

ORIGINAL ARTICLE

Impact of Parent's Education on Stunting of Children Age 6-59 Months in Tertiary Care Centre Hyderabad, Sindh

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**ABSTRACT**

Background: Stunting is a severe public health issue in all of Pakistan, especially in Sindh, where a considerable number of children < 60 months are impacted by chronic malnutrition. Educating the parents is recognized as a critical factor of positive child growth and appropriate nutrition.

Aim: This study Aimed to statistically determine the relationship of parent's education and child stunting.

Methods: A cross-sectional study design was used for the study for the purpose of this study. Data was collected over a time period of October 2023 to March 2024, setting was Hyderabad and the participant children were aged between 6-59 months, totalling to 422. Data collection used nonrandom purposive sampling technique. Body measurements were taken following the anthropometric standards as per WHO for stunting determination i.e., height-for-age Z p < 2 SD. A questionnaire regarding education of the parents was administered and Chi-square tests were used to measure variables. Statistical significance was determined at p ≤ 0.05.

Results: Out of the 422 children surveyed, 173, or 41%, exhibited stunted growth. However, no significant relationships were established regarding stunted growth and the mother's formal education level (p = 0.628), informal education (p = 0.279), or whether the mother was literate (p = 0.493). The same holds true for fathers: their lack of formal education (p = 0.497), informal education (p = 0.297), or literate status (p = 0.297) and their children's growth. Even though stunted growth was more prevalent among children whose parents had lower levels of education, the statistical significance of the data was weak.

Conclusion: The absence of significant relationships among the different education levels of the parents and stunted growth shows that there may be other more dominant reasons impacting the child's growth. These reasons may be attributed to the family's low income, unstable food supply, poor household sanitation, and lack of improved healthcare.

Recommendations: To minimize the prevalence of stunted growth, it is advised that there be improved multi-sector collaboration for nutrition education, poverty reduction, support for caregivers, and better health services. Community and health facility parental education initiatives are advised.

Keywords: Poverty, diseases, health, children, stunting, and Pakistan.

INTRODUCTION

Stunting is one of the main health issues in Pakistan because of the under-nutrition of children. National Nutrition Survey in Pakistan 2018 indicated that 40.2% of under 5 children in Pakistan are stunted and in Sindh province the prevalence of malnutrition is among the highest in the country.¹ Stunting results in negative physical and cognitive ability development of affected children, and impacts on poor academic and economic productivity in the future.²

Education of parents is one of the primary factors that determine the nutrition children receive. More educated parents are more likely to adopt good dietary practices, seek and use health services, improve and maintain environmental sanitation, and use educational stimulation. Still, there are some places where there is a stunting prevalence that is contrary to the level of education of parents, and these may be because of the socio economic, cultural, and environmental factors.³

This is a study on the stunting of children that is associated with the educational level of parents who come to the Paediatric OPD of Liaquat University Hospital, Hyderabad, a key Tertiary Care Hospital for the rural and urban mix population. These studies will provide useful information for planning interventions aimed at the reduction of stunting in the area.

Research Question: How do maternal education, paternal education, maternal age, and parental occupation impact young children's stunting?

Significance of the study: One of the most severe public health issues in Pakistan and Sindh in particular, stunting and significant childhood nutritional deficits, have dire consequences for physical and cognitive development, educational achievement, and economic productivity throughout the life course. The impact of education, especially maternal, and literacy, as well as informal educational levels of parents, on the nutritional status of children is the main focus of this study. Understanding the relationship between stunting and low maternal or paternal education levels enables policymakers and practitioners to prioritize parental education, awareness, and communication for change, especially stunting in children. This information is particularly pertinent for community health initiatives, particularly in Lady Health Worker programs, nutrition counseling, and early childhood development.

Literature review: Stunting as defined the impaired linear growth that results from chronic under-nutrition, continues to be one of the most severe worldwide public

health issues affecting children under the age of five. The World Health Organization also defines stunting as the long-term nutritional deprivation, recurrent infection, and malnutrition that results in the impaired growth of a child both physically and cognitively.⁴ The problem of stunting in the world is most severe in low and middle income countries (LMIC) where growing structural inequities, food shortages, and the deteriorating health of mothers are the most significant cause of the stagnation of growth.⁵ In order to design effective strategic interventions, the stunting issue, should be analyzed and especially the demographic and socio-economic and environmental factors that stunting has]. is the most severe in low and middle income countries (LMIC) where structural inequalities, food anxiety, and poor maternal health deteriorating health of mothers stagnation of growth.

As of 2020, a total of 149 million children stunted in all countries of the world under the age of five are South Asia and has the most stunted children in the age and has the most stunted children in the age.⁶ In South Asia, low maternal education, poverty in the home, early marriage and poor nutrition to children has been linked to high prevalence of stunted children in the home.⁷ Pakistan has one of the most stunted children in the world and surveys in the past have shown there is 37-40% stunted and there have been 37-40% stunted over the past decade.⁸ IN case there is 37-40% stunted. However, there is stunted and there have been stunted over the past decade. However, there is stunted and there have been stunted over the past decade.⁹ However, there is stunted and there have been stunted over the past decade. However, there is stunted and there have been stunted over the past decade.¹⁰ However, there are still These challenges in the countries as multiple national programs There have been multiple national programs. Progress is slow, indicating there is a gap in poorly designed public policies, community nutrition education and a lack of sloth in nutrition education.¹¹

Among maternal factors, maternal malnutrition, pre-pregnancy low body mass index (BMI), anemia, and insufficient weight gain during pregnancy are related to fetal growth restriction and subsequently stunting.¹² It has also been indicated that the mother's education level is an important determinant of child health outcomes. Educated mothers are more likely to adopt the recommended feasting practices, use health services, and keep the household environment hygienic. Maternal nutrient depletion due to short birth intervals and high parity result in poor infant outcomes as well.¹³

Infant and Young Child Feeding (IYCF) practices enlarge the scope of maternal factors to consider. Initiating breastfeeding early, exclusively breastfeeding

for the first 6 months and timely introduction of complementary foods are important for improving growth in early childhood. Insufficient complementary feeding in quantity or low nutrient density has been linked with stunting in Pakistan and other LMICs.¹⁴ Moreover, insufficient dietary diversity is an important determinant of chronic undernutrition in food insecure households. Studies also emphasize that this poor dietary diversity is a central issue.

Some major causes of stunting include some of the environmental and health factors. Poor water quality, insufficient sanitation, and more hygienic practices all contribute to the greater incidence of environmental EED, which entails other diseases, and diarrhea malabsorption.¹⁵ Studies conducted in rural areas of Bangladesh and Pakistan show that children from households with no access to safe drinking water and improved sanitation and sewage disposal systems are more likely to suffer from stunting due to nutritional deficiency caused by chronic infection, and inflammation and EED.

The socioeconomic factors have more power in determining the overall conditions in which the child will grow. Household level determinants include income, food security, health care service availability, and social support systems that affect maternal and child nutrition. As such, poverty in all of its manifestations, is a major barrier to food diversification and nutrition, and access to health care, which is a major barrier to seeking health care.¹⁶ Numerous studies have reported that children from the household and family systems of the lowest socioeconomic status are considerably more likely to be stunted than their counterparts from the households and families of the higher socioeconomic status.

MATERIAL & METHODS

Study Setting and Population

This study was conducted in the Department of Paediatrics of Liaquat University Hospital, Hyderabad, Sindh. Liaquat University Hospital is a tertiary care and a teaching hospital that attends to and serves diverse and heterogeneous communities from both urban and rural backgrounds.

Study Population: Children aged 6-59 months seen in the Paediatric Outpatient Department during the study period met the inclusion criteria and were eligible for enrollment and participation.

Study Duration: Data were collected and documented over a period of 6 months, specifically from October 2023 to March 2024.

Inclusion criteria: Children aged 6 to 59 months attending the Outpatient Department.

Both males and females.

At least 6 months of living in Hyderabad's rural and urban.

Exclusion criteria

Children who are ill in a chronic or severe way.

Children who are ill in a chronic or severe manner.

Children whose parents do not consent.

Sample Size Estimation:

Utilizing the formula:

$$n = z^2 p (1 - p) / d^2$$

$$z = 1.96.$$

$$p = 0.516.$$

$$d = 0.05.$$

There was a minimum of 385 in the sample size required, and 422 children were included.

Sampling Technique

Purposive sampling in a unrandom way. Every eligible child who was visiting the OPD was approached.

Ethical Permission

This is data collected from a study that is submitted for a Master's in Public Health in 2024. Ethical approval was obtained through the Institutional Review Board.

Statistical Analysis:

Data was analysed using SPSS. Chi-square tests were used to assess the association of parental education variables and stunting. A p-value of 0.05 or less was considered significant.

RESULTS

A total of 422 children were evaluated of which 173 (41%) were stunted, and results presented in tables showed:

1. Maternal basic education: No association ($p = 0.628$).
2. Maternal highest educational attainment: Not significant, but higher stunting were reported in no formal education ($p = 0.105$).
3. Maternal informal education: No association ($p = 0.279$).
4. Maternal literacy: No association ($p = 0.493$).
5. Paternal basic education: No association ($p = 0.497$).
6. Paternal highest educational attainment: No association ($p = 0.349$).
7. Paternal informal education and literacy: No association for both ($p = 0.297$).

As a whole, there were no educational variables of both parents that were found to be associated with stunting in children.

Table 1: Association of Parents education and stunting among children aged from 6 – 59 months

Variables (n=422)	Stunting		p
	Present n (%)	Absent n (%)	
Maternal Basic Education			
Yes	91 (42.1)	125 (57.9)	0.628
No	82 (39.8)	124 (60.2)	
Maternal Highest Grade Completed			
Primary	52 (36.5)	90 (63.4)	0.105
Secondary	28 (50)	28 (50)	
Higher Secondary	11 (61.1)	7 (38.9)	
Nil	82 (39.8)	124 (60.2)	
Maternal Informal Education			
Yes	101 (42.4)	137 (57.6)	0.279
No	72 (39.1)	112 (60.9)	
Maternal Ability to Read and Write			
Yes	101 (42.4)	137 (57.6)	0.493
No	72 (39.1)	112 (60.9)	
Paternal Basic Education			
Yes	149 (40.4)	220 (220)	0.497
No	24 (45.3)	29 (54.7)	
Paternal Highest Grade Completed			
Primary	68 (36)	120 (64)	0.349
Secondary	55 (44.3)	69(55.7)	
Higher Secondary	26 (45.6)	31 (54.4)	
Nil	24(45.2)	29(54.8)	
Paternal Informal Education			
Yes	149 (40.3)	220 (59.7)	0.297
No	24(45.2)	29(54.8)	
Paternal Ability to Read and Write			
Yes	149(40.3)	220(59.7)	0.297
No	24 (45.2)	29 (54.8)	

DISCUSSION

This study sought to determine stunting and its association with parental education in children aged 6 to 59 months. Contrary to expectations, and based on worldwide evidence, there was no association found of stunting with maternal or paternal education. This finding differs from other studies in the world which find maternal education to be a significant predictor of child nutrition.

Some reasons for this may be:

1. Educational homogeneity of the sample: Public sector hospitals are primarily the institutions of lower socio-economic strata, and families access the public sector hospitals due to significant socio-economic disadvantage. The educational disadvantage also economically dominates.
2. The Influence of Living Standards: Overcrowding, unsafe water, and inadequate sanitation in an area may be the more critical factors overshadowing education.

3. The Influence of Culture: Educated parents may adhere to culturally traditional misguided feeding practices.
4. The Influence of Health: The educational level of the parents may lose value because of the delay of seeking care or irregular attendance to follow-up visits.

The collected evidence implies that background factors, more than parental education, are fundamental in explaining the stunting observed in this context.

RECOMMENDATIONS

1. Increase the focus of nutrition counselling in outpatient departments, particularly concerning mothers of young children.
2. Create community-based initiatives to educate on breastfeeding, adjunct feeding, and hygiene practices.
3. Work on improving the WASH (water, sanitation, and hygiene) of the population to help mitigate infection-related growth faltering.
4. Social protection programs for low-income families with an emphasis saving on food.
5. Promote literacy among parents, especially in rural areas.
6. Nutritional service integration with maternal and child health care.

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