



Family support and quality of life among stunted preschool-aged children: A cross-sectional study

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ABSTRACT

Background: Stunting remains a major public health problem that not only impairs physical growth but also compromises children's emotional, social, and cognitive development, ultimately reducing quality of life. Families play a critical role in the prevention and management of stunting by providing adequate caregiving, ensuring proper nutrition, and facilitating access to healthcare services. Understanding the association between family support and quality of life is essential for guiding effective interventions.

Objective: This study aimed to examine the correlation between family support and quality of life among preschool children with stunting.

Methods: A cross-sectional design with a quantitative approach was applied, involving 66 parents or caregivers of preschool children aged 36–72 months diagnosed with stunting. Respondents were selected using purposive sampling. Family support was measured across emotional, instrumental, appreciation, and informational domains, while children's quality of life was assessed using standardized questionnaires. Data were analyzed using chi-square tests and multivariate logistic regression to identify potential confounding factors.

Results: The analysis demonstrated a significant relationship between family support and quality of life ($p < 0.001$). Children from families providing strong support were 65.9 times more likely to experience good quality of life compared with those from families with inadequate support. Multivariate analysis revealed parental education as a confounding factor ($p = 0.011$), with higher educational attainment contributing to stronger family support and improved child outcomes.

Conclusions: Strengthening family support and improving parental education are crucial strategies to enhance the quality of life of stunted preschool children

Keywords: stunting; family support; quality of life; parents

INTRODUCTION

Preschool children (aged 36–72 months) are in a critical developmental stage marked by rapid progress across physical, cognitive, and social domains (Kemenkes, 2018). At this age, developmental potential can be fully realized through

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- *Strengthening family support is essential to improve the quality of life of stunted preschool children; healthcare professionals should educate families on emotional, practical, and informational support.*
- *Because parental education strongly influences child outcomes, providers should prioritize interventions that increase parents' knowledge and skills, especially for those with lower education levels.*
- *Nurses and healthcare professionals should adopt a holistic approach that addresses nutrition, psychosocial, and educational aspects of child development, emphasizing family dynamics and parental involvement.*

appropriate stimulation. Growth is reflected in language, fine and gross motor skills, and socio-emotional development, all of which are strongly influenced by the caregiving environment, making family support essential (Lestari et al., 2022). During these years, physical growth slows, while psychosocial and cognitive development accelerate. Children refine motor skills and advance in areas such as social norms, religious practices, emotional regulation, cognitive abilities, and language. On average, preschoolers grow 6–8 cm in height annually, with typical ranges of 90–96 cm at age 3, 95–105 cm at age 4, 103–115 cm at age 5, and 108–120 cm at age 6. Growth variation depends on genetics, nutrition, and health, highlighting the importance of adequate nutrition, sufficient sleep, and physical activity (Lestari et al., 2022). In Lampung Province, recent data from the Indonesian Nutrition Status Survey (SSGI) showed a decline in stunting prevalence from 15.2% in 2022 to 14.9% in 2023. In Pringsewu District, the Family Health and Nutrition Section reported that among 26,668 children under five, 5.3% were underweight, 4.2% stunted, and 0.1% severely malnourished. These figures improved compared with the previous year's prevalence of 6.3% underweight, 6.8% stunting, and 3.4% malnutrition. Despite progress, stunting

remains a significant health concern.

Stunting significantly compromises children's quality of life, affecting physical, emotional, social, and academic functioning. The World Health Organization (WHO, 2021) defines quality of life as an individual's perception of their position in life within the context of culture, values, and expectations, a framework reflected in the Pediatric Quality of Life (PedsQL) assessment. Stunted children often experience impaired physical abilities, emotional disturbances such as fear and sadness, social challenges including peer difficulties and bullying, and academic problems such as poor concentration, incomplete schoolwork, and frequent absenteeism. A preliminary study in Pringsewu identified 66 stunted children and highlighted ongoing efforts to address the issue through interventions such as micronutrient supplementation, exclusive breastfeeding promotion, nutrition campaigns, maternal health classes, deworming, and integrated services at village health posts (posyandu). Despite these initiatives, challenges persist due to limited parental knowledge of nutrition and caregiving, economic constraints restricting access to food and healthcare, and unhealthy practices such as poor sanitation and inadequate food hygiene. These factors, compounded by limited developmental stimulation and emotional support, underscore the critical role of family support in improving the quality of life of stunted children.

Cultural beliefs and traditional practices often perpetuate poor nutritional habits, as some families hold misconceptions about foods that are actually rich in essential nutrients, thereby hindering child nutrition. Addressing these challenges requires collaboration among government agencies, healthcare providers, and the community to strengthen family support for stunted children, particularly in rural areas. Families play a central role in preventing and managing stunting by providing appropriate caregiving, ensuring adequate nutrition, and accessing necessary healthcare services. Understanding how families deliver emotional, appreciation, instrumental, and informational support is essential, as such support empowers children's development, enhances resilience, and improves overall quality of life (Palowa et al., 2021). Therefore, this study aimed to examine the relationship between family support and the quality of life of preschool children with stunting.

METHODS

Design

This study employed a cross-sectional design, which allows the collection of data at a single point in time to identify associations between variables.

Sample and Setting

This study was conducted in the working area of the Community Health Center Technical Implementation Unit (UPT Puskesmas) Rejosari, Pringsewu District, Lampung Province. The study population comprised parents or primary caregivers of preschool-aged children (36–72 months) diagnosed with stunting and residing within the health center's jurisdiction. A total sampling technique was applied, yielding 66 respondents who met the inclusion and exclusion criteria. Eligible participants were those willing to provide informed consent and able to understand and complete the questionnaire independently or with assistance. Exclusion criteria included parents or caregivers unavailable during data collection and not reachable through follow-up visits, those who returned incomplete questionnaires despite revision opportunities, and those whose children had comorbid conditions such as disabilities or chronic illnesses that could independently influence quality of life.

Instrument

Data were collected using two structured questionnaires. The first instrument, the Family Support Questionnaire based on Friedman's theory, assessed four dimensions of family support: emotional, appreciation, instrumental, and informational. It contained 40 items rated on a 4-point Likert scale (always = 4, often = 3, sometimes = 2, never = 1), with total scores above 109.62 indicating high family support. The second instrument, the Pediatric Quality of Life Inventory (PedsQL), measured children's quality of life across physical, emotional, social, and school domains. This questionnaire included 23 items with response options scored as never (100), almost never (75), sometimes (50), often (25), and always (0). A total score greater than 63.88 indicated good quality of life. Both questionnaires had been tested for validity and reliability and were administered directly to respondents to ensure accurate data collection for statistical analysis.

Data Collection

Data collection was conducted in 25 Posyandu under the supervision of the UPT Puskesmas Rejosari. The researcher coordinated with Posyandu coordinators to arrange schedules, and sessions were held on Fridays and Saturdays. Eligible participants, parents of preschool children diagnosed with stunting, were identified according to the inclusion and exclusion criteria. At each session, the researcher introduced the study, explained its objectives and procedures, and obtained written informed consent. Respondents then completed the family support and quality of life questionnaires, with assistance provided when clarification was needed. Completed questionnaires were reviewed for accuracy, and respondents were allowed to make corrections if necessary. For participants who could not attend the scheduled sessions, home visits were carried out to ensure participation. At the end of data collection, the researcher expressed gratitude and provided a small token of appreciation to participants.

Data Analysis

Univariate, bivariate, and multivariate analyses were conducted to address the study objectives. Univariate analysis described respondent characteristics, including age, gender, education, income, family support (emotional, appreciation, instrumental, and informational), and quality of life, with results presented as frequencies, percentages, means, and standard deviations. Bivariate analysis using the Chi-square test examined the association between family support and quality of life, with a p -value < 0.05 considered statistically significant. Multivariate analysis was performed using binary logistic regression to evaluate the effects of independent variables (age, gender, education, income) on quality of life and to identify potential confounding factors. Variables with $p < 0.25$ in bivariate analysis were included in the model, and changes in odds ratios (OR) greater than 10% were considered indicative of confounding. Findings were presented in tables and interpreted according to the research objectives.

Ethical Consideration

This study was conducted in accordance with established ethical principles for research involving human participants, including respect for autonomy, beneficence, non-maleficence,

Table 1. Frequency distribution of respondent characteristics (n = 66)

Variable	Category	n	%
Age (Mean SD)		31.91 (4.69)	
Family support	Poor	30	45.5
	Good	36	54.5
Quality of life	Poor	40	60.6
	Good	26	39.4
Gender	Male	5	7.6
	Female	61	92.4
Education level	Higher education (senior high school/college)	43	65.2
	Lower education (elementary/junior high school)	23	34.8
Income level	Above minimum wage (≥IDR. 2,893,069)	18	27.3
	Below minimum wage (<IDR. 2,893,069)	48	72.7

Table 2. Analysis of the relationship between family support and quality of life of preschool-aged children with stunting

Family support	Quality of Life				Total	OR (95%CI)	P	
	Poor		Good					
	n	%	n	%				
Poor	29	69,7	1	3,3	40	100	65,9	0.000
Good	11	30.6	25	69.4	26	100	7.9	

Table 3. Results of the multiple logistic regression test

Variable	P value
Age	0.226
Gender	0.053
Education level	0.006
Income level	0.045

and justice. Ethical approval was obtained from the Ethical Review Board of the Faculty of Nursing Science, Universitas Muhammadiyah Jakarta (Approval No. 0024/F-9UMJ/I/2025). Prior to data collection, the researcher explained the study objectives, procedures, potential risks, and benefits to all eligible participants. Written informed consent was obtained from each participant, and confidentiality was ensured by anonymizing all data. Participation was entirely voluntary, and respondents were free to withdraw from the study at any time without penalty.

RESULTS

Univariate Analysis

Based on the data in Table 1, among the 66 respondents, 54.5% reported receiving good family support, whereas 60.6% reported a poor quality of life. Most respondents were female (92.4%) and had attained higher education (senior high school or college, 65.2%). Furthermore, 72.7% reported an income below the regional minimum wage (< IDR 2,893,069). The mean age of respondents was 31.91 years (95% CI, 30.76–33.06), with a standard

Table 4. Confounding test of age, gender, education, and income based on changes in odds ratios (OR) for the main variable after removal of candidate confounders (n = 66)

	B	S.E	Wald	Df	Sig	Exp (B)	95% CI	
							Lower	Upper
Step 1								
Age	0.058	0.060	0.924	1	0.336	1.059	0.942	1.191
Gender	1.144	1.243	0.846	1	0.358	3.138	0.274	35.889
Education level	1.306	0.656	3.960	1	0.047	3.690	1.020	13.348
Income level	0.528	0.635	0.691	1	0.406	1.695	0.489	5.881
Step 2								
Age	0.057	0.060	.922	1	0.337	1.059	0.942	1.190
Gender	1.490	1.170	1.621	1	0.203	4.438	0.448	44.004
Education level	1.416	0.643	4.849	1	0.028	4.120	1.168	14.527
Step 3								
Age	1.492	1.164	1.641	1	0.200	4.444	0.454	43.537
Gender	1.453	0.639	5.171	1	0.023	4.275	1.222	14.954
Education level	-1.558	0.550	8.022	1	0.005	0.211		
Step 4								
Education level	1.605	0.629	6.507	1	0.011	4.976	1.450	17.074

Table 5. Changes in odds ratios after removal of potential confounding variables among respondents (n = 66)

Variable	OR with income	OR without income	Changes in OR	P-value
Age	1.059	-	-	0.336
Gender	3.138	-	-	0.358
Education level	3.690	-	-	0.047
Income level	1.695	-	-	0.406
Variable	OR with income	OR without income	Changes in OR	P-value
Age	1.059	1.059	0%	0.337
Gender	3.138	4.438	0.29%	0.203
Education level	3.690	4.120	0.10%	0.028
Variable	OR with age	OR without age	Changes in OR	P-value
Gender	3.138	4.444	1.30%	0.200
Education level	3.690	4.275	0.58%	0.23
Variable	OR with gender	OR without gender	Changes in OR	P-value
Education level	4.275	4.976	16.4%	0.011

deviation of 4.69 years.

Analysis of the Relationship Between Family Support and Quality of Life in Preschool Children With Stunting

The analysis revealed that among families with poor support, 69.7% of children had a poor quality of life and only 3.3% had a good quality of life. Conversely, in families providing good support, 30.3% of children reported poor quality of life, while 96.7% reported good quality of life. The statistical test showed a p -value < 0.001 , indicating a significant association between family support and quality of life among stunted preschool children. The odds ratio (OR) was 65.9, with a 95% confidence interval of 7.9 to infinity, suggesting that children from families with good support were approximately 65.9 times more likely to have a good quality of life compared with those from families with poor support (Table 2).

Based on the criterion that variables with p -values < 0.25 are eligible for inclusion in multivariate analysis, all variables in this table met the threshold and were subsequently included in the multivariate model (Table 3).

Multivariate analysis

After the gender variable was removed, the odds ratio (OR) for the education variable changed by more than 10%, indicating that education served as a confounding factor in the relationship between family support and quality of life among stunted preschool children. After controlling for the confounding effect of education, parents who provided good family support were approximately 4.98 times more likely to have children with a good quality of life compared with those who provided poor support. This association was statistically significant ($p = 0.011$; $\text{Exp}(B) = 4.976$). The constant in the model was also significant ($p = 0.005$), demonstrating an adequate model fit (Tables 4 and 5).

DISCUSSION

The findings of this study highlight several parental and family-related factors associated with the quality of life of preschool children with stunting. The average parental age was 31.91 years, ranging from 24 to 41 years, which corresponds to early to middle adulthood, a stage commonly linked to greater responsibility in child rearing. Parental age plays an important

role in providing support; younger parents may face challenges in emotional regulation, whereas older parents are generally more stable, better informed, and more capable of ensuring adequate nutrition and care for their children. In many cultural contexts, mothers remain the primary caregivers, assuming responsibility for breastfeeding, feeding practices, and daily nurturing. Their frequent contact with community health services, such as Posyandu, enhances their knowledge and sensitivity to nutritional issues. However, optimal child care cannot rely solely on mothers; the involvement of fathers and extended family support is equally crucial. Strong family support has been shown to improve psychological well-being and enable families to provide love and attention necessary for healthy development (Friedman, 2018).

Gender dynamics also shaped the findings, as the majority of respondents were women (61 out of 66). This aligns with the traditional caregiving role of mothers, who are often the first to recognize signs of nutritional deficiencies and developmental delays due to their closer interaction with children and health services. While fathers are less engaged in daily care, their involvement is vital for balanced parenting. As noted by Artanti & Garzia (2022), mothers and fathers exhibit distinct parenting styles that, when combined, contribute positively to child development. Mothers typically provide emotional support and daily care, which are critical to children's early experiences and long-term well-being.

Parental education also emerged as an important factor. Most parents (65.2%) had completed senior high school or tertiary education, and higher educational attainment was associated with improved ability to seek and apply information on nutrition and child growth. This finding is consistent with Muriati et al. (2019), who reported that parental education significantly influences child development through knowledge acquisition and the application of effective parenting practices. Higher education fosters motivation to take preventive and responsive actions, ensuring access to nutritious food and healthcare services. Educated parents are also more likely to provide strong emotional and instrumental support, thereby creating a supportive home environment. As emphasized by Budiarti et al. (2022), higher education enhances access to health resources and information, enabling better-informed decisions that promote child

health and well-being.

In contrast, economic factors presented challenges. The majority of parents had incomes below the regional minimum wage, specifically less than IDR 2,893,069. Low income limits access to nutritious food, healthcare services, and educational opportunities (Lestari et al., 2022). Financial hardship reduces the capacity of families to provide instrumental support, thereby restricting the fulfillment of basic needs and increasing the risk of stunting, which in turn adversely affects children's quality of life. Thus, income remains a critical determinant of a family's ability to support child growth and development.

The study further identified different dimensions of family support. Emotional support, expressed through affection and warmth, fosters a sense of security and prevents negative emotions such as anxiety, sadness, and inferiority. Appreciation support, manifested in praise and positive reinforcement, motivates children to maintain enthusiasm for school and healthy eating habits, reinforcing their emotional well-being. Instrumental support, such as providing adequate nutrition and accessing healthcare, was found to be less optimal in some families, particularly when fathers were less involved in health-seeking behaviors. Informational support was also lacking, as many families had limited knowledge of stunting, which influenced their caregiving practices and contributed to poor outcomes.

Statistical analysis confirmed the importance of family support. A significant association was found between family support and quality of life, with children from families providing strong support being 65.9 times more likely to experience a good quality of life than those from families with insufficient support (OR = 65.909, $p < 0.001$). Adequate family support ensures proper nutrition, access to healthcare, and emotional well-being, while also promoting early stimulation through educational play and positive interactions. Multivariate analysis further identified parental education as a confounding factor, with higher education positively influencing both family support and child outcomes ($p = 0.011$). Families with limited knowledge and awareness of stunting were less capable of providing consistent support, ultimately contributing to poor quality of life in affected children.

Strengths and limitations

This study provides valuable insights into the association between family support and quality of life in preschool children with stunting by examining multiple dimensions of support—emotional, appreciation, instrumental, and informational—within a community-based setting. The use of validated instruments, namely the Family Support Questionnaire and the Pediatric Quality of Life Inventory (PedsQL), strengthens the reliability of the findings. Furthermore, including all eligible respondents through total sampling enhanced representativeness within the study area. However, several limitations should be acknowledged. The cross-sectional design restricts causal inference, as relationships identified cannot confirm directionality. The study was also limited to one district, which may affect generalizability to other populations with different cultural, economic, or healthcare contexts. In addition, self-reported data may have been subject to recall or social desirability bias, potentially influencing responses regarding family support and child well-being. Future research using longitudinal or mixed-method designs across broader populations is recommended to build on these findings.

CONCLUSION

This study found that the majority of respondents were female, had attained higher education, and reported incomes below the regional minimum wage. Nearly half of families demonstrated low levels of support, and more than half of children with stunting experienced poor quality of life. Statistical analysis revealed a significant association between family support and children's quality of life, with parental education emerging as the most influential factor. Higher education was linked to stronger family support and better child outcomes, while older parental age contributed to greater emotional regulation and nutritional understanding. In contrast, low income limited access to essential resources, thereby hindering stunting prevention. These findings underscore the importance of strengthening family support systems and improving parental education as critical strategies to enhance the quality of life of preschool children with stunting.

Declaration of Interest

The authors declare no conflicts of interest.

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Data Availability

None

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