

Knowledge regarding Malnutrition and Its Prevention – A Study on Slum Dwelling Mothers

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Abstract

Introduction: A large proportion of under-five-year kids are suffering from malnutrition. A study was conducted to assess the knowledge of mothers regarding malnutrition and its prevention and evaluate effectiveness of structured teaching program regarding malnutrition and its prevention in terms of knowledge gain in mothers of under-five children attending a crèche run by an NGO in a slum area of New Delhi.

Methodology: Quantitative research approach with one group pre-test, post-test design was used. Tool used for generating necessary data was a structured knowledge questionnaire, after establishing its validity and reliability. Purposive sampling technique was used to select 45 mothers having children under five years of age. The study was conducted at a crèche run by an NGO in a slum area of Delhi.

Results: Before administration of the structured teaching program, 18 (40%) mothers had poor knowledge, 15 (33.3%) had average knowledge and 12 (26.7%) had good knowledge about malnutrition and its prevention, while after administration of structured teaching program, 12 (26.7%) had poor knowledge, 21 (46.7%) had average knowledge and 12 (26.7%) had good knowledge about malnutrition and its prevention indicating that the intervention was effective. There was significant relationship between knowledge gain and age, education and monthly family income of mothers.

Conclusion: Finding of the study revealed that mothers having children under five years of age had poor knowledge about malnutrition and its prevention. The structured teaching program was an effective tool to enhance the knowledge of mothers.

Keywords: Malnutrition, Prevention, Knowledge, Slum dwelling mothers

Introduction

Malnutrition refers to the situation where there is an unbalanced diet in which some nutrients are in excess, lacking or in wrong proportion. Simply put, it can be categorized as under-nutrition and over-nutrition. Despite India's 50% increase in GDP since 1991,¹ more than one-third of the world's malnourished children live in India. Among these, half of them under three are underweight and a third of wealthiest children are over-fed.² When it comes to child malnutrition, children in low-income families are more malnourished than those in high-income families. Some cultural beliefs may lead to malnutrition. Among these is the influence of religion, especially in India they are restricted from consuming meat. Also, other Indians are strictly vegan, which means, they do not consume any sort of animal product, including dairy and eggs. This is a serious problem when inadequate protein is consumed because 56% of poor Indian households consume cereal to consume protein. It is observed that the type of protein that cereal contains is not parallel to the protein that animal products contain.³

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This phenomenon is most prevalent in the rural areas of India where more malnutrition exists on an absolute level. Whether children are of the appropriate weight and height is highly dependent on the socio-economic status of the population.⁴ Children of families with lower socio-economic standing are faced with sub-optimal growth. While children in similar communities have shown to share similar levels of nutrition, child nutrition is also differential from family to family depending on the mother’s characteristic, household ethnicity and place of residence. It is expected that with improvements in socio-economic welfare, child nutrition will also improve.⁵ Malnutrition is a condition that results from eating a diet in which nutrients are not enough, or are such that they do not meet the need of the body and cause health problems.

The nutrients involved can include: protein, carbohydrates, vitamins or minerals. It is often used specifically to refer under-nutrition here and there are not enough calories, protein or micronutrients; however, it also includes over-nutrition. If, under-nutrition occurs during either pregnancy or before the age of two years, it may result in permanent problems with physical and mental development. Extreme undernourishment, known as starvation, may have symptoms that include: a short height, thin body, very poor energy levels, and swollen legs and abdomen.⁵

The 2011 Global Hunger Index (GHI) Report ranked India 15th amongst leading countries with hunger situation. It also places India amongst the three countries where the Global Hunger Index between 1996 and 2011 went up from 22.9 to 23.7, while 78 out of the 81 developing countries studied, including Pakistan, Nepal, Bangladesh, Vietnam, Kenya, Nigeria, Myanmar, Uganda, Zimbabwe and Malawi, succeeded in improving the hunger condition.⁶

Along with other factors, the ignorance on the part of mother also contributes to malnutrition among children. Mother as well as other family members are not even aware that there exists a problem which requires urgent attention and intervention, as most of the children around them have same problem and it is considered as normal to have a child who is underweight and/or stunted. Also, most of the time mothers are not aware of locally available, seasonal and cheap foods which are rich sources of various nutrients and can help meet the daily caloric and protein requirement. Educating mothers and making them aware of these food items may help in dealing with the problem of malnutrition to a great extent. According to Isokpunwu,⁷ even when there is an abundance of food, parents and caregivers are not well-informed about appropriate feeding practices.

There is little understanding about the essential types and varieties of foods that children require for growing healthy. The cost of malnutrition during the first 1000 days of birth is almost irreversible. It can result in brain damage, growth

and development problems, poor educational performance and increased risk of chronic disease in later life. This period represents a critical window of opportunity as adequate nutrition can avert malnutrition while ensuring that children have the best possible opportunity to grow, learn and rise out of poverty.⁷

Keeping above conditions in mind, a study was conducted to assess the knowledge of mothers regarding malnutrition and its prevention and evaluate effectiveness of structured teaching program regarding malnutrition and its prevention in terms of knowledge gain in mothers of under-five children attending a crèche run by an NGO in a slum area of New Delhi.

Objectives of the study were to assess knowledge of mothers regarding malnutrition and its prevention among under-five children, to prepare structured teaching program for mothers on prevention of malnutrition in under-five children and evaluate its effectiveness and to determine the association between post-test knowledge score and selected demographic variables

Materials and Methods

Measures used for identification of the problem were formal and informal talks and discussion with the staff of the Community Health Center, New Delhi, St Stephens and assessment of children in the crèche run by St Stephens Hospital, community need assessment, and observation of children for malnutrition in community; and it was found that out of 50 children under five years of age, attending the crèche, 28 (56%) were under-weight and malnourished. The conceptual framework adopted for this study was systems model. Quantitative research approach was considered appropriate because the primary objective of study was to determine the knowledge deficit in mothers and the effectiveness of planned teaching program. The research design adopted for the present study was one group pre-test, post- test design

Pre-Test Day	Intervention Day	Post-Test Day
1	2	10
OK1	X	OK2

Ethical clearance was obtained before conducting the study. A pre-tested structured questionnaire having 15 items was used for data collection. Validation of tool was done by experts of relevant field. Kuder Richardson 20 (KR-20) test was applied to find out the reliability of the tool, which was 0.838 indicating that the tool was reliable. Purposive sampling technique was used and 45 mothers were selected who were having at least one child under 5 years of age and whose child was enrolled in the crèche run by the NGO in the slum of Delhi, as researcher wanted to assess the knowledge of slum dwelling mothers regarding malnutrition. The study setting was a crèche run by an NGO

in a slum area of Delhi, having attendance of 67 children. Study was limited to mothers having at least one child under 5 years of age, and mother of child enrolled in the crèche run by an NGO in a slum area of Delhi.

Pre-test was conducted to assess the knowledge of mothers regarding malnutrition among under-five children and data analysis revealed that there was knowledge deficit in mothers regarding the topic. Alternative solutions planned were: arrange a group discussion, plan for incidental teaching, give handouts, pamphlets, planned teaching program, and preparation of posters and charts on the selected topic.

Considering the feasibility, time, resource, economy and availability of mothers, planned teaching program was chosen from the alternatives. The teaching was given to mothers and post-test was taken thereafter on the 10th day. Data was analyzed using SPSS ver.21.

Results

Section 1: Findings Related to Background Profile of the Study Subjects

The background profile of study subjects is depicted in the bar diagram (Fig. 1) given below:

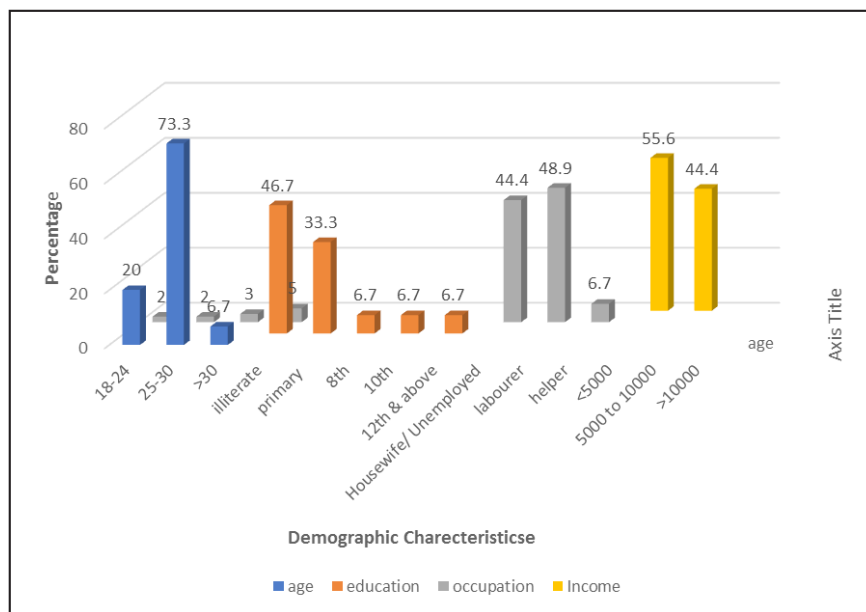


Figure 1. Bar Diagram Showing Demographic Characteristics of Study Subject

Section 2: Findings Related to Knowledge regarding Malnutrition and Its Prevention

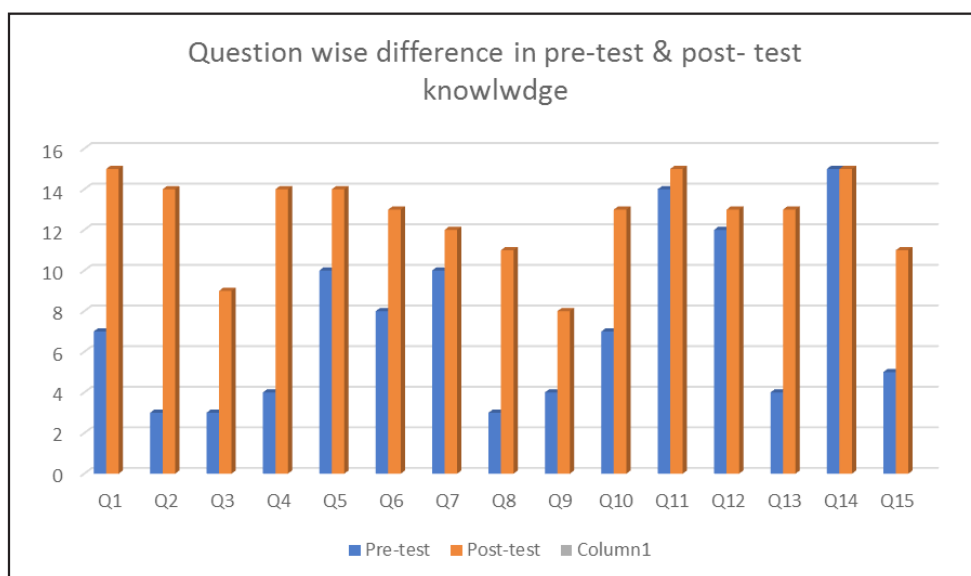


Figure 2. Bar Diagram Showing Item-Wise Mean Difference of Knowledge Scores in Pre-Test and Post-Test

Figure 2 depicts there was gain in knowledge with regards to each item after administration of the planned teaching program.

Table 1. Mean, Median and Standard Deviation of Pre-Test and Post-Test Knowledge Scores

	Pre-Test	Post-Test
Valid	45	45
Missing	0	0
Mean	7.2667	12.6667
Median	7.0000	13.0000
Std. deviation	4.00227	2.07802

n=45

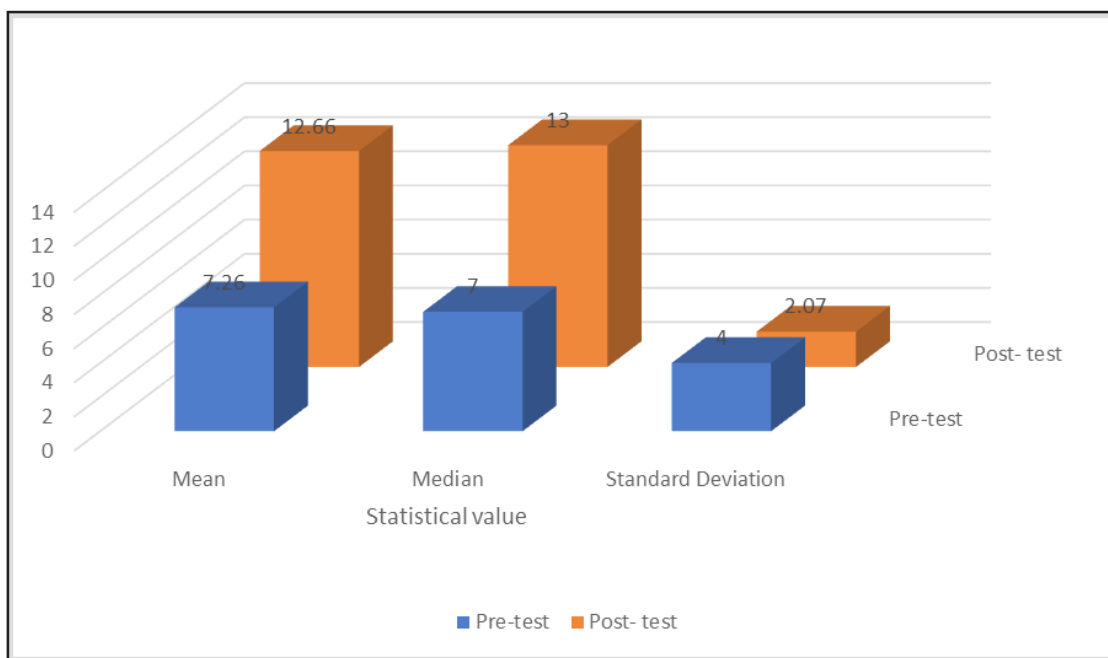


Figure 3. Bar Diagram Showing Comparison of Mean, Median and Standard Deviation of Pre-Test and Post-Test Knowledge Scores

Data presented in Table 2 shows that mean post-test knowledge score of 12.66, obtained by study subjects was higher than their mean pre-test knowledge score of 7.26 with a mean difference of 5.4. This indicates that there is knowledge gain by all study subjects. Median of pre-test knowledge score of 7 was also found to be higher

than median of pre-test knowledge score of 7. Standard deviation of post-test knowledge score 2.07 was lower than the pre-test knowledge score 4.0 indicating that the group became more homogenous after administration of the planned teaching program.

Table 2. t'-Value of Mean Pre-Test and Post-Test Knowledge Scores

	t	df	p-value	Mean Difference
Pre-test score	55.938	44	.000*	7.26667
Post-test knowledge scores				12.66667

n=45

The data presented in Table 3 shows that t-test was applied to find out significance of mean difference between pre-test and post-test knowledge. p-value of 0.00* indicates that mean difference of pre-test and post-test knowledge is statistically significant.

Scoring Key for Knowledge Test

- Good knowledge – a score of 67% or above
- Average knowledge – a score between 66.9% to 35%

- Poor knowledge – a score below 35%
Before administration of structured teaching program, 18 (40%) mothers had poor knowledge, 15 (33.3%) had average knowledge and 12 (26.7%) had poor knowledge about malnutrition and its prevention, while after administration of structured teaching program, 12 (26.7%) had poor knowledge, 21 (46.7%) had average knowledge and 12 (26.7%) had good knowledge about malnutrition and its prevention indicating that the intervention was effective.

Section 3: Finding Related to Relationship between Post-Test Knowledge Score and Selected Demographic Variables

Table 4. Chi Square Values Showing Relationship between Post-Test Knowledge Score and Selected Demographic Variables

Variable	Knowledge Category			Test	Df	p-value
	Poor	Average	Good			
Age of Mother						
18–24	0	6	3	χ^2	4	0.021*
25–30	9	15	9			
>30	3	0	0			
Education						
Illiterate	7	9	5	χ^2	8	0.22
Primary	3	8	4			
8th	2	0	1			
10th	0	2	1			
12th or more	0	2	1			
Occupation						
Unemployed/house wife	5	10	5	χ^2	4	0.95
Laborer	7	9	6			
Clerical	0	2	1			
Income						
<Rs. 5000/-	10	8	7	χ^2	2	0.00*
Rs. 5000–10000/-	2	13	5			

n=45

*p value significant at 0.05 level of significance

The data presented in Table 4 shows that computed Chi square value of 0.021* for determining relationship between post-test knowledge score and age is statistically significant at 0.05 level. To determine the relationship between course of education of the mother and post-test knowledge scores the computed value of chi square is 0.22* which is significant at 0.05* level of significance, chi square test was computed to determine relationship of occupation of mother and post-test knowledge score was not found significant with p-value 0.95 at 0.05* level of significance.

Computed Chi square value of 0.00* for determining relationship between post-test knowledge score and monthly family income is statistically significant at 0.05 level of significance for degree of freedom 2. From above data, it was determined that there is significant relationship between post-test knowledge score and age, education and monthly family income. Hence, we reject null hypothesis for these three variables. Chi square computation shows that there is no significant relationship between post-test knowledge score and occupation of mother. Hence we fail to reject null hypothesis, and research hypothesis is rejected for this variable.

Conclusion

Results of the present study are consistent with the study done by Divya⁸ on assessment of knowledge about under-five nutritional problems and its prevention. The study findings reported that nearly half of the mothers 27 (54%) had poor

knowledge, around 19 (38%) had average knowledge, and only 4 (8%) had good knowledge regarding the common nutritional problems and its prevention. Mothers had poor knowledge on under-five nutritional problems and its prevention which is also found in present study as 40% mothers had poor knowledge about malnutrition and its prevention.

Results of the present study are in line with a study done in Nigeria⁹ in which the majority (65%) of the mothers/caregivers had no form of formal education. There was a significant statistical association between maternal literacy status and occurrence of malnutrition (specifically stunting) among the children studied ($X^2=26.2$, $df=1$, $P<0.05$) and concluded that maternal literacy has a significant relationship with the nutritional status of children.

Results of present study are also consistent with the results of a study done in Pretoria¹⁰ which revealed that mothers had limited knowledge on malnutrition as a condition, the signs and symptoms thereof; causes; prevention and treatment of child malnutrition. This lack of knowledge made mothers to have wrong perceptions about child malnutrition. The study also revealed that mothers did not perceive malnutrition as a serious problem that can result in admission for treatment in a hospital.

In the present study, the intervention of structured teaching program was found to be effective in increasing knowledge of mothers regarding malnutrition and its prevention as

evident by statistically significant mean difference, and supported by study done Ramesh in Kancheepuram District, South India. The study revealed that the IEC strategy was effective in improving knowledge of mothers and further suggested that more IEC strategies should be implemented in other places of India to prevent protein energy malnutrition among under-five children.¹¹

There is significant relationship between knowledge gain and age, education, and monthly family income of mothers at 0.05 level of significance, which is supported by findings of a study done by Moradi et al., which indicated that 40/2%, 73/6% and 26/9% of mothers had respectively optimum knowledge, attitude and practice. A statistically significant association was found between mother education and maternal nutritional knowledge, attitude and practice. And family income had a statistically significant association with knowledge. There was no association between mother's age and knowledge, attitude, and practice. There was found a significant positive association between knowledge, attitude, practice, and concluded that education of mothers concerning nutritional requirements of children make them possible to benefit from a proper nutritional program.¹²

Recommendation

The present study recommends that a similar study can be undertaken with a larger sample to generalize the findings and a study can be done to assess knowledge of mother, and its association with nutritional status of child.

Conflict of Interest: None

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