



ASSOCIATION BETWEEN PARENTING STYLES AND PHYSICAL GROWTH AMONG TODDLERS

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ABSTRACT

Early childhood represents a critical developmental stage in which family care and parenting play a fundamental role in shaping children's health and growth outcomes. In coastal communities, socioeconomic challenges, limited parental supervision, and constrained educational access may influence parenting practices and, consequently, children's physical growth. To identify the dominant parenting style among coastal families in Semarang City and analyse its association with toddlers' physical growth. This quantitative cross-sectional study involved 371 families with toddlers aged 1–5 years living in North Semarang District, a coastal area of Semarang City. Samples were selected using stratified random sampling. Data were collected through a validated parenting style questionnaire based on Baumrind's theory and anthropometric measurements following WHO Child Growth Standards. Data were analysed using descriptive statistics and the Chi-square test ($p < 0.05$). The permissive parenting style was the most dominant (49.9%), followed by authoritarian (27.5%) and authoritative/democratic (22.6%). Most toddlers (68.2%) showed normal growth, while 31.8% experienced problems such as underweight, stunting, or wasting. A significant association was found between parenting style and toddlers' physical growth ($\chi^2 = 13.21$; $p = 0.001$). Children raised with an authoritative (democratic) style had the highest proportion of normal growth (82.1%). Permissive parenting predominates among coastal families, reflecting socioeconomic constraints and limited parental involvement. Parenting style significantly affects child growth; thus, family-based interventions promoting structured and responsive parenting are essential to prevent growth problems in vulnerable coastal communities.

Keywords: child growth; coastal community; parenting style; toddler

How to Cite (in APA Style)

Septianingtyas, M. C. A., Widyaatmadja, S. T., & Noer'aini, I. (2026). Association between Parenting Styles and Physical Growth among Toddlers. *Indonesian Journal of Global Health Research*, 8(2), 717–724. <https://doi.org/10.37287/ijghr.v8i2.707>.

INTRODUCTION

Early childhood, particularly the toddler stage (1–5 years), represents a critical period in human development often referred to as the “golden age.” During this stage, children experience rapid physical, cognitive, and emotional growth, which serves as the foundation for their overall well-being and future health outcomes (Santrock, 2018). Optimal growth in early life is influenced by a combination of genetic, nutritional, environmental, and psychosocial factors, with family care and parenting patterns playing a central role. Parents act as the primary caregivers and decision-makers regarding nutrition, health practices, and stimulation, which significantly affect children's physical growth trajectories.

Parenting patterns are shaped by social, economic, educational, and cultural contexts. Baumrind's classification—authoritative (democratic), authoritarian, and permissive—remains one of the most widely used frameworks to describe parenting behaviors (Baumrind, 1991). Among these, the authoritative style is associated with nurturing, responsiveness, and balanced control, leading to better health and developmental outcomes. Conversely, authoritarian and permissive styles are often linked with inconsistent caregiving and poor health behavior regulation, which may negatively impact children's nutritional intake and physical growth (Mulyani et al., 2021).

In Indonesia, child health and nutritional problems remain significant public health concerns. According to the Ministry of Health (Kemenkes RI, 2023), the prevalence of stunting among Indonesian children under five reached 21.6% in 2022, while underweight affected 17.1%, and wasting 7.7%. Despite national programs targeting stunting reduction, disparities persist, particularly in coastal and low-income areas where access to health services and nutritious food is limited. Coastal communities often face complex challenges such as economic instability, environmental vulnerability, and limited educational attainment, all of which influence parenting quality and children's growth outcomes.

Semarang City, located on the north coast of Central Java, exemplifies this situation. Its northern coastal districts—such as Semarang Utara—are home to dense populations with livelihoods predominantly dependent on fishing and informal trade. Parents in these areas, particularly fathers, often spend long hours at sea, leaving mothers or extended family members responsible for daily childcare. Limited supervision, irregular meal schedules, and inadequate knowledge about balanced nutrition can contribute to suboptimal growth among toddlers. Data from the Semarang City Health Office (2025) revealed that cases of undernutrition and stunting are highest in coastal areas, emphasizing the need to understand contextual factors affecting childcare and growth in these communities.

Previous studies in Indonesia have confirmed associations between parenting style and child growth. Research in Lamongan and Aceh, for instance, found that democratic parenting correlated with better nutritional status and normal growth patterns among toddlers, while authoritarian and permissive styles were linked to undernutrition (Rahmawati, 2019; Permata, 2022). However, most of these studies were conducted in rural or urban inland settings, without considering the unique socioeconomic and cultural characteristics of coastal communities. Moreover, many studies focus solely on nutritional intake or maternal education, neglecting the broader parenting environment that shapes children's health behaviors. Consequently, there remains a lack of context-specific evidence regarding how parenting patterns in coastal families influence the physical growth of toddlers.

Coastal families face distinct challenges in childrearing. The demands of fishing livelihoods often reduce parental presence at home, leading to shared or collective caregiving practices within the community. Cultural beliefs about feeding, child independence, and traditional health practices also play a role in shaping parental behaviors. Studies in other developing countries suggest that in low-resource coastal settings, such practices may either protect or hinder child growth depending on how caregiving responsibilities are distributed and supported by local networks (Yanuarti et al., 2021). Understanding these dynamics is essential for designing culturally sensitive interventions to promote optimal growth.

In addition, family socioeconomic status has been shown to mediate the relationship between parenting and child health. Parents with higher education and income tend to adopt more democratic parenting practices and have better access to nutritious food and health services. In contrast, families facing economic hardship may prioritize immediate survival needs over responsive caregiving, resulting in inconsistent feeding and limited attention to children's growth monitoring. Therefore, an integrated assessment that includes both parenting behavior and socioeconomic factors is necessary to obtain a comprehensive picture of determinants affecting toddler growth in coastal communities.

From a nursing and public health perspective, the family is recognized as the first and most influential environment for promoting child health. The family's ability to provide adequate nutrition, stimulation, and protection from illness is vital for ensuring optimal growth. Nurses and community health workers play a strategic role in empowering families, especially mothers, to

apply positive parenting practices through health education, counseling, and home visits. However, these interventions must be grounded in empirical evidence that reflects the real-life conditions of target populations. Research focusing on the linkage between parenting and physical growth in coastal contexts can therefore inform more tailored family-centered health promotion programs.

Given the limited empirical studies exploring this issue in coastal areas of Indonesia, particularly in Semarang City, this research aims to fill that gap. By examining the association between parenting patterns and physical growth among toddlers in coastal communities, this study provides insights into how family behaviors influence child health outcomes in environments marked by economic and environmental vulnerability. The findings are expected to support local health authorities and nursing practitioners in designing family-based interventions to prevent growth problems such as stunting and undernutrition.

Thus, the purpose of this study is to identify the dominant parenting patterns practiced by families in the coastal areas of Semarang City and to analyze their relationship with toddlers' physical growth. This study also seeks to contribute to the growing body of literature on family and community nursing by highlighting the contextual dynamics of parenting in coastal populations. The results are expected to provide a scientific basis for developing culturally relevant health education modules and intervention strategies that strengthen parenting capacities and promote optimal child growth.

METHOD

This study employed a quantitative design with a cross-sectional approach to examine the relationship between family parenting patterns and the physical growth of toddlers in the coastal areas of Semarang City. This design was chosen to capture variations in parenting behavior and child growth conditions at a single point in time.

The research was conducted in Semarang Utara District, one of the coastal areas of Semarang City characterized by distinct socioeconomic conditions, where most residents work as fishermen and seafood traders. The dense population, economic activities, and limited access to health and educational resources make this area an important setting for studying parenting patterns and child growth. Semarang Utara consists of nine urban villages: Bandarharjo, Bulu Lor, Plombokan, Purwosari, Panggung Lor, Panggung Kidul, Kuningan, Tanjung Mas, and Dadapsari.

The population of this study comprised all families with toddlers aged 1–5 years living in the district. According to data from the Semarang City Health Office (2024), there were approximately 5,087 toddlers in Semarang Utara. The sample size was calculated using the Slovin formula with a 5% margin of error, resulting in a minimum of 371 respondents. A stratified random sampling technique was applied to ensure proportional representation across all nine villages.

The inclusion criteria were families with toddlers aged 1–5 years, residing in the coastal area for at least six months, and willing to participate by providing written informed consent. Families with toddlers who had chronic illnesses or congenital disorders were excluded to prevent bias in growth measurements.

Data were collected using a parenting style questionnaire and an anthropometric observation sheet to measure toddlers' physical growth. Parenting patterns were assessed using a questionnaire adapted from Baumrind's theory, which classifies parenting into three main types: authoritative (democratic), authoritarian, and permissive. The instrument consisted of 30 items with a four-point Likert scale ranging from "never" to "always." The questionnaire had previously undergone language adaptation and content validation by family nursing experts. Item-total correlation analysis showed that all items had correlation coefficients (r) ranging from 0.58 to 0.72, indicating that all

items were valid. The questionnaire also demonstrated high internal consistency with a Cronbach’s alpha of 0.81, confirming its reliability. The parenting style with the highest mean score was identified as the dominant type applied by the family.

The anthropometric observation sheet was designed based on WHO and CDC standards for child growth, ensuring good content validity. Reliability was assessed through inter-observer and intra-observer measurements. Inter-observer Intraclass Correlation Coefficients (ICC) ranged from 0.93 to 0.99, while intra-observer ICC ranged from 0.92 to 0.98, indicating that the anthropometric measurements were highly reliable. The physical growth of toddlers was measured through anthropometric assessments that included height and weight measurements. Measurements were conducted using calibrated equipment—a digital scale with a precision of 0.1 kg and a stadiometer with a precision of 0.1 cm. The results were converted into Z-scores based on the World Health Organization (WHO) Child Growth Standards for weight-for-age (WAZ), height-for-age (HAZ), and weight-for-height (WHZ). Children were categorized as normal, underweight, stunted, wasted, or overweight according to WHO classification.

Data collection took place between June and August 2025, after obtaining ethical approval from the Research Ethics Committee of Telogorejo University Semarang. Prior to fieldwork, enumerators received training on questionnaire administration, interview techniques, and anthropometric measurement procedures. Data were collected through home visits and posyandu (integrated health post) sessions to ensure full participation and accuracy of information.

The collected data were analyzed using descriptive statistics (frequency, percentage, mean, and standard deviation) to describe respondents’ demographic characteristics, parenting patterns, and toddlers’ growth status. The association between parenting style and physical growth was analyzed using the Chi-square test with a significance level of $p < 0.05$. Additionally, logistic regression analysis was performed to identify independent predictors of normal versus abnormal growth while controlling for sociodemographic variables such as parental education and income level.

RESULT

Table 1.
Characteristics of Respondents (n=371)

| Characteristics | Category | f | % |
|----------------------|-------------------------|-----|------|
| Mother’s Age (years) | < 25 | 75 | 20,2 |
| | 26-40 | 231 | 62,3 |
| | >40 | 65 | 17,5 |
| Mother’s Education | Primary | 84 | 22,7 |
| | Secondary | 203 | 54,7 |
| | Higher | 84 | 22,6 |
| Family Income | < regional minimum wage | 247 | 66,6 |
| | ≥ regional minimum wage | 124 | 33,4 |
| Occupation | Fisher/ labor | 158 | 42,6 |
| | Trader/ entrepreneur | 104 | 28,0 |
| | Housewife | 109 | 29,4 |
| Main caregiver | Mother | 331 | 89,2 |
| | Grandmother/ Other | 40 | 10,8 |

Table 2
Distribution of Parenting Styles Among Families (n=371)

| Parenting Pattern | F | % |
|----------------------------|-----|------|
| Authoritative (democratic) | 84 | 22,6 |
| Authoritarian | 102 | 27,5 |
| Permissive | 185 | 49,9 |

Table 3
Physical Growth Status of Toddlers (n= 371)

| Growth Indicator | Category | f | % |
|-------------------------|-------------|-----|------|
| Weight-for-age (WAZ) | Normal | 258 | 69,6 |
| | Underweight | 88 | 23,7 |
| | Overweight | 25 | 6,7 |
| Height-for-age (HAZ) | Normal | 253 | 68,2 |
| | Stunted | 118 | 31,8 |
| Weight-for-height (WHZ) | Normal | 263 | 70,9 |
| | Wasted | 72 | 19,4 |
| | Overweight | 36 | 9,7 |

Table 4
Relationship Between Parenting Style and Physical Growth of Toddlers (n=371)

| Parenting Pattern | Normal Growth (%) | Abnormal growth (%) | Total | X ² | p-value |
|----------------------------|-------------------|---------------------|-------|----------------|---------|
| Authoritative (democratic) | 69 (82,1) | 15 (17,9) | 84 | 13,21 | 0,001 |
| Authoritarian | 66 (64,7) | 36 (35,3) | 102 | | |
| Permissive | 118 (63,8) | 67 (36,2) | 185 | | |

DISCUSSION

This study revealed that among 371 families with toddlers aged 1–5 years living in the coastal area of North Semarang, the majority of parents practiced a permissive parenting style (49.9%), followed by authoritarian (27.5%) and authoritative or democratic (22.6%) styles. Permissive parenting is characterized by high responsiveness but low control, in which parents provide children with substantial freedom and limited supervision or discipline. This finding reflects the socio-economic realities of coastal families, who often face economic instability, long working hours, and limited educational backgrounds. Many fathers work as fishermen or laborers and spend long periods away from home, while mothers balance domestic responsibilities with income-generating activities. Consequently, daily child care is frequently delegated to other family members, such as grandmothers or neighbors, leading to less structured and more permissive caregiving environments.

These results are consistent with a study by Yanuarti et al. (2021) in East Java’s coastal region, which reported that parental work patterns and time constraints contributed to permissive parenting behaviors, characterized by inconsistent supervision and irregular feeding schedules. Similarly, Oyeyemi et al. (2021) in Nigeria found that low-income coastal families tended to adopt permissive or neglectful parenting styles due to economic stress, parental fatigue, and limited health literacy. In such households, children’s routines are often poorly regulated, and decision-making about meals or playtime is largely left to the child’s discretion.

Regarding physical growth, this study found that 68.2% of toddlers exhibited normal growth, while 31.8% experienced growth disturbances, including stunting, underweight, or wasting. This prevalence of growth problems is slightly higher than the national average reported by the Ministry of Health of the Republic of Indonesia (Kemenkes RI, 2023), which indicated a 21.6% stunting rate among children under five. The higher rate in coastal areas can be attributed to poor dietary diversity, inadequate sanitation, and limited parental knowledge about nutrition and health. A study by Widyaningrum and Kurniawati (2022) similarly found that children living in coastal communities often consume insufficient protein and micronutrients because most of the family’s fish catch is sold for income rather than used for household consumption.

The Chi-square test in this study showed a significant association between parenting style and children’s physical growth ($\chi^2 = 13.21$; $p = 0.001$). Children raised under an authoritative parenting style had the highest proportion of normal growth (82.1%), while those under permissive (36.2%)

and authoritarian (35.3%) parenting styles had higher proportions of abnormal growth. This finding highlights the importance of structured, responsive, and consistent parenting in promoting optimal child growth outcomes.

These results align with Baumrind's (1991) theoretical framework, which emphasizes that authoritative parenting—characterized by a balance of warmth and control—supports the development of positive health behaviors, including healthy eating and self-regulation. Conversely, permissive parenting tends to undermine children's ability to regulate eating habits and physical activity. Ventura and Birch (2018) found that permissive parents are less likely to set boundaries regarding meal times or food choices, resulting in irregular eating habits and nutritional imbalances among children. Likewise, Chen et al. (2020) reported that Chinese preschoolers whose parents practiced more engaged and structured parenting demonstrated significantly better height-for-age and weight-for-age outcomes compared to those with lenient or neglectful parents.

The prevalence of permissive parenting in coastal families is further influenced by cultural norms. In many Indonesian coastal communities, childrearing is a collective activity involving extended family members and neighbors. Although such communal caregiving fosters social support, it can also lead to inconsistent routines and a lack of clear behavioral expectations for children. Lestari et al. (2022) found that in coastal Central Java, children are often allowed to play outside unsupervised for long hours, with meal patterns depending on food availability rather than scheduled feeding. This pattern reflects a permissive and situational approach to parenting that may not support consistent nutritional intake.

A study by Rahmawati (2019) in Lamongan, Indonesia, demonstrated that children raised in permissive households were 1.8 times more likely to experience undernutrition compared to those raised in democratic families. Although permissive parenting may appear nurturing and emotionally supportive, the absence of discipline and routine can negatively affect children's growth and development. Hapsari and Rachmawati (2022) also noted that mothers with low educational attainment and unstable income tend to avoid conflicts with their children and prefer to give in to their demands, which often results in poor dietary regulation and irregular sleeping patterns.

International findings further substantiate these associations. A systematic review by Sokol et al. (2023) in the *Journal of Child and Family Studies* found that permissive parenting was consistently linked with adverse child health outcomes, including irregular eating, sedentary lifestyles, and poor self-control. Similarly, Kuppens and Ceulemans (2019) in Belgium concluded that children raised by permissive parents scored lower on physical growth and health indicators than those raised under authoritative parenting, emphasizing that a lack of parental structure and supervision can impede optimal growth trajectories.

Economic hardship also plays a mediating role in this relationship. Parents struggling with poverty often prioritize immediate survival needs over structured caregiving. Oyeyemi et al. (2021) highlighted that financial insecurity and food scarcity in coastal communities lead to permissive parenting behaviors as parents experience fatigue and feelings of helplessness in enforcing rules. This mirrors the situation observed in Semarang's coastal population, where economic and occupational pressures significantly reduce parental involvement in daily childcare.

From a theoretical perspective, these findings support the Family as a Context for Health Promotion concept proposed by Friedman (2019), which views the family as the primary social unit influencing health behaviors and outcomes. Parenting is not merely a psychological construct but a health determinant that shapes children's nutrition, hygiene, and lifestyle. Therefore, interventions aimed at improving child growth must address family dynamics and parental capacity, not just material access to food or healthcare.

From a community nursing standpoint, these findings underscore the critical role of nurses in empowering families through health education, home visits, and family-based interventions. Sulistyorini and Widodo (2020) demonstrated that family-centered parenting education programs significantly improved mothers' feeding practices and reduced stunting rates by up to 18% within six months in fishing communities. Similarly, Kurniawan et al. (2023) reported that mother–toddler classes enhanced maternal knowledge and promoted more structured parenting behaviors, leading to better nutritional outcomes among children.

Overall, this study reinforces the understanding that permissive parenting, while emotionally warm, poses a substantial risk to children's physical growth due to insufficient structure, monitoring, and health-related guidance. Authoritative parenting—characterized by warmth combined with consistent expectations—remains the most conducive to healthy growth outcomes. Therefore, interventions to promote child health in coastal communities should focus on strengthening parenting skills, improving health literacy, and creating supportive social environments for families. In conclusion, parenting style plays a decisive role in shaping children's growth and well-being. The dominance of permissive parenting in coastal Semarang highlights the need for family-based, culturally sensitive nursing interventions that integrate parenting education, nutrition counseling, and community empowerment. By addressing both behavioral and socio-economic determinants of health, community nurses can help families establish more balanced parenting practices that foster optimal child growth and development.

CONCLUSION

The results of this study revealed that the permissive parenting style was the most dominant pattern practiced by families living in the coastal areas of North Semarang District, followed by the authoritarian and authoritative (democratic) styles. The predominance of permissive parenting reflects the socioeconomic conditions of coastal communities, where most parents work as fishermen or informal traders, have limited educational attainment, and face time constraints in childrearing.

Most toddlers in these communities demonstrated normal physical growth, although a considerable proportion still experienced growth problems such as undernutrition, stunting, and wasting. Statistical analysis using the Chi-square test indicated a significant association between parenting style and toddlers' physical growth ($p < 0.05$). Children raised under an authoritative (democratic) parenting style had a higher proportion of normal growth compared to those raised under permissive or authoritarian styles.

These findings highlight that parenting behavior plays a critical role in determining children's physical growth outcomes. A structured and responsive parenting approach contributes positively to children's eating behavior, sleeping patterns, and overall health, whereas a permissive style often leads to insufficient supervision, irregular feeding, and poor health habits.

Therefore, continuous efforts are needed from healthcare providers particularly community nurses and posyandu (integrated health post) cadres to strengthen parental capacity through family health education, mother–toddler classes, and home visit programs. Context-sensitive interventions tailored to the socioeconomic realities of coastal populations can help empower families to adopt healthier parenting practices and prevent nutrition-related growth problems such as stunting and underweight.

In conclusion, this study emphasizes that parenting style is an essential determinant of toddlers' physical growth, and that improving parenting quality should be a key strategy in promotive and preventive child health efforts in vulnerable coastal communities.

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