency by leveraging the unique social and cultural structures of the Madura community. By integrating these cultural elements into a family empowerment model, this study aims to develop a context-specific approach that enhances family autonomy in stunting prevention and early detection. The primary objective is to assess how Madura's social and cultural structures influence family empowerment and to evaluate the effectiveness of a culturally adapted intervention model in improving child nutrition and health outcomes. The novelty of this research lies in its emphasis on a culturally embedded strategy, which not only increases community engagement but also ensures the sustainability of stunting prevention efforts. The findings of this study

are expected to serve as a model for other regions facing similar sociocultural challenges, contributing to more effective public health interventions in Indonesia and beyond.

## 2. METHODS

### 2.1 Study Design and Population

Cross-sectional data were used in the study's analytical observational methodology. The study's target group was families in Bangkalan Regency with toddlers aged 12–59 months. Families with children who have enrolled in Bangkalan Regency's 928 early childhood education programs and are between 12 and 59 months make up the affordable population. A minimum sample size of 250 samples is required since the size of the study sample is determined by the number of indicator variables, which is 25 (twenty-five). 280 participants were selected using Cluster Random as the sample size for this investigation. sampling from 8 early childhood education centers that are part of the stunting locus and represent urban, highland, coastal, and rural areas.

### 2.2 Data Collection

Questionnaires are used to collect data. Questionnaire A is about the characteristics of the respondents, and questioner B asks about the socio-cultural structure of the community which includes religious obedience, social kinship, law and politics in the community, economy, and education level. Questionnaire C asks about the dimensions of family structure including personal reference, decision-making, family social roles, and the level of family support. Questionnaire D asked about the dimensions of family functions including affective function, social function, economic function, and reproductive function. Questionnaire E asks about the dimensions of norms and values in the family, including caring, solidarity, filial piety, and family trust. Questionnaire F asked about the ability of families to prevent stunting, including nutritional fulfillment, pregnancy checks, monitoring growth and development, personal and environmental hygiene patterns, and environmental modification.

### 2.3 Data analysis

The data was analyzed using 2 stages, the first stage of analysis was carried out to describe each

variable studied. Next, inferential analysis was carried out using Structural equation modeling (SEM).

#### 2.4 Ethical Clearance:

The KEPK Poltekkes Kemenkes Surabaya issued an ethical eligibility certificate for this study, numbered EA/942/KEPK-Poltekkes\_Sby/V/2022, on April 25, 2022.

### 3. RESULTS

As many as 280 families in various Bangkalan Regency subdistricts who matched the requirements for cluster random sampling served as the source of the data for this study. The respondent's family has the following qualities. The characteristics of respondents' families can be seen as follows in Table 1.

**Table 1.** Frequency distribution of Bangkalan family characteristics in 2022 (n=280)

Characteristics	Frequency	Percentage (%)
Work		
Government employee	44	7.40
Private	69	24.30
Self employed	110	52.00
Other	57	16.20
Total	280	100.00
Family Income (Indonesian Rupiah)		
< 1.5 million	88	31.40
1.5 - 2.5 million	90	32.10
2.5 – 3.5 million	53	13.50
> 3.5 million	48	10.10
Total	280	100.00
Type of family		
Nuclear	165	58.90
Extended	115	41.10
Total	280	100.00

Based on Table 1 above, it is known that the characteristics of respondents on average are self-employed (52%) with a family income range of 1.5-2.5 million. And the average family type is a nuclear family (58.9%).

Based on Table 2, it can be seen that the average Bangkalan community is an obedient community in religious life at 54.28%. And social kinship is on average in the close category (40%). Legally and politically, the average government policy in improving public health is considered supportive (52.5%). The economic level of

the community in meeting the needs of daily life is considered sufficient on average (53.57%), while from education most of it is secondary education (70.71%).

**Table 2.** Distribution of cultural frequency and social structure of Bangkalan community in 2022 (n=280).

Cultural Characteristics and Social Structure of Society	Frequency	Percentage (%)
Religious observance		
Very Obedient	90	32.10%
Obey	152	54.28
Lack of obedient	38	13.57
Social kinship		
Very tight	80	28.57%
Tight	112	40%
Less tight	88	31.42%
Law and politics of society		
Very supportive	58	20.71%
Support	147	52.5%
Less supportive	75	26.78%
Economics		
Very enough	45	16.07%
Enough	150	53.57%
Less	85	30.35%
Education level		
High	61	21.78%
Intermediate	198	70.71%
Basic	21	7.5%
Total	280	100

Based on Table 3, it can be known about the overview of the dimensions of the family structure to build family empowerment. In terms of personal references, the Bangkalan family has the most very strong (40%). The most description of decision-making ability still depends on personal references (43.21%). The most social role of the family is in the category of very important (39.28%) although the number is not significant. Likewise with family support, the most family existence is very supportive (39.28%) although the number is also not too significant.

Based on Table 4, it can be seen that the most family affective functions are in the good category (42.5%). Meanwhile, the socialization function is in the less category (35.4%) and the most economical is in the sufficient category (45%). The most reproductive function was in the very good category (42.5%).

**Table 3.** Distribution of dimension of family structure of Bangkalan community in 2022 (n=280)

Dimensions of socio-cultural structure	Frequency	Percentage (%)
Personal reference		
Very powerful	112	40.00%
Usual	100	35.71
Less probe	68	24.28
Decision		
Self-sufficient	70	25.00%
Together	89	31.78%
Highly dependent	121	43.21%
The social role of the family		
Very important	110	39.28%
Role	84	30.00%
Less role	86	30.71%
Family support level		
Very supportive	110	39.28%
Support	93	33.21%
Less supportive	77	27.50%
Total	280	100.00

**Table 4.** Frequency distribution of the Bangkalan family function dimension in 2022 (n=280)

Family Function	Frequency	Percentage
Affective Function		
Excellent	54	19.28
Good	119	42.50
Enough	93	33.21
Less	14	5.00
Socialization Function		
Excellent	24	8.57
Good	90	32.10
Enough	67	23.90
Less	99	35.40
Economic functions		
Excellent	24	8.57
Good	96	34.28
Enough	126	45.00
Less	29	10.35
Reproductive Function		
Excellent	119	42.50
Good	54	19.28
Enough	80	28.57
Less	27	9.64

Based on Table 5, it can be seen that the most family concern is in the category of sufficient (35.71%) and good (35.35%). The closeness in the most families has a very close level of closeness (40%), as well as filial

piety is mostly very good (40%). Meanwhile, the most confidence in health is in the adequate category (36.78%).

**Table 5.** Distribution of norms and family values of Bangkalan community families in 2022 (n=280)

Dimensions of family norms and values	Frequency	Percentage
Concern		
Excellent	47	16.78
Good	99	35.35
Enough	100	35.71
Less	34	12.14
Closeness		
Excellent	112	40.00
Good	78	27.85
Enough	52	18.57
Less	38	13.57
Filial Piety		
Excellent	112	40.00
Good	98	35.00
Enough	49	17.50
Less	21	7.50
Family trust		
Excellent	14	5.00
Good	89	31.78
Enough	103	36.78
Less	74	26.42

Based on Table 6, the ability of families to prevent stunting in toddlers can be described. Family performance in fulfilling the most nutrition was in the adequate category (40.41%). Pregnancy check-ups and monitoring of the growth and development of toddlers are the most rarely carried out (62.14% and 35%). The most personal and environmental hygiene patterns were in the adequate category (36.42%) while the ability to modify the environment was the most in the underprivileged category (40%).

The evaluation of structural models can be seen in the following Table 7. Each exogenous variable has a large impact on endogenous variables. Table 7 illustrates the significant impact of cultural and social structures on family dynamics, which in turn influence family empowerment and stunting prevention. Cultural and social structures (X1) significantly affect family structure (Y1), function (Y2), and norms and values (Y3), with the strongest effect on family function (0.276). Family function (Y2) also has the highest impact on family empowerment (Z) (0.472), followed by family

structure (0.404) and norms and values (0.276). Ultimately, family empowerment (Z) enhances stunting prevention capabilities (Y4) (0.052). These findings underscore the importance of culturally integrated

family-based interventions in strengthening empowerment and reducing stunting. In addition, Figure 1 describes the model created using T-statistical values.

**Table 6.** Frequency distribution of family ability in stunting prevention (n=280)

Family ability in stunting prevention	Frequency	Percentage (%)
Nutritional fulfilment		
Good	68	24.29
Enough	114	40.71
Less	98	35.00
Pregnancy check – up		
Routine	100	35.71
Infrequently	174	62.14
Never	6	2.15
Growth and development monitoring		
Routine	87	31.07
Infrequently	98	35.00
Never	95	33.92
Personal and environmental hygiene patterns		
Good	89	31.78
Enough	102	36.42
Less	89	31.78
Making environmental modifications		
Highly capable	75	26.78
Can	93	33.21
Underprivileged	112	40.00
Total	280	100.00

**Table 7.** Coefficient value

No.	Causality relationship	Coefficient	T-statistical	Influence
1	(X1) Culture & social structure → (Y1) Family structure	0.075	27.780	Significant
2	(X1) Culture & social structure → (Y2) Family function	0,276	15.125	Significant
3	(X1) Culture & social structure → (Y3) Family norms & values	0.095	10.376	Significant
4	(Y1) Family structure → (Z) Family empowerment	0.404	23.141	Significant
5	(Y2) Family function → (Z) Family empowerment	0.472	18.791	Significant
6	(Y3) Family function → (Z) Family empowerment	0.276	15.125	Significant
7	(Z) Family empowerment → (Y4) Stunting prevention capabilities	0.052	2.841	Significant

According to Figure 1, all T-statistical values on the route diagram (which depicts the relationship between exogenous and endogenous components) have values higher than the value of t-table = 1.96. The model in

Figure 1 is architecturally possible, to sum up. The R-square value in the path diagram contains the value of the exogenous elements' influence on endogenous

factors. The path chart's (R-Square) influence data percentage looks like as in Table 8.

Table 8. R-square value ( $R^2$ )

Variable	$R^2$	Value
Family Empowerment (Y1)	$R^2_{(\eta1)}$	0.212
Stunting Prevention Capabilities (Y2)	$R^2_{(\eta2)}$	0.346

Family empowerment is related to stunting prevention ability explained by culture and social structure by 21.2%, while the remaining 78.8% is influenced by other variables that are not included in

the research model developed in this analysis model, according to the value of  $R^2_{(\eta1)}$  for Family empowerment (Y1) of 0.212. The family ability factor in stunting prevention has an  $R^2_{(\eta2)}$  value of 0.346, which indicates that family culture and social structure account for 34.6% of the variation in stunting prevention by the family, with the remaining 65.40% being influenced by factors outside the scope of this research model. The constructed model exhibits a moderate degree of strength in the latent constructs of family empowerment and the capacity to avoid stunting by families, according to the value of  $R^2$ .

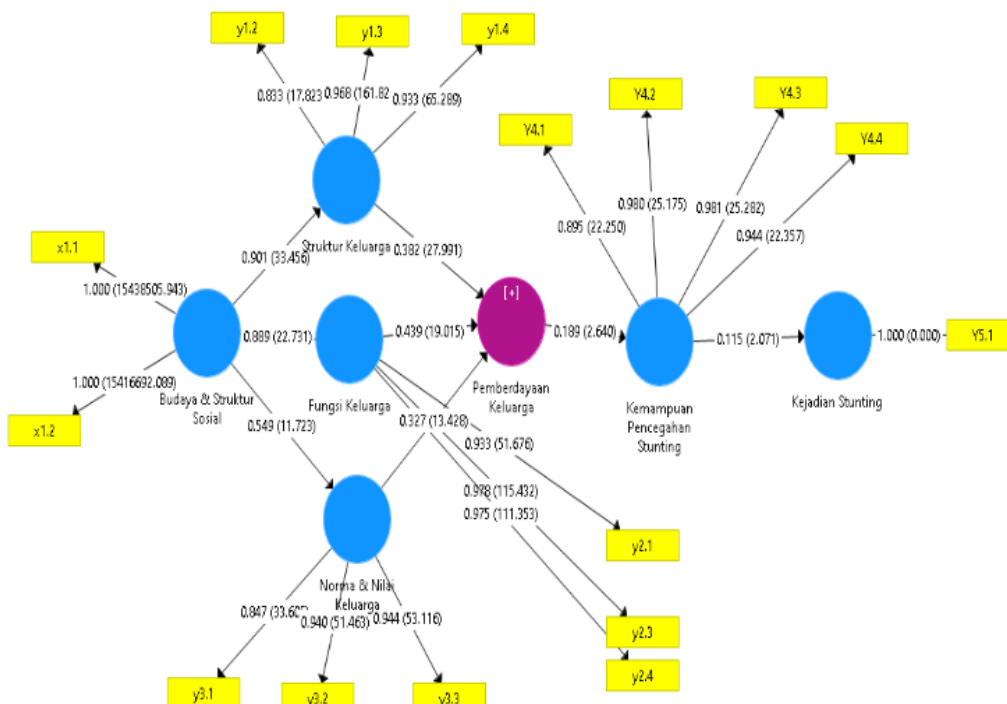


Figure 1. T-static value path diagram on structural models

### 4. DISCUSSION

The ability of the family to prevent stunting is influenced by the dimension of family empowerment, with indicators of family power structure, family functions, family norms, and family values. Families' capacity to prevent stunting is indicated by their ability to provide adequate nutrition, check on pregnant women, monitor toddlers' growth and development, practice good personal and environmental cleanliness, and make changes to the environment.

Overview of the family's capacity to prevent stunting and meet the requirements for the majority of

the recommended amounts of nutrition. Most toddlers in this category are rarely monitored for growth and development during pregnancy checks. The potential to change the environment the most is found in the disadvantaged category, whereas the majority of personal and environmental cleanliness habits are found in the sufficient category. Families are better able to avoid stunting when the role of family empowerment is more favorable.

Stunted children are the primary cause of nutritional intake, which can be explained in terms of families' capacity to provide nourishment to prevent stunting. Stunting can result from inadequate nutrients

being provided from pregnancy until the child is delivered.<sup>(10)</sup> The National Movement for the Acceleration of Nutrition Improvement was established by Presidential Decree Number 42 of 2013, dated May 23, 2013, which reaffirmed the commitment of the government to these efforts. Increasing community (family) participation for the adoption of social norms that encourage nutrition-conscious behavior is one way to accelerate nutrition improvement. Family empowerment is crucial for this reason.

In order to prevent stunting, a family's capacity to meet its nutritional demands depends on the structure of family power, one aspect of family empowerment. The fulfillment of family nutrition is influenced by a person's personal references, decision-makers, family support, and social roles. The type of family, which is typically an extended family, is strongly tied to personal preference.

The importance of personal reference and decision-making is how religious attendance affects social power systems. People who act as both followers of his teachings and behavioral role models. Religion has an effect on devotion to religious leaders (kyai) in Madurese families. Kiai's function encompasses parts of everyday social life in addition to spiritual problems. The kiai's role as a spiritual leader contributes to the fabric of society by uniting people.<sup>(11)</sup> By engaging in frequent communication with the community, a kyai develops a strategic position as an informal community leader. Kyai has long played a role in rural communities.<sup>(12)</sup> Thus, family empowerment, the elements of family power structure, particularly the existence of personal references and decision-making, can be impacted by the culture and social structure of Madurese society, which is heavily influenced by religious practice.

Elders in the family play a crucial role as decision-makers and consultants about dietary needs. What is said or done by someone who is regarded as important is often mimicked.<sup>(13)</sup> Reinforcing variables, like Lawrence Green's theory of health behavior, include the attitudes and conduct of health professionals, community leaders, religious leaders, parents, or other officers who serve as examples of typical members of the community.<sup>(14)</sup>

Support from the family has an impact on nutrition satisfaction. The greater the impact on nutritional satisfaction patterns to prevent stunting, the more effective the support is as a source of family

empowerment. The family contributes to the members' stability, upbringing, loyalty, and support.<sup>(15)</sup> Family assistance is necessary for nutritional fulfillment, whether it be financial, energetic, informational, or emotional.<sup>(13)</sup> According to Lawrence Green, family support affects how well families may act in terms of consuming nutrients.<sup>(14)</sup> The social function of the family cannot be isolated from family support. The provision of nutrition is included in the family where socialization values, norms, and teaching about good and bad things as well as wrong and right is done.<sup>(15)</sup>

Empowering families to perform at their best can increase their capacity to prevent stunting. The findings of expert consultation show that adequate nutrition is important for more than just dietary intake in the prevention of stunting. To ensure that youngsters develop as they should, the economy and affection quality must both be strong. Family activities play a significant role in how well-nourished the family's children are.<sup>(16)</sup> The dietary requirements of children that are raised in devoted homes will be addressed. There is an emotional connection between parents and children when they provide food intake to their kids, specifically a sense of parental concern.<sup>(17)</sup>

The economic function of the family is another aspect of family empowerment that has an impact on the family's capacity to avoid stunting. The family's nutritional needs will be better met the better the family's economic function is. Economic functions include people's capacity to earn more money to meet their family's demands.<sup>(13)</sup> Economic considerations play a significant role in the process of ensuring dietary intake.<sup>(18)</sup> The capacity of a family to achieve its nutritional demands can be impacted by socioeconomic position. Additionally, socioeconomic status might affect meal time, meal additive menu selections, and healthy lifestyle decisions in addition to healthy lifestyle decisions.<sup>(19)</sup>

The ability of the family to provide adequate nourishment to prevent stunting is greatly influenced by family function. The family must uphold healthy norms and beliefs around family nutrition in order for them to actively engage in the fulfillment of nutrition. A strong family is one that is committed to looking out for one another and respecting one another. The family's capacity to provide for nutritional requirements to prevent stunting is better the stronger the good standards and values the family upholds.

Even before becoming pregnant, a woman's nutritional health will affect how big her fetus grows. Thus, one of the ways to avoid stunting is through pregnancy examination. The newborn child's growth and development must be watched over. Mothers must be diligent in taking their children to health care facilities like posyandu, families must be able to read books that track children's growth and development (like KIA books); and families must be able to make decisions to maintain children's growth and development. It is well established that family empowerment, which includes the family power structure, family roles, and family norms and values, has a significant impact on families' capacity to prevent mother-to-child pregnancies and supervise children's growth and development.

At every stage of life, family has a critical role in avoiding stunting. Prevention of stunting is crucial from the time a kid is in the womb until they are two years old. Children's growth and development must be watched over. In this stage, the family plays a crucial role. The crucial stage for children's growth and development so they can become healthy, intellectual, and ideal children.<sup>(18)</sup> Families with a healthy family power structure will affect how pregnant women are monitored for their health and how well children are grown and developed. This is so that both a decision-maker and a personal reference can be used. Similarly, family trust in maternal and child health shows up in support of pregnant women's health maintenance and monitoring of child growth and development. Family decisions often involve personal recommendations. Parents are thought to possess greater knowledge and expertise, making it appropriate for use as a personal guide for observing trends in child growth and development as well as maternal pregnancy checkups.<sup>(20,21)</sup>

According to the findings of the expert consultation, Madurese society is distinctive in that the pattern of maternal and child health examinations is heavily influenced by local kyai and ulama fatwas. Because using medical services is viewed as a sin by mothers, they are reluctant to have their pregnancies checked by medical professionals. Madurese households, according to A Latief Wiyata, adhere to the culture of cultural obedience, and kyai, who serves as an example for the family, is known as "bhuppa 'bhabbhu' ghuru rato". Stunting prevention does not only depend on the family; it is also important to take

into account the involvement of healthcare professionals like public health care in determining whether the "fatwa kyai" has affected the family.<sup>(22)</sup>

The achievement of good human and family resources can be aided by the implementation of ideal family practices. When a family is functioning smoothly, the growth and development of the children is also being watched. Additionally, the mother's pregnancy test will be successful if the family is functioning properly. Because the family's capacity to prevent stunting is influenced by how the family functions as a component of family empowerment. Pregnancy tests, growth and development tracking, and affective functioning all operate well when these things are going well. The unusual category demonstrates the capacity of families to check pregnancies and track the growth and development of their children. With the idea of the family's affective functioning, this is incompatible. The ability to show care, comfort, and attention to family members is one example of an affective function.<sup>(15)</sup> Support is given for the family members' growth and development in the family's affective function.<sup>(23)</sup>

A woman's ability to reproduce has an impact on how her pregnancy is examined and how her children's growth and development are tracked. Mothers' infrequent pregnancy checks are a sign that family reproductive functions have not been implemented to their full potential. The family controls reproduction in a healthy way and makes preparations for the birth of qualified future generations.<sup>(13,15)</sup>

A healthy economy plays a role in preventing pregnancy and tracking the growth and development of children. The majority of families have incomes of less than 1.5 million Rupiahs, and moms hardly ever check on pregnancies or keep track of their kids' physical and mental development. Because uncertain financial circumstances are directly tied to the capacity to handle problems and undermine family cohesion, low income can make it difficult for families to operate.<sup>(24)</sup> The family serves as a resource for its members' material needs, including food, clothes, shelter, and other necessities, as well as a source of income. Low family income has an impact on how poorly families are able to prevent stunting.

Along with family power structure, family function, and family empowerment, family norms and values also have a role in how well a family can avoid stunting. Care, proximity, filial piety, and family trust

all have an impact on prenatal tests and monitoring of infant growth and development. The better the family's ability to prevent stunting through pregnancy tests and monitoring of kid growth and development, the stronger the good family values and norms.

Family values or norms are the standards that the family has adopted and upholds, particularly those that pertain to health.<sup>(13)</sup> By checking for pregnancy and tracking a child's growth and development, families can prevent stunting by adhering to the norms and principles of Madurese family care. Value is an abstract concept that serves as a general rule of thumb on how to act and behave. A person or group's commitment to values can be extremely strong, emotional, and even subjective.<sup>(25)</sup>

Family empowerment affects the family's ability to prevent stunting. The practice of personal and environmental cleanliness and the capacity of families to change the environment are two aspects of stunting prevention. Families are better able to prevent stunting if they are empowered as a unit. The family's capacity for personal and environmental hygiene is adequately described. While the family's capacity for altering the surroundings falls primarily into the "less" category. The fundamental role of the family in the family system is to create an environment where each family member's physical, psychological, social, and mental development may occur.<sup>(23)</sup> The family has a responsibility to manage life while preserving the environment.<sup>(15)</sup> In order to prevent stunting, sanitation and the availability of clean water bring kids closer to the threat of infectious diseases that might impair their ability to absorb nutrition.<sup>(18)</sup> As a result, environmental factors and personal cleanliness are important for stunting prevention.<sup>(26)</sup>

The family power structure has an impact on how well families are able to maintain personal and environmental hygiene or how well they are able to change the environment to prevent stunting. A stressor for the emergence of disease can be a lack of personal and environmental hygiene. The family power structure has an impact on how well families are able to maintain personal and environmental hygiene or how well they are able to change the environment to prevent stunting. A stressor for the emergence of disease can be a lack of personal and environmental hygiene. Therefore, it is essential to establish a family power structure, which Friedman defines as the capacity (real or potential) of individuals to command or shape the behavior of family

members.<sup>(13)</sup> Families given the tools they need to prevent stunting can create personal hygiene and environmental adjustment habits. Every family needs their family functions to be carried out as effectively as possible. Families functioning at their best can meet fundamental needs and adapt to the demands of their environment and themselves.

Inseparable from the family's norms and values are the capacity to uphold personal and environmental hygiene as well as the capacity to alter the environment to prevent stunting. linked cultural ideals that have an impact on behavior Including actions that prevent stunting and sustain family health. The community's faith and beliefs, individual people's life philosophy and values, and societal norms all have an impact on parenting.<sup>(27)</sup>

Giving families the tools they need to determine their own needs, solve their own problems, and gather the resources they need to take charge of their own life can help prevent stunting as a social phenomenon.<sup>(28)</sup> Families that are supported by others to enhance or maintain family health status are empowered to prevent stunting. Informed by social and cultural norms, empowered families are innovative in enhancing the welfare of their members by upholding personal cleanliness standards, protecting the environment, and modifying it.<sup>(29)</sup> For the family to accept empowerment as a positive development rather than a negative one, it must sustain and integrate something that currently exists without having to discard it. Family culture can give families more influence when dealing with health issues.<sup>(30,31)</sup>

The limitation of this study is that the results of the study cannot be generalized in general, because the social and cultural structure of the Madura community is different from the social and cultural structure of other societies.

## 5. CONCLUSION

Monitoring of a mother's pregnancy and her children's growth and development is influenced by good reproductive health. the few pregnancy check-ups by mothers. This demonstrates that family reproductive functions have not been implemented in the best possible way. The family controls reproduction in a healthy way and makes preparations for the birth of qualified future generations

The family's capacity to prevent stunting is influenced by the dimensions of family empowerment, including family structural strength, family functions, and family values. The ability of families to provide nutrition, pregnancy checks, growth and development monitoring, personal and environmental cleanliness habits, and the capability of families to change the environment are indicators of their ability to prevent stunting. The ability of the family to avoid stunting is more strongly impacted by how empowered the family is. The recommendation of this study is to strengthen family empowerment (prevent family-based stunting) by involving the participation of community leaders and making family culture and social structure a driving factor for the acceleration of the family culture-based stunting prevention movement.

### Ethics Approval

The KEPK Poltekkes Kemenkes Surabaya issued an ethical eligibility certificate for this study, numbered EA/942/KEPK-Poltekkes\_Sby/V/2022, on April 25, 2022.

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### Competing Interests

All the authors declare that there are no conflicts of interest.

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### Underlying Data

Derived data supporting the findings of this study are available from the corresponding author on request.

## REFERENCES

1. Siramaneerat I, Astutik E, Agushyvana F, Bhumkittipich P, Lamprom W. Examining determinants of stunting in Urban and Rural Indonesian: a multilevel analysis using the population-based Indonesian family life survey (IFLS). *BMC Public Health*. 2024;24(1). <http://dx.doi.org/10.1186/s12889-024-18824-z>
2. Balaj M, York HW, Sripada K, Besnier E, Vonen HD,

- Aravkin A, et al. Parental education and inequalities in child mortality: a global systematic review and meta-analysis. *Lancet*. 2021;398(10300):608–620. [http://dx.doi.org/10.1016/S0140-6736\(21\)00534-1](http://dx.doi.org/10.1016/S0140-6736(21)00534-1)
3. Vincze L, Barnes K, Somerville M, Littlewood R, Atkins H, Rogany A, et al. Cultural adaptation of health interventions including a nutrition component in Indigenous peoples: a systematic scoping review. *International Journal for Equity in Health*. 2021 May 22;20(1). <http://dx.doi.org/10.1186/s12939-021-01462-x>
4. Shao Z yu, Wang P, Li P, Sun Y, Li P pei, Zhu P. Socioeconomic disparities and infancy growth trajectory: a population-based and longitudinal study. *BMC Pediatrics*. 2021;21(1):4–11. <https://doi.org/10.1186/s12887-021-02995-4>
5. Gautam N, Dessie G, Rahman MM, Khanam R. Socioeconomic status and health behavior in children and adolescents: a systematic literature review. *Frontiers in Public Health*. 2023;11. <http://dx.doi.org/10.3389/fpubh.2023.1228632>
6. Roy D, Padhy C, Badavath A. Constraints in production of finger millet. *International Journal of Agriculture Extension and Social Development*. 2024;7(5):262–5. <http://dx.doi.org/10.33545/26180723.2024.v7.i5d.639>
7. Pilli L, Veldwijk J, Swait JD, Donkers B, de Bekker-Grob EW. Sources and processes of social influence on health-related choices: A systematic review based on a social-interdependent choice paradigm. *Social Science and Medicine*. 2024;361(April):117360. <https://doi.org/10.1016/j.socscimed.2024.117360>
8. Vikram K, Vanneman R. Maternal education and the multidimensionality of child health outcomes in India. *Journal of Biosocial Science*. 2019;52(1):57–77. <http://dx.doi.org/10.1017/s0021932019000245>
9. Torlesse H, Cronin AA, Sebayang SK, Nandy R. Determinants of stunting in Indonesian children: Evidence from a cross-sectional survey indicate a prominent role for the water, sanitation and hygiene sector in stunting reduction. *BMC Public Health*. 2016;16(1):1–11. <http://dx.doi.org/10.1186/s12889-016-3339-8>
10. Kemenkes. Menjaga Kesehatan Ibu dan Anak. wartaKESMAS [Internet]. Indonesian Ministry of Health, 2018;48. Available from: [https://kesmas.kemkes.go.id/assets/upload/dir\\_519d41d8cd98f00/files/Warta-kesmas-edisi-3-2018\\_1219.pdf](https://kesmas.kemkes.go.id/assets/upload/dir_519d41d8cd98f00/files/Warta-kesmas-edisi-3-2018_1219.pdf) (Accessed on 11 Oct 2024)
11. Romadhon S. Kiai Bagi Orang Madura. Proceedings of 4th International Conference on Islamic Studies (ICONIS) 2020. November 18, 2020, IAIN Madura, Pamekasan, East Java, Indonesia. 2020. P. 35–42. Available from: <https://conference.iainmadura.ac.id/index.php/iconis/article/download/41/37/139> (Accessed on 11 Oct 2024)
12. Bahri S. Peran Kyai Dalam Mediasi Untuk Penyelesaian Konflik Pasca Pernikahan Dini Di Madura. *Al-Manhaj: Journal of Indonesian Islamic Family Law*. 2020;2(1):18. <http://dx.doi.org/10.19105/al-manhaj.v2i1.3419>
13. Friedman, M. M., Bowden, V. R., & Jones EG. *Buku Ajar*

- Keperawatan Keluarga (Riset, teori, dan praktik). 5th ed. Jakarta: EGC; 2014.
14. Notoatmodjo S. Ilmu Perilaku Kesehatan. Jakarta: Rineka Cipta; 2014.
  15. Herawati T, Krisnatuti D, Pujihavuty R, Latifah EW. Faktor-Faktor Yang Memengaruhi Pelaksanaan Fungsi Keluarga di Indonesia. *Jurnal Ilmu Keluarga dan Konsumen*. 2020;13(3):213–227. <http://dx.doi.org/10.24156/jikk.2020.13.3.213>
  16. Al Isnaini F, Susanto T, Susumaningrum LA, Rasni H, Siswayo S. Hubungan Fungsi Keluarga dengan Status Gizi Balita pada Keluarga Tiri di Kecamatan Panti Kabupaten Jember. *Jurnal Ilmu Keperawatan Komunitas*. 2020;3(1):1–10. <https://doi.org/10.32584/jikk.v3i1.558>
  17. Soetjningsih. Buku Ajar I Ilmu Perkembangan Anak Dan Remaja. Jakarta: Sagung Seto; 2012.
  18. Pusat Data dan Informasi Kemenkes RI. Situasi Balita Pendek (Stunting) Di Indonesia. Bultin Jendela Data Dan Inf Kesehatan Semester I. 2018. Available from: <https://fliphtml5.com/qwklg/gvdc/basic> (Accessed on 15 Aug 2022)
  19. Aini N, Mulia Hera AG, Anindita AI, Stelin Maliangkay K, Amalia R. Hubungan Rendahnya Tingkat Ekonomi Terhadap Risiko Terjadinya Stunting : A Systematic Review. *Jurnal Kesehatan Tambusai*. 2022;3(2):127–135. <http://dx.doi.org/10.31004/jkt.v3i2.4457>
  20. Pujiastuti N. Grandmother's Role as a Personal Reference toward Exclusive Breastfeeding Behavior. *Media Karya Kesehatan*. 2021;4(1). <http://dx.doi.org/10.24198/mkk.v4i1.31459>
  21. Notoatmodjo S. Promosi Kesehatan dan Perilaku Kesehatan. Jakarta: Rineka Cipta; 2014.
  22. Wiyata AL. Mencari Madura. Jakarta: Bidik-Phronesis Publishing; 2013.
  23. Dai L, Wang L. Review of Family Functioning. *Open Journal of Social Sciences*. 2015;03(12):134–141. <http://dx.doi.org/10.4236/jss.2015.312014>
  24. Banovcinova A, Levicka J, Veres M. The Impact of Poverty on the Family System Functioning. *Procedia - Social and Behavioral Sciences*. 2014;132:148–153. <http://dx.doi.org/10.1016/j.sbspro.2014.04.291>
  25. Rustina. Keluarga Dalam Kajian Sosiologi Rustina. *Jurnal Tatsqif*. 2020;(1):35–46. Available from: <https://media.neliti.com/media/publications/114514-ID-keluarga-dalam-kajian-sosiologi.pdf>
  26. Sutarto S, Indriyani R, Puspita Sari RD, Surya J, Oktarlina RZ. Hubungan Kebersihan diri, Sanitasi, dan Riwayat Penyakit Infeksi Enterik (diare) dengan Kejadian Stunting pada balita usia 24-60 bulan. *Jurnal Dunia Kesmas*. 2021;10(1):56–65. <http://dx.doi.org/10.33024/jdk.v10i1.3415>
  27. Diana R, Rachmayanti RD, Anwar F, Khomsan A, Christiani DF. Food taboos and suggestions among Madurese pregnant women : a qualitative study. *Journal of Ethnic Foods*. 2018;5(4):246–253. <https://doi.org/10.1016/j.jef.2018.10.006>
  28. Ardian I. Pemberdayaan Keluarga Sebagai Intervensi Keperawatan Keluarga. *Jurnal Informasi Kimia dan Permodelan*. 2014; 53(9):7-10. Available from: [http://cyber.unissula.ac.id/journal/pe\\_detailartikel.php?id=ODc5YXBheWFlbmtyaXBzaW55YT8=](http://cyber.unissula.ac.id/journal/pe_detailartikel.php?id=ODc5YXBheWFlbmtyaXBzaW55YT8=)
  29. Gayatri M. Pencegahan Stunting dengan Pendekatan Keluarga: Sebuah Tinjauan Literatur. In: *Best Practice Memerangi Stunting: Implementasi Kampus Merdeka Berbasis Agro and Marine Industry*. Banda Aceh: Percetakan Bandar di Lamgugob, 2021. p. 35–46.
  30. Fitriah, Nursalam, Hargono R, Ahsan, Haris M. Family Resilience Madurase Cultural Based AS Family Efforts To Prevent Adolescents Premarital Sex. *Journal Appl Sci Res*. 2016;4(6):39–48.
  31. Fitriah., Haris.M., Suryaningsih. PJ. Analysis of The Effect of Situational Factors in Building Mother's Commitment To Prevention Stunting Actions In Children 2-5 Years Old. In: *The Book Of Abstract The International Nursing Conference*. Surabaya: Universitas Airlangga; 2021.