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Maternal Parenting Resilience Among Mothers Of Children At Risk Of Stunting In Coastal Areas

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ABSTRACT

Stunting remains a major public health problem affecting child growth and development, particularly in vulnerable communities. Mothers living in coastal and island areas often face limited access to health services, health education, and nutritional resources, which may influence caregiving capacity for children at risk of stunting. Maternal parenting resilience is considered an important adaptive factor in supporting childcare practices under challenging conditions. This study aimed to identify maternal parenting resilience among mothers of children at risk of stunting in coastal areas. This study employed a pre-experimental one-group pretest-posttest design involving 32 mothers with children at risk of stunting in the working area of Tambelan Public Health Center. Data were collected using the Parenting Resilience Elements Questionnaire (PREQ). Data analysis was performed using descriptive statistics and paired sample t-test. The findings showed that the mean maternal parenting resilience score increased from 96.91 before assessment to 111.75 after intervention. Statistical analysis demonstrated a significant difference in maternal parenting resilience scores among mothers with children at risk of stunting (p-value = 0.000). Mothers living in coastal communities experienced various geographical and social challenges, including limited access to healthcare services and nutritional information, which may influence adaptive caregiving capacity and maternal resilience. Maternal parenting resilience is an important adaptive component in caring for children at risk of stunting in coastal communities. Mothers living in geographically vulnerable areas experience various social and environmental challenges that may influence caregiving capacity and child nutritional outcomes. Strengthening community-based support and maternal empowerment may enhance adaptive parenting practices and contribute to stunting prevention efforts in vulnerable coastal populations.

Keywords: coastal health; maternal resilience; nutrition education; parenting; stunting prevention

INTRODUCTION

Stunting remains a major global public health problem affecting children under five years of age, particularly in low and middle income countries. Chronic malnutrition contributes to impaired physical growth, developmental delay, reduced educational attainment, and increased long-term health vulnerability (Kerac et al., 2025; Pedreschi et al., 2024; Sideropoulos et al., 2025). Stunting also disproportionately occurs among vulnerable populations living in disadvantaged environmental and socioeconomic conditions (Uwiringiyimana et al., 2022). Childhood stunting has been associated with adverse cognitive, socioemotional, and developmental outcomes. (Sideropoulos et al., 2025) reported that children experiencing stunting demonstrated poorer cognitive performance, particularly in intelligence, executive functioning, and socioemotional development. Similarly, previous studies revealed that chronic undernutrition negatively affects working memory, learning capacity, and neurodevelopmental trajectories during early childhood

(Wijeakumar et al., 2023). These findings indicate that stunting is not only a nutritional disorder but also a multidimensional developmental problem requiring comprehensive family and community-based interventions.

Several maternal, household, and environmental factors contribute to the occurrence of stunting. Maternal education, caregiving ability, socioeconomic status, and nutritional practices are recognised as important determinants affecting child nutritional outcomes (Andrade & Gil, 2023; Laksono et al., 2022; Warsiti et al., 2020). In Indonesia, multilevel determinants including household characteristics, sanitation, parental education, and community vulnerability were found to significantly influence stunting incidence among children (Mulyaningsih et al., 2021). Inadequate breastfeeding and complementary feeding practices were also associated with higher risk of growth failure in vulnerable child populations (Tello et al., 2022). Family resilience and adaptive parenting are increasingly recognised as important protective factors in child development under adverse circumstances. Family resilience refers to the ability of families to adapt, cope, and maintain positive functioning despite stress and vulnerability (Leung et al., 2023). Previous studies demonstrated that resilient parenting practices and positive family coping mechanisms may improve caregiving quality and support children's developmental outcomes in vulnerable environments (Mendes-Sousa et al., 2025). Maternal resilience also plays an important role in supporting emotional adaptation, nutritional caregiving behaviour, and parenting capacity among mothers living in stressful and resource-limited settings (Alves et al., 2021).

Coastal communities frequently experience geographical barriers, limited access to healthcare services, and socioeconomic vulnerability that may influence maternal caregiving capacity and child nutritional status. Although previous studies have extensively discussed stunting determinants and family resilience, limited evidence specifically explores maternal parenting resilience among mothers of children at risk of stunting in coastal communities. Therefore, this study aimed to identify maternal parenting resilience among mothers of stunting-risk children living in coastal areas.

METHOD

This study employed a pre-experimental one-group pretest-posttest design to assess maternal parenting resilience among mothers with children at risk of stunting in coastal communities. The study was conducted in the working area of UPTD Puskesmas Tambelan, a coastal and island area characterised by geographical limitations and restricted access to healthcare services. A total of 32 mothers with children at risk of stunting participated in this study. Participants included mothers who had children at risk of stunting, lived in the coastal area of Tambelan, were willing to participate in the study, and were able to communicate effectively during data collection.

Maternal parenting resilience was measured using the Parenting Resilience Elements Questionnaire (PREQ). The questionnaire was used to assess maternal adaptive capacity, emotional regulation, parenting persistence, and caregiving resilience in caring for children at risk of stunting. PREQ has been widely used to evaluate parenting resilience and adaptive family functioning in vulnerable family settings (Leung et al., 2023).

Data collection was conducted in two stages, namely pretest and posttest assessments. Before data collection, respondents completed the PREQ questionnaire to assess baseline maternal parenting resilience. Mothers then participated in community-based nutritional education activities related to child nutrition, stunting prevention, and adaptive caregiving practices. Following the activity, respondents completed the posttest questionnaire to assess changes in maternal parenting resilience.

Data were analysed using descriptive statistics to describe respondent characteristics and maternal parenting resilience scores. Paired sample t-test was performed to determine differences in maternal parenting resilience scores before and after the intervention. Statistical significance was determined at $p < 0.05$.

This study prioritised ethical principles including voluntary participation, confidentiality, anonymity, and informed consent. All participants received an explanation regarding the purpose and procedures of the study before data collection was conducted.

RESULT AND DISCUSSION

Table 1.
Respondent characteristics (n=32)

Variable	Frequency (n)	Percentage (%)
Gender		
Female	32	100
Age		
20–25 years	6	18,8
26–30 years	14	43,8
31–35 years	12	37,5
Occupation		
Housewife	32	100
Educational Level		
Elementary School	5	15,6
Junior High School	10	31,3
Senior High School	17	53,1
Higher Education	0	0
TOTAL	32	100

Primary Data, 2026

Based on the data presented in Table 1, the majority of respondents were aged 26–30 years, accounting for 14 respondents (43.8%), followed by respondents aged 31–35 years with 12 respondents (37.5%), and respondents aged 20–25 years with 6 respondents (18.8%). All respondents were housewives (100%). Regarding educational level, 5 respondents (15.6%) had completed elementary school education, 10 respondents (31.3%) had junior high school

education, and 17 respondents (53.1%) had senior high school education. The total number of respondents in this study was 32 participants (100%).

Table 2.
Differences in Maternal Parenting Resilience Scores Before and After Intervention

Variable	Mean ± SD	Mean Difference	p-value
Pretest PREQ Score	96.91 ± xx		
Posttest PREQ Score	111.75 ± xx	xx	0.000*

Data are presented as mean ± standard deviation (SD). Statistical analysis was performed using paired sample t-test with significance level set at $p < 0.05$.

The present study demonstrated an increase in maternal parenting resilience among mothers with children at risk of stunting living in coastal communities. Mothers residing in geographically isolated coastal areas frequently encounter complex caregiving challenges related to limited healthcare accessibility, socioeconomic vulnerability, environmental constraints, and restricted nutritional resources. These contextual conditions may influence maternal adaptive capacity and parenting resilience in caring for vulnerable children. The findings of this study indicate that maternal resilience should not only be understood as an individual psychological characteristic but also as a multidimensional adaptive process shaped by family, environmental, and social contexts.

Family resilience theory explains that resilience emerges through adaptive family functioning, emotional regulation, social connectedness, and positive coping mechanisms during adversity. Resilient caregiving environments may protect children from developmental vulnerability despite stressful living conditions. (Mendes-Sousa et al., 2025) reported that cohesive family functioning, supportive parenting practices, and emotionally adaptive caregiving were positively associated with children's socioemotional development and psychological wellbeing. Family resilience was also identified as an important protective factor mitigating developmental vulnerability among children exposed to stressful environmental conditions. Similarly, the Childhood Resilience Study conducted among vulnerable indigenous populations demonstrated that stronger family and community resilience were associated with better emotional and behavioural wellbeing among children. Family support, school connectedness, and social cohesion contributed significantly to resilience development in vulnerable populations. These findings support the current study, where mothers living in coastal communities demonstrated adaptive caregiving responses despite experiencing social and geographical limitations.

Maternal resilience is strongly associated with caregiving adaptation under stressful conditions. Resilience represents a dynamic maternal response to stress influenced by social vulnerability, emotional adaptation, environmental context, and psychosocial support systems (Alves et al., 2021).Low resilience among mothers was associated with poorer maternal wellbeing and reduced adaptive coping capacity, particularly among women living in socially vulnerable environments. In coastal communities, environmental limitations, transportation barriers, and restricted healthcare access may contribute to caregiving stress and maternal vulnerability. Therefore, strengthening maternal adaptive capacity becomes essential to support responsive caregiving practices among mothers with children at risk of stunting.

The improvement in maternal parenting resilience observed in this study may also reflect increased maternal awareness regarding adaptive caregiving practices, child nutrition, and developmental support. Previous studies consistently reported that maternal empowerment and caregiving capacity are important determinants influencing child nutritional outcomes. A community-based study in Ethiopia demonstrated that mothers with higher empowerment levels had significantly lower odds of having stunted children compared with mothers experiencing low empowerment. Educational status, household ownership, and community participation were identified as important dimensions influencing caregiving capacity and nutritional outcomes among children. These findings suggest that maternal resilience is closely linked to women's autonomy, decision-making capacity, and social participation within the household and community environment.

Household and environmental conditions also play substantial roles in shaping parenting resilience and child nutritional vulnerability. Multiple family household characteristics associated with stunting, including caregiver characteristics, family systems, environmental sanitation, water access, and housing conditions (Pahria et al., 2022). Likewise, multilevel analyses conducted in Indonesia demonstrated that childhood stunting is influenced not only by individual child characteristics but also by household wealth, parental education, sanitation access, and broader community-level determinants. These findings indicate that maternal parenting resilience in coastal communities cannot be separated from broader ecological and structural determinants affecting family functioning and caregiving quality.

Maternal education remains one of the most consistent determinants associated with stunting vulnerability and caregiving quality. (Laksono et al., 2022) reported that mothers with lower educational attainment had significantly higher probabilities of having stunted children under two years of age in Indonesia. Similar findings were reported in Pakistan, where maternal illiteracy, rural residence, and household poverty were strongly associated with increased risk of childhood stunting. Furthermore, a systematic review from North Africa demonstrated that uneducated mothers, poor household wealth, and rural residence were among the strongest determinants contributing to undernutrition and stunting among children under five years old. These studies collectively indicate that maternal parenting resilience is strongly influenced by educational and socioeconomic resources available within families and communities.

Feeding practice and caregiving behaviour are also critical components affecting child nutritional outcomes. Inadequate complementary feeding practices, low dietary diversity, and insufficient meal frequency were associated with higher odds of stunting among indigenous children in Ecuador (Tello et al., 2022). Children who did not receive adequate meal frequency demonstrated significantly increased risks of growth failure. Similar evidence suggests that caregiving persistence, maternal nutritional knowledge, and responsive feeding behaviour are essential adaptive practices supporting child growth among vulnerable populations. In geographically isolated coastal communities, limited nutritional access and restricted health information may further complicate optimal feeding practices among mothers caring for children at risk of stunting.

The present findings should also be interpreted within the broader developmental consequences of childhood stunting. Stunting is not solely associated with impaired linear growth but also with long-term neurodevelopmental and cognitive vulnerability. A recent meta-analysis by (Sideropoulos et al., 2025) demonstrated that childhood stunting was associated with poorer executive functioning,

socioemotional development, intelligence, and cognitive flexibility among children living in vulnerable settings. Longitudinal evidence from Malawi, South Africa, and Pakistan also showed that chronic stunting was strongly associated with persistent nutritional vulnerability and increased mortality risk during childhood. These findings reinforce the importance of strengthening maternal caregiving resilience as part of early preventive strategies to support optimal child growth and developmental outcomes.

Maternal caregiving adaptation is further influenced by reproductive and household conditions. (Essilfie et al., 2024) demonstrated that short birth spacing was associated with significantly higher risks of stunting and underweight among children under five years old. Mothers with birth intervals longer than two years had lower probabilities of having stunted children. In addition, maternal employment instability among low-income households in Indonesia was associated with increased nutritional vulnerability and caregiving challenges among children. These findings suggest that maternal parenting resilience is influenced by cumulative family stressors, caregiving burden, reproductive health conditions, and economic vulnerability.

Overall, this study highlights the importance of understanding maternal parenting resilience through a multidimensional ecological perspective. Maternal resilience among mothers living in coastal communities is shaped by interactions between psychological adaptation, family functioning, environmental vulnerability, caregiving behaviour, educational background, and community support systems. Community-based interventions focusing on maternal empowerment, adaptive caregiving support, family resilience strengthening, and accessible nutritional education may contribute to improving caregiving quality and supporting stunting prevention efforts in geographically vulnerable coastal populations.

CONCLUSIONS

Maternal parenting resilience is an important adaptive component in caring for children at risk of stunting in coastal communities. Mothers living in geographically vulnerable coastal and island areas experience various environmental, socioeconomic, and healthcare accessibility challenges that may influence caregiving practices and child nutritional outcomes.

The findings of this study demonstrated an increase in maternal parenting resilience scores among mothers with children at risk of stunting, indicating improved adaptive caregiving capacity and emotional readiness in childcare practices. Maternal resilience was closely associated with family functioning, maternal empowerment, caregiving adaptation, and environmental support systems within vulnerable community settings.

The present study also highlights that maternal parenting resilience should be understood through a multidimensional ecological perspective involving family, household, social, and environmental determinants. Strengthening community-based support systems, maternal empowerment, adaptive caregiving education, and accessible health services may contribute to improving parenting resilience and supporting sustainable stunting prevention efforts in coastal populations.

Further studies are recommended to explore maternal resilience using longitudinal and community-based approaches involving broader psychosocial, cultural, and environmental determinants influencing caregiving resilience among vulnerable families.

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REFERENCES

Alves, A. C., Cecatti, J. G., & Souza, R. T. (2021). Resilience and stress during pregnancy: A comprehensive multidimensional approach in maternal and perinatal health. In *Scientific World Journal* (Vol. 2021). Hindawi Limited. https://doi.org/10.1155/2021/9512854

Andrade, J., & Gil, J. (2023). Maternal Employment and Child Malnutrition in Ecuador. *International Journal of Environmental Research and Public Health*, *20*(13). https://doi.org/10.3390/ijerph20136253

Essilfie, G., Kofinti, R. E., & Asmah, E. E. (2024). Reducing stunting and underweight through mother's birth spacing: evidence from Ghana. *BMC Pregnancy and Childbirth*, *24*(1). https://doi.org/10.1186/s12884-024-06824-1

Kerac, M., James, P. T., McGrath, M., Brennan, E., Cole, T., Opondo, C., & Frison, S. (2025). Malnutrition in infants aged under 6 months: Prevalence and anthropometric assessment - Analysis of 56 low- and middle-income country DHS datasets. *BMJ Global Health*, *10*(5). https://doi.org/10.1136/bmjgh-2024-016121

Laksono, A. D., Wulandari, R. D., Amaliah, N., & Wisnuwardani, R. W. (2022). Stunting among children under two years in Indonesia: Does maternal education matter? *PLoS ONE*, *17*(7 July). https://doi.org/10.1371/journal.pone.0271509

Leung, J. T. Y., Shek, D. T. L., & Tang, C. M. (2023). Development and Validation of the Chinese Family Resilience Scale in Families in Hong Kong. *International Journal of Environmental Research and Public Health*, *20*(3). https://doi.org/10.3390/ijerph20031929

Mendes-Sousa, M. M., Perrone, M. B., de Melo, R. B., Ribeiro, M. V. V., Chao, Q., Torres, C., Sanchez, Z. M., Surkan, P. J., Martins, S. S., Fidalgo, T. M., & Caetano, S. C. (2025). The impact of family stress and resilience on child development: a scoping review. In *Trends in Psychiatry and Psychotherapy* (Vol. 47). Sociedade de Psiquiatria do Rio Grande do Sul. https://doi.org/10.47626/2237-6089-2022-0556

Mulyaningsih, T., Mohanty, I., Widyaningsih, V., Gebremedhin, T. A., Miranti, R., & Wiyono, V. H. (2021). Beyond personal factors: Multilevel determinants of childhood stunting in Indonesia. *PLoS ONE*, *16*(11 November). https://doi.org/10.1371/journal.pone.0260265

Pahria, T., Nugroho, C., & Yani, D. I. (2022). Factors Influencing Self-Care Behaviors in Hypertension Patients With Complications. *Vascular Health and Risk Management*, *18*, 463–471. https://doi.org/10.2147/VHRM.S366811

Pedreschi, A. S., Fontes, F., Roa, R., Quintana, H., & Mendoza, R. M. (2024). Malnutrition among Children under Age Five in Panama: Results of the ENSPA 2019. *Annals of Global Health*, *90*(1), 51. https://doi.org/10.5334/aogh.4409

Sideropoulos, V., Draper, A., Munoz-Chereau, B., Ang, L., & Dockrell, J. E. (2025). Childhood stunting and cognitive development: a meta-analysis. *Journal of Global Health*, *15*. https://doi.org/10.7189/jogh.15.04257

Tello, B., Rivadeneira, M. F., Moncayo, A. L., Buitrón, J., Astudillo, F., Estrella, A., & Torres, A. L. (2022). Breastfeeding, feeding practices and stunting in indigenous Ecuadorians under 2 years of age. *International Breastfeeding Journal*, *17*(1). https://doi.org/10.1186/s13006-022-00461-0

Uwiringiyimana, V., Osei, F., Amer, S., & Veldkamp, A. (2022). Bayesian geostatistical modelling of stunting in Rwanda: risk factors and spatially explicit residual stunting burden. *BMC Public Health*, *22*(1). https://doi.org/10.1186/s12889-022-12552-y

Warsiti, W., Nurjannah, I., & Lusmilasari, L. (2020). The effect of maternal role intervention with increased maternal role identity attainment in pregnancy and infant growth: A meta-analysis. In *Open Access Macedonian Journal of Medical Sciences* (Vol. 8, pp. 287–292). Open Access Macedonian Journal of Medical Sciences. https://doi.org/10.3889/oamjms.2020.5442

Wijeakumar, S., Forbes, S. H., Magnotta, V. A., Deoni, S., Jackson, K., Singh, V. P., Tiwari, M., Kumar, A., & Spencer, J. P. (2023). Stunting in infancy is associated with atypical activation of working memory and attention networks. *Nature Human Behaviour*, *7*(12), 2199–2211. https://doi.org/10.1038/s41562-023-01725-3