Assessment of Nutritional Status of Children (3-5 Years) and Seek its Association with their Mother's Knowledge on Nutritional Requirements of Children

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Abstract: *Nutritional status during early years of life can have profound effect on child's health status, ability to learn, and their cognitive behavior. And the mothers are the primary care providers of their children. The study was conducted by the researcher in order to assess the nutritional status of children (3-5 years) and seek its association with their mother's knowledge on nutritional requirements of children and to assess its association with their selected demographic variables. The sample consisted of 60 children and their mothers, by using purposive sampling technique, and random sampling technique (lottery method) for selecting those children whose mothers having more than one child with the same age group 3-5 years. Structured knowledge questionnaire was used to assess the level of knowledge of mothers and nutritional status of children were assessed by anthropometric measurements and categorized based on WHO z-score system. The results revealed that in nutritional status for weight for age 10(17%) children were undernourished, height for age 25(42%) and 8(13%) children were moderate and severe stunting, weight for height 16(27%) had moderately wasting, MUAC 21(35%) and 22(37%) were moderate and severe undernourished respectably. There was significant association between the level of knowledge of mothers and nutritional status of children only for height for age at 0.05 level of significance. Age, religion and family income, had significant association with level of knowledge of mothers at 0.05 level of significance but there was no association with respect to other variables. There was significant association between the nutritional status of children and demographic variable i.e. exclusive breast feeding for weight for age at 0.05 level of significance. Research findings revealed that majority of mothers had average knowledge regarding child's nutritional requirements and nutritional status of children varies as normal, undernutrition, stunting and wasting.*

Keywords: Mother's, children, knowledge, nutritional status, urban slum area

1. Introduction

Nutritional status has a vital role in the physical and mental development of the children. Healthy babies are future wealth of nation. Life can be sustained only with adequate nourishment. Growth and development in human beings start at the moment of conception and are continuous processes. Growth increase rapidly in early childhood especially in the first 5 years of life[ii].

The effects of under nutrition on young children can impede physical, behavioral and cognitive development and reproductive health in future. Nutritional status during their early years of life can have profound effect on their health status, their ability to learn, communicate, think analytically, socialize effectively and adapt to environments in later stage of life[iii].

India continues to be home for 46% of malnourished children of the world and more than 5000 children die every day from malnourishment. India ranks 65th out of 79 countries according to a global hunger index survey 2013[iv].

Motherhood can be defined as the biological process of giving birth and exercising control over responsibility of young ones. The important task of motherhood is to fulfill physical, emotional, social, intellectual and moral needs of the children. Study shows that mothers are ignorant about correct feeding practices, lack of correct knowledge about nutritional diet, wrong beliefs, lack of education, and lack of parent's care during wellness and illness of their children[v].

As per study conducted in 2011 to assess the Mothers knowledge on nutrition of under five children and prevalence of nutritional problem among their children, result shows that mothers had inadequate knowledge on nutrition of their under five children and 1.67 % of the mothers had adequate knowledge. High prevalence of clinical signs of nutritional problems was observed in the children as lack of luster in (70%), pale conjunctiva (55%), angular stomatitis (26.6%), and mottled enamel (53.3%) of the under five children. This knowledge about nutrition of the mother directly affects nutrition condition of the family[vi].

2. Material and Methods

60 Children (3-5 years), and their mothers of urban slums area of delhi were included using Purposive sampling technique but if there were more than 1 child with the same age group (3-5 years) simple random sampling (lottery method) was used. Structured Knowledge questionnaire consisting of 30 multiple choice questions with four options to assess the knowledge of mothers on nutritional requirements of children. Weighing machine, steel inch tape, pediatric inch tape were used to measure Anthropometric parameters of children (weight, height, and MUAC). Criteria for grading of nutritional status of children based on WHO z-score system, done as follows: **Nutritional status by**

using z-score marking - Above normal (> + 2 z-score), Normal (+2 to -2 z-score), Moderately below normal (-2 to -3 z-score), Severely below normal (> -3 z-score).

The reliability of the structured knowledge questionnaire was established by split half method. The reliability obtained was 0.80 which proved the effectiveness and efficiency of the tool and

Reliability of weighing machine, steel inch and pediatric inch tape was established by inter- rater-inter- observer method using Karl Pearson correlate co-efficient. The reliability obtained was 0.9. The values were found to be reliable.

3. Data Collection Procedure

Data collection was done after taking written informed consent from the mothers by using structured knowledge questionnaire and the Antropometric measurement was done for the children to assess the nutritional status with the help of weighing machine, steel inch tape, and pediatric inch tape.

4. Result and Discussion

The present study pointed on association of nutritional status of children (3-5 years) and their mother's knowledge on nutritional requirements of children in a selected urban slum area of Delhi. The present study depicts the nutritional status of the children (3 to 5 years) based on the WHO z-score system. It was found that, weight for age (17%) of children moderately nourished, height for age (42%) moderately stunting, weight for height (27%) moderately wasting and MUAC (35%) moderately nourished category. And height for age (13%) severely stunting, weight for height (3%) severely wasting and MUAC (37%) severely nourished category.

The present study findings are also consistent with cross-sectional study conducted by Chataut J, KhanalK.[vii] in Dolakha and Kavre districts of Nepal for assessing the nutritional status of under-five children a. A total of 243 under five children were included in the study from two purposively selected village. Statistical Package for the Social Sciences (SPSS) 22 Version and ENA Software Version 2011 were used for analyzing the data. Out of 243 children, according to WHO z-score system, weight for height 17 (7.0%) were wasted, height for age, 97 (39.9%) were stunted and weight for age, 46 (18.9%) were underweight.

The present study was to assess the level of knowledge of mothers on nutritional requirements of children. More than half (55%) of the mother had average knowledge, (32%) had poor knowledge and (13%) had good knowledge.

The above inference are consistent with the study conducted by Shettigar D, Ansila M, George M, Chaco J, Thomas RJ, Shukoor S.[viii] In 2013 to assess the knowledge level of mothers regarding common nutritional problems of under-five children and its prevention. The results of the study shows that more than half of mothers (54%) had poor knowledge, around (38%) had average knowledge, and only (8%) had good knowledge regarding the common problems and its prevention.

The present study also focused on the association between nutritional status of children and their mother's knowledge on nutritional requirements of children. There was no significant association found between nutritional status of children and the level of knowledge of mothers, except height for age category.
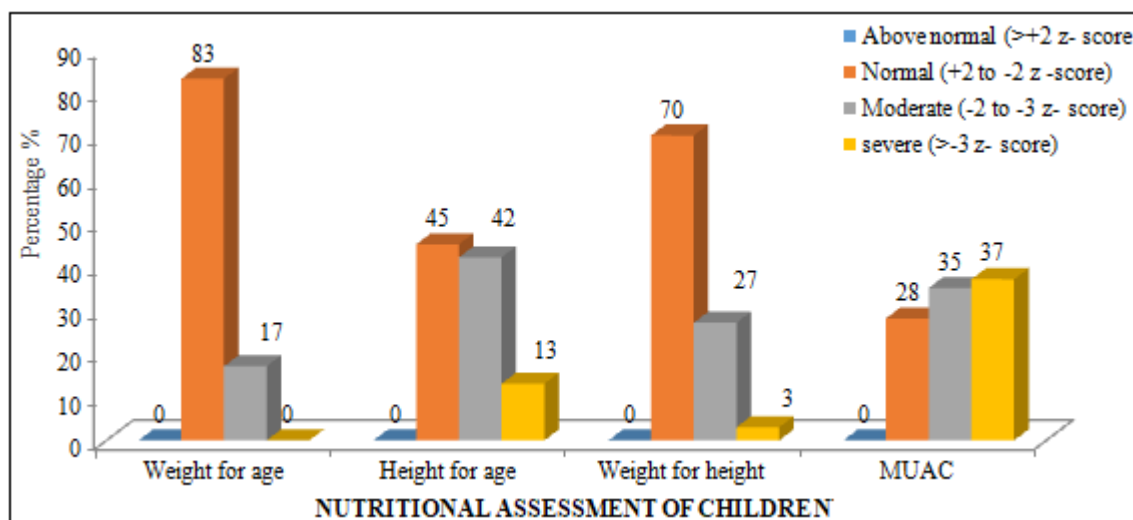
Table and Figure

Figure 1: A Bar diagram showing percentage distribution of nutritional status of Children

Out of 60 children, **weight for age:** Majority of children 50(83%) were in normal category (+2 to -2 z-score), 10(17%) were moderately nourished category (-2 to -3 z-score), and none of the children were above normal (>+2 z-score) or severely undernourished (> -3 z-score) category.

Height for age: Majority of the children 27(45%) were in normal category (+2 to -2 z-score), 25(42%) were moderately stunting category (-2 to - 3 z-score), 8(13%) belongs to severely stunting (> -3 z-score) category, none of the children were above normal (>+2 z-score) category.

Weight for height: Majority of the children 42(70%) were in normal category (+2 to -2 z-score), 16(27%) were in moderately wasting category (-2 to -3 z-score), 2(3%) were in severely wasting (> -3 z-score) category, and none of the children were in above normal (> +2 z-score) category.

MUAC: Majority of children 22(37%) were in severely undernourished (>-3 z-score) category, 21(35%) were in moderately nourished category (-2 to -3 z-score), 17(28%) of children were in normal category (+2 to -2 z-score) and none of the children were in above normal (>+2 z-score) category.

Table 1: Frequency and Percentage distribution of level of knowledge of mothers on nutritional requirements of children, n= 60

Knowledge scores	Range of knowledge scores	Frequency distribution (F)	Percentage (%)
Good	21-30	8	13%
Average	11-20	33	55%
Poor	0-10	19	32%

Out of 60 mother, Majority of mothers 33(55%) had average knowledge on nutritional requirements of children, 8 (13%) of Mothers had good knowledge on nutritional requirements of children, and 19(32%) had poor knowledge on nutritional requirements of children.

Table 2: Association between nutritional status of children and level of knowledge of mothers, n = 60

Nutritional status of Children	Knowledge of mothers			Fisher's exact test	p-value
	Poor	Average	Good		
WEIGHT FOR AGE					
Above normal (>+2 z-score)	0	0	0	2.303**	0.708
Normal (+2 to -2 z-score)	15	29	6		
Moderately nourished (-2 to -3 z-score)	4	4	2		
Severely undernourished (>-3 z-score)	0	0	0		
HEIGHT FOR AGE					
Above normal (>+2 z-score)	0	0	0	10.234*	0.0367
Normal (+2 to -2 z-score)	4	17	6		
Moderately wasting (-2 to -3 z-score)	10	14	1		
Severely wasting (>-3 z-score)	5	2	1		
WEIGHT FOR HEIGHT					
Above normal (>+2 z-score)	0	0	0	0.767**	0.789
Normal (+2 to -2 z-score)	12	25	15		
Moderately wasting (-2 to -3 z-score)	5	8	3		
Severely wasting (>-3 z-score)	2	0	0		
MUAC					
Above normal (>+2 z-score)	0	0	0	4.182**	0.39
Normal (+2 to -2 z-score)	2	13	2		
Moderately nourished (-2 to -3 z-score)	7	11	3		
Severely undernourished (>-3 z-score)	10	9	3		

* $p < 0.05$ significant at 0.05 level of significance

** $p > 0.05$ non-significant at 0.05 level of significance

Out of 60 children and their mothers there is a significant association between the level of knowledge of mothers and nutritional status of children for height for age, Fisher's exact test shows p- value is lower than 0.05 level of significance.

(height for age) – 62.5% of mothers had poor knowledge for the severely wasting category (>-3 z-score), 63% of mothers had average knowledge for the normal category (+2 to -2 z-score), and 22% of mothers had good knowledge for the normal category (+2 to -2 z-score).

5. Conclusion

The following conclusions are drawn from the finding of the study:

Majority of mothers 33(55%) had average knowledge on nutritional requirements of children. For **weight for age:** Majority of children 50(83%) were in normal category (+2 to -2 z-score). For **height for age:** Majority of the children 27(45%) were in normal category (+2 to -2 z-score), For **height for age:** Majority of the children 42(70%) were in normal category (+2 to -2 z-score), For **MUAC:** Majority of children 22(37%) were severely undernourished (> -3 z-score). There is a significant association between nutritional status of children and the level of knowledge of mothers for height for age.

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