



TO ASSESS THE PREVALENCE OF STUNTING, WASTING AND UNDERWEIGHT AND IDENTIFY LEADING CAUSE RELATED TO STUNTING, WASTING AND UNDERWEIGHT AMONG CHILDREN UP TO 2YEARS IN SELECTED AREAS OF PUNE REGION

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Abstract

Background/ Significance: The first 2 years of life are important for establishing health over the life course. Stunting, or low height for age, is caused by long-term insufficient nutrient intake and frequent infections. Stunting generally occurs before age two, and effects are largely irreversible. Wasting, or low weight for height, is a strong predictor of mortality among children under five. Underweight may occur when energy expenditure is greater than intake. Most of the data available is concentrated around children up to 5years. This pilot study looked into prevalence, causes of stunting, wasting and underweight also feeding practices of children up to 2years for feasibility of a final study.

Methods and result: This quantitative, non-experimental explorative study focused on under 2years children's status in weight, height and MUAC (Mid Upper Arm Circumference) and nutritional factors leading to underweight, wasting and stunting. Administered a validated instrument to 100 mothers of under 2year old children in selected areas of Pune region. Information collected using questionnaire developed by investigator, after taking consent from mothers. Height/length, MUAC and weight of 100 babies were measured. The questionnaire was used to elicit awareness regarding feeding practices and self-reported practices of feeding practices to elicit causative reasons of the problem under study which showed 73% of mothers had average score on nutritional factors predicting stunting, wasting and underweight and 73% had reported appropriate feeding practices. Underweight is observed mostly among 13-24months (16%). Stunted children are maximum seen in 13-24month children (19%). MUAC showed most of the children are well nourished as per MUAC. But 6% children of 7-12months showed SAM. On finding association of selected demographic variables, MUAC is significant. Association of family information selected demographic variables, it was found that Access to health care facility and method of disposal of waste were significant and significant variable which has found to have association with stunting, underweight and wasting are age of mothers and number of children. One of the important causative factors came out of this study is delay in adding nutritious complimentary feeding or age-appropriate dietary inclusion.

Conclusion: Pilot study has provided the adequate and accurate information regarding data collection strategy need to be adopted for final study. Since small sample size, even though a trend of prevalence is seen and major causative factor identified from the data analysed in this study, findings may vary in final study with larger sample.

Keywords: Stunting, Wasting, Underweight, Feeding Practices.

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1. Introduction

Every single minute matters, every single child matter, every single childhood matters. *Kailash Satyarthi, Nobel Peace Laureate 2014*. The early years of a child's life are very important for his or her health and development. Healthy development means that children of all abilities, including those with special health care needs, are able to grow up where their social, emotional and educational needs are met. Having a safe and loving home and spending time with family—playing, singing, reading, and talking—are very important. Proper nutrition, exercise, and sleep also can make a big difference.¹ Malnutrition harms health throughout life, but its early emergence has particularly harmful consequences.² Malnutrition in its many forms has previously been understood and approached as a separate public health issue, but the new emergent reality is that undernutrition and overnutrition are interconnected and, therefore, double-duty actions that simultaneously address more than one dimension must be implemented for policy solutions to be effective.³ Malnutrition contributes to more than one-third of all under-five deaths. One in every three malnourished children in the world is from India is a bothering question. Major factors which modulate nutritional status during early childhood include birth weight, infant and young child feeding practices, morbidity due to infections, treatment of infections, nutrition care during infection and convalescence.⁴ Progress for Children is a statistical publication. But each statistic represents the lives of individual children, many of them blighted by ill-treatment or a lack of opportunity. Behind every one of these statistical assessments is a vision of a world in which children are healthy and reach their full potential, in which they are protected from disease and abuse – a world in which children's rights across the board are fully realized.⁵

Need of the Study

According to the National Family Health Survey (NFHS)-5, India has unacceptably high levels of stunting, despite marginal improvement over the years. In 2019-21, 35.5 per cent of children below five years were stunted and 32.1 per cent were underweight. Stunting also has lasting effects on future generations. The situation worsens when infants are fed inadequate diets⁶. Wide literature review and the prevailing situation in India, in regard to malnutrition specially to undernutrition is not progressive. With various schemes and programs for improving the health status of mothers and children, there is no sign of improvement. Researcher has observed in field that, policy makers vision is not translated into action, which can yield result. Each child is born into newer environment.

Socioeconomic factors, information available, attitude towards child's health plays a vital role in decision making on choice of food and in turn it affect the quality of nutrients available to the child. Despite strong policy and various programmes, child's nutrition services are not reaching enough children in many countries. It is imperative to examine multifactorial determinants (personal, family, community, and health services) associated with child nutrition practices and its influence on growth and development. The prevalence of stunting, wasting and underweight are indicators of child's health among the population. NFHS V has pointed out these lapses and further studies are vital to strengthening measures to ensure healthy child. It needs to be studied using various approaches, so that further factors can be identified and improvement can be made. This study is an attempt to identify prevalence of stunting, wasting and underweight up to 2years children, which is not highlighted much in the literature. But this age group need s additional attention as the damages done at this developmental stage can be permanent and it can affect the society in long run.

Aims of the Study

To asses prevalence of stunting, wasting, and underweight and identify leading causes of the same.

2. Research Methodology

The design adopted for this study was simple exploratory descriptive survey design. Here in this study, it examines, the prevalence and causative factors of stunting, wasting and underweight among children up to 2years. Sample: Children up to 2years. Sample size: 100. Sampling Technique: Nonprobability, Purposive sampling. **Tool:** Part-I - Demographic Performa: -Childs information, mothers' information and Family's information. Part - II – A structured Questionnaire on nutrition Factors based on predictors of stunting, wasting and underweight: A multiple choice questionnaire of 15 questions out of which one question is an open-ended question. Part III: Self reported practices on Child feeding: this tool consists of items which elicit the best practices which will contribute to healthy nutrition. The tool is in yes/no form. Part IV: Self-reported history of food given to the child, which collects data on type of food given at the time of data collection and amount. Part V: Assessment of -weight, Height/length and MUAC. For weight, height/length and MUAC respective measurement scales were purchased: -Weighing machine -for measurement of weight of the baby, Infanto meter - height/length of the baby and MUAC tape: for measuring Mid Upper Arm Circumference of the child (Above 06 months). Reliability: The "Test-

retest method” by using “Karl Pearson’s formula” is used to check the reliability of the prepared tools. The reliability of the questionnaire was calculated by “KARL PEARSON CORELATION COEFFICIENT” formula. According to Karl-Pearson Correlation Coefficient if “r-value” is more than +0.70 then the tool is reliable. Investigator calculated for questionnaire on Nutrition Factors based on predictors of stunting, wasting and underweight tool. “R-value = + 0.9848”. Investigator calculated for self-reported Child Feeding practices . “R-value = + 0.9704” .Post establishment of reliability of tool , a pilot study was conducted on 100 samples. The result of the pilot study is discussed further.

3. Result

Data collection started on 2 October 2022 and ended on 6 Oct 2022.Areas selected were Ganesh Nagar, Upper Indira nagar, Pune, Super upper Indira Nagar, Pawan Nagar, super Upper Area, Pune and Khurduwadi, Khed shivapur . These areas were selected as they are part of selected areas of Pune region, setting of the study. This includes urban and rural areas of the research setting. Samples were selected as per criteria set, using purposive sampling. A total of 100 samples were included in the assessment. The families of these areas were approached and explained the purpose of the study and those mothers who were willing, consent was taken and the study carried out. Snow ball technique was used to find out about more samples. Most of

the mothers were able to read and write and could answer the questions. Following this height/length, MUAC and weight of the babies were measured with the help of mothers or care takers. Families were very cooperative and was able to carry out collection of data for pilot study without any difficulties. Maximum number of children belonged to the age group of 13-24 Months (51%). 56% of children studied were females.85%babies were born full-term. Birth weight of 64%of children were 2-3kg. It is also observed that 49%of the children were second born.65%of children were fully immunized as per age.95%of children was not hospitalized anytime. No history of recent illness in children, especially diarrhea and ARI were 95%.50%of mothers belonged to the age group of 26-30years of age. Most of the mothers surveyed were having 2 children (49%).40%of mothers were educated up to 12th std and 88%of them were housewives. Most(44%) of the families belonged to a category) total monthly income of Rs 6175-18496.Water source of all families were from respective local bodies. All houses had a toilet facility.71% of families were using fridge to store fresh items and remaining food. Most (71) of the families ate a vegetarian diet in the past 24hoursof data collection, which included a cereal, pulses and any vegetable available.83%of families accessed health care from any nearby hospital.40%of families had at least 5 members in the family. Waste disposal, families use facilities provided by local governing bodies (Municipal corporation/gram panchayat).

Prevalence of stunting, wasting and underweight

Prevalence of underweight Table I A N=100

Weight of child	Frequency	Percentage	Mean	SD
Normal	72	72	8.5	2.18
Underweight	28	28	8.5	2.18

28% Children were found to be underweight

Prevalence of stunting Table I B.

Height of child	Frequency	Percentage	Mean	SD
a. Normal	74	75	68.3	15.7
b. Stunted	26	25	66.86	17.03

25%children were stunted.

Prevalence of wasting Table I C.

MUAC of child	Frequency	Percentage	Mean	SD
a. GPM	13	13	14.78	8.64
b. MAM	2	2	13.45	4.83
c. SAM	2	2	14.93	10.72

d. Well-Nourished	83	83	14.77	8.37
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After assessment of MUAC it was found that there were 13% of children is at risk for acute malnutrition and categorised as GPM (Growth Promotion and Monitoring) There were 2% children each in SAM

(Severe acute malnutrition) and MAM (Moderate acute malnutrition) category .83% children were well nourished.

Table II Nutrition Factors based on predictors of stunting, wasting and under weight N=100

Score	Frequency	Percentage
Poor	18	18
Average	73	73
Good	9	9
Mean	7.1	
SD	2.99	

Assessment of Nutrition Factors using questionnaire showed 73% of mothers had average score. 18% were

having poor score and only 9% had good score about these nutrition factors.

Table III Feeding practices of children N=100

Self-Practice	Frequency	Percentage
Poor	12	12
Average	13	13
Good	75	75
Mean	10.3	
SD	4.01	

Most of the mothers were following good practices (75%) but 12% of them had reported poor practices.

Table IV Comparison of stunting, wasting and underweight among children and factors contributing to the same. N=100

Parameters	Age Group		
	1-6 Months	7-12 months	13-24 Months
1. Weight (kgs)			
a. Normal	13 (13%)	23 (23%)	35 (35%)
b. Underweight	3 (3%)	10 (10%)	16 (16%)
2. Height/Length (cm)			
a. Normal	9 (9%)	31 (31%)	32 (32%)
b. Stunted	7 (7%)	2 (2%)	19 (19%)
3. MUAC			
a. GPM	0 (0%)	1 (1%)	6 (6%)
b. MAM	0 (0%)	0 (0%)	1 (1%)
c. SAM	0 (0%)	6 (6%)	1 (1%)
d. Well Nourished	16 (16%)	21 (21%)	0 (0%)

As per table above it's found that, underweight is observed most among 13-24months (16%) Stunted children are maximum seen in 13-24month children. (19%) Most of the children are well nourished as per MUAC. But 6%children of 7-12months showed SAM.

4. Discussion

Many researches available have shown that nutrition related health problems in children under five years is a magnanimous burden on health system and economy of the country. This study intended to find out the prevalence and causative factors contributing to stunting, underweight and wasting among children up to 2 years. It was observed that overall prevalence of stunting among children under two years was 25% children were stunted, wasting was 17% and 28% Children were found to be underweight. This study tried to find out about nutrition factors like practices on child feeding along with various contributing factors about child's health, mothers' outcome of delivery, familial factors and environmental factors which can be a major contributing factor for effects of undernutrition like stunting, wasting and underweight. Maximum number of children belonged to the age group of 13-24 Months (51%). 56% of children studied were females. 85% babies were born full-term. Birth weight of 64% of children were 2-3kg. It is also observed that 49% of the children were second born. 65% of children were fully immunized as per age. 95% of children was not hospitalized anytime. No history of recent illness in children, especially diarrhea and ARI were 95%. 50% of mothers belonged to the age group of 26-30 years of age. It's been observed along with various nutrition factors that various other factors related to children and mothers too contribute to stunting, wasting and underweight. Most of the mothers studied were only educated up to 12th std (40%). Which affected mothers' awareness and mind to practice correct feeding practice for children. Assessment of Nutrition Factors using questionnaire showed only 9% had good score. On assessing feeding practice of children by mothers it was found that 12% of them had poor practices. These two data indicate the effect of feeding on child's weight, height and MUAC and in turn points to stunting, underweight and wasting. Children under 2 years require lot of attention and meticulous care by mother and family members, specially while feeding the child, as nutrition plays a vital role in determining their health which can lead to exhibiting problems of stunting, wasting and underweight. This age group also undergoes a transition from exclusive breast feeding to complimentary feeding along with breast feeding. But many children fail to obtain

adequate nutritious, energy rich food and delayed initiation of complimentary feeding and this leads to undernutrition. There were families who were feeding children commercial baby products (cerelac) as mothers feel, baby is not consuming household food. Lower the socioeconomic status higher is the risk of undernutrition.⁷ Most (44%) of the families belonged to a category) total monthly income of Rs 6175-18496/. These families belong to lower middle class⁷ With the improvement in socioeconomic status undernutrition proportionately declines⁸

5. Conclusion

The child rearing practices which are in place are time immemorial. In spite of all care and concern towards well-being of children has not yielded the fruit it must. Indicators of health are reflection of health of a country's children. Over the years there has been various standards and measures in place to drive Child's health to optimum. Global efforts are to keep children healthy, as they are the future of each country. It's always imperative to keep a watchful track of health of children. Over the years it has proven that any number of policies and programs by various agencies and intense research into health of children still needs a large push. Problems related to growth and development are directly linked to nutrition and multiple factors of the kind. It's been observed many of the mothers participated are not able to follow required quality nutritive diet. It's to be noted that time and again many programmes are implemented. But there is a gap in information disseminated and practiced. Even though this problem mostly addressed using multiple approaches, still need improvement in attitude of mothers, families and community towards improving nutrition of children of this age group. This problem untreated won't improve the health of children and indicators fail to improve.

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