

A Study to Assess the Effectiveness of Structured Teaching Program on Knowledge regarding Management of Children with Severe Malnutrition among Mothers at District Hospital Morar, Gwalior Madhya Pradesh

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Abstract: *The purpose of the study was to Assess Knowledge regarding management of severe malnutrition among mothers and to find out the need of training on management of severe malnutrition. The objectives of the study were to assess the knowledge regarding management of severe malnutrition. A survey research approach was used and the research design adopted for the present study was descriptive. The target population of the study was mothers who are the mothers of admitted pediatrics. Sample size was 60. Data analysis was done by the basis of Objective and Hypothesis of study. The obtained data was analyzed based on objectives and hypothesis by using descriptive and inferential statistics and hypothesis were tested at 0.05 level of significance. The result of the study revealed that level of knowledge regarding management of malnutrition among mothers, out of 60 mothers, 70% have poor knowledge, 46.66% of the samples have average knowledge, and 36.66% have good knowledge.*

Keywords: MAC, ALRI, Effectiveness, Malnutrition

1. Introduction

Severe malnutrition is one of the major killers of children under five; it contributes to approximately 1 million child deaths every year. Globally, it is estimated that 26 million children under five years are severely acutely malnourished, most of who live in South Asia and in sub-Saharan Africa. India alone is home to 8,105,000 children with SM (31.2 % of the world's severely wasted children. Severe acute malnutrition among children under five years remains a major scourge in the developing world, including a booming economy like India. New evidence suggests that large numbers of children with SM can be treated in their communities without being admitted to a health facility or a therapeutic feeding center. Integrating the management of SM with other health activities such as preventive nutrition initiatives and activities related to the integrated management of childhood illnesses at first-level health facilities and at the referral level, and initiating such activities where none exist play a significant role in the effective management of severe acute malnutrition.

Need for the Study

Globally, malnutrition is the most important risk factor for illness and death. It affects children and pregnant women disproportionately. It is the direct cause of about 300,000 deaths per annum and indirectly responsible for about half of all deaths in young children (malnutrition increases the risk of death from diarrhoea, lower respiratory tract infection, malaria and measles). The World Health Organization (WHO) estimates that by 2015 prevalence of malnutrition worldwide will be 17.6%- with the vast majority living in developing countries in southern Asia and

sub-Saharan Africa. An additional 29% will have stunted growth due to poor nutrition. According to National Family Health Survey-III, conducted during 2005-2006 in India, 6.4% of children below 60 months of age were suffering from this malady (weight-for-height less than -3SD). With the current estimated total population India as 1100 million, it is expected that there would be about 132 million under-five children and amongst these about 6.4% or 8.1 million are likely to be suffering from SM.

Hypotheses

- H1: The mean post test knowledge score of the mothers of children will be significantly higher than mean pre test knowledge score.
- H2: There will be significant association between pre test knowledge score of the mothers of children on management of severe malnutrition with selected demographic variables.

2. Literature Survey

The review of literature related to the knowledge among mothers of under five children regarding the management of severe malnutrition divided into:

- Literature related to incidence & prevalence of severe malnutrition
- Literature related to management of severe malnutrition
- Literature related to the knowledge among mothers of under five children regarding the management of severe malnutrition.
- Literature related to STP as an effective teaching module.

Literature related to incidence & prevalence of severe malnutrition

A experimental study was carried out to identify the increased incidence and severity of acute lower respiratory tract infection (ALRI) associated with malnutrition. Children aged from 6 to 60 months, mostly from a low socioeconomic population, admitted with ALRI, were enrolled prospectively. WHO case definition was used for ALRI. The data about the weight, length/height, mid-arm circumference (MAC) in 1-5 year old children and acute respiratory infections (ARI) episodes in the preceding 6 months were collected in addition to demographic characteristics. Nutritional status was assessed using an age independent criteria in the form of ratio of weight (in kilograms multiplied by 100) to the length or height (in centimetre) squared. The result of the study showed among 206 children with ALRI, 21.9% had pneumonia, 55.8% had severe pneumonia and 22.3% had very severe disease. About 85% of the children were younger than 3 years old. Male to female ratio was 1.34:1. The prevalence of malnutrition was seen in 54.9% of the 68.7% of 3-5 years age group and 59.4% of 1-3 years age group. Severe malnutrition had shown higher percentages among children with pneumonia and severe pneumonia. Severely malnourished children had more ARI episodes in the preceding 6 months although it was not statistically significant (OR 1.22; 95% CI 0.71-2.12; P = 0.47). thus the study concluded that high prevalence of severe malnutrition and its significant association with increased ALRI in 1-5 year old children highlights the need for strengthened nutrition intervention programs.

Literature related to management of Severe Malnutrition

A systematic review, meta-analysis and Delphi process was carried out regarding treatment of severe malnutrition in low- and middle-income settings. The researcher systematically searched the literature and included 14 studies in the meta-analysis. Study quality was assessed using CHERG adaptation of GRADE criteria. A Delphi process was undertaken to complement the systematic review in estimating case fatality and recovery rates that were necessary for modeling in the Lives Saved Tool (LiST). The result of the study showed that Case fatality rates for inpatient treatment of SAM using the WHO protocol ranged from 3.4% to 35%. For community-based treatment of SM, children given RUTF were 51% more likely to achieve nutritional recovery than the standard care group

Literature related to the knowledge among mothers of under five children regarding the management of severe malnutrition

A case control study was conducted to find out maternal knowledge of malnutrition and health care seeking attitudes of 68 mothers in rural Tamil Nadu. The study reported that 34 mothers of well nourished children have more knowledge 59% regarding role of lack of food or nutrition in mild marasmus – kwashiorkor mixed malnutrition compared to the 34 mother of severely malnourished children 35%. There were 67.6% of poor and illiterate mothers out of 68 mothers. The study also reported that only 28% of mothers would seek medical care for malnutrition.

Literature related to STP as an effective regarding knowledge

A study was conducted on 2009 to assess the effectiveness of Structured teaching programme regarding quality of life among mothers of under five children following upper respiratory tract infection. A total number of 60 mothers of under five children both males and females were selected by convenience sampling technique. A detailed questionnaire was used to collect data about quality of life and improvement in lifestyle after upper respiratory tract infection in under five children. The study result showed that a high proportion of the mothers experienced improvement (that is 45 mothers) in life style modifications, while a substantial number (that is 15 mothers) lack of confidence and dependence. The study concluded that an important step is needed to improve the quality of life, might be through the institution of a structured multidisciplinary rehabilitation program, also the life style modification with focus on emotional support.

Problem Definition

A Study to Assess the Effectiveness of Structured Teaching Program on Knowledge regarding Management of Children with Severe Malnutrition among Mothers at District Hospital Morar, Gwalior Madhya Pradesh

Objectives

- 1) To develop structured teaching programme on management of severe malnutrition.
- 2) To assess the knowledge of mothers of District Hospital Morar regarding management of severe malnutrition, measured by structured knowledge questionnaire.
- 3) To evaluate the effectiveness of structured teaching programme on management of severe malnutrition.
- 4) To find out the association between post test knowledge scores of mothers and demographic variables such as age of mother, age of children, education of mother, occupation of mother, religion, family monthly income, type of family.
- 5) To assess the prior knowledge among mothers of children regarding management of severe malnutrition.

3. Research Approach/Methods

Research approach: Survey approach

Research design: Descriptive design

Setting of the study: District Hospital Morar, Gwalior

Population: mothers

Sample: mothers of pediatric ward

Sample size- 60

Sampling techniques- non probability convenient technique

Variables of the study- demographic variables: age of mother, age of children, education of mother, occupation of mother, religion, family income, type of family.

Research variables: In this study, knowledge regarding management of malnutrition among children with severe malnutrition.

Data collection tool- Self structured questionnaire on management of children with severe malnutrition was constructed by the investigator which contains items in the following aspects.

Section–A: This section contains to collect the background information of the participants.

Section – B: Structured questionnaire was prepared on five aspects. Definition, causes, sign and symptoms and management regarding malnutrition. It consists of 30 items all of which are scored. The total score was 30 and each question contains of four answers out of which one answer is correct. The correct answer is given a score of “one” and each wrong response a score of “zero”.

Inclusion Criteria

- Mothers of District Hospital Morar who are able to understand, read & write Hindi.
- Mothers of District Hospital Morar in the age group of 18 to 40 years.
- District Hospital Morar mother who are willing to participate in study.
- District Hospital Morar mother’s receiving structured teaching programme.

Exclusion criteria

- Mothers of District Hospital Morar who are not willing to participate in the study.

Data Collection Method

Before collecting the data, permission was obtained from the concerned authority. Keeping in mind the ethical aspect of research, the data was collected after obtaining the informed consent of the sample. The samples were assured anonymity and confidentiality of information provided by them. Pre-test was conducted followed by administration of STP. The duration of the session was 30 minutes. Post-test was conducted to evaluate the effectiveness of structured teaching programme.

4. Result

In the present study 70% of the respondents had poor knowledge regarding management of severe malnutrition before the administration of structured teaching programme. But after the administration of structured teaching programme 46.66% of them had average knowledge and 36.66% of them had good knowledge. The mean post-test scores of 18.3 was higher than the mean pre-test scores of 7.9 which was significant at P-value of 0.00001 level which showed Significant increase in knowledge and thus it proves the effectiveness of the structured teaching programme.

Interpretation of the Data

The data was coded, organized and interpreted by using descriptive and inferential statistics and was analyzed as per the objectives of the study under the following heading-

Presentation of Data

Section A: Assessment of sample characteristics. Distribution of subjects according to their demographic variables.

Section B: Distribution of subjects according to their knowledge regarding management of severe malnutrition.

Section C: Effectiveness of STP on knowledge of management of severe malnutrition by using „Z” Test value

Section D: Association of selected demographic variables with knowledge regarding management of severe malnutrition.

Section A

Table-3 Distribution of Subjects according to their demographic Variables, N=60

S.No	Sample Characteristics	Frequency	Percentage
1	Age of mother		
	a. 18-20yrs	0	0%
	b. 20-25yrs	2	3.33%
	c. 26-30yrs	36	60%
2	d. 31-40 yrs	22	36.66%
	Age of children		
	a. Birthto3yrs	32	53.33%
	b. 3to7 yrs	22	36.66%
3	c. 7to10yrs	6	10%
	d. 10to12yrs	0	0%
	Education of mother		
	a. Primary	30	50%
4	b. High school	16	26.66%
	c. Intermediate	6	10%
	d. collegiate	8	13.33%
	Occupation of mother		
5	a. Housewife	60	100%
	b. Working women	0	0%
	c. govt. job	0	0%
	d. non govt. job	0	0%
6	Religion		
	a. Hindu	48	80%
	b. Muslim	12	20%
	c. Christian	0	0%
7	d. Other	0	0%
	Family income/monthly		
	a.10000 & below	38	63.33%
	b.10001to20000	19	31.66%
8	c. 20001to 30000	3	5%
	d. 30001 & above	0	5%
	Type of family		
9	a. Nuclear family	36	60%
	b. Joint family	14	23.33%
	c. Extended family	10	16.66%

Data presented in table-1 depicts the distribution of frequency and percentage of residents of urban slum according to age of mother, age of children, education of mother, occupation of mother, religion, family monthly income, type of family.

- **Age of Mother:-**As per the finding of the study, the majority of the subject, i.e. 36 (60%) 26 to 30 yrs, 22(36.66%) above 30 yrs, 2 (3.33%) 20 to 25 yrs and 0 (0%) below 20yrs.
- **Age of Children:** As per the finding of the study, the majority of the subject, i.e.32(53.33%) birth to 3yrs , 22 (36.66%) 3 to 7 yrs , 6 (10%) 7 to 10 yrs ,0 (0%) 10 to 12yrs.

- **Education of Mother:** With regard to the education standard 30(50%) were from primary, 16(26.66%) were from high school, 8(13.33%) were from collegiate, and 6(10%) intermediate.
- **Occupation of mothers:** In relation of occupation 60(100%) were from housewife.
- **Religion:** In relation to the religion most of the subjects were from Hindu 48(80%), 12(20%) were from Muslim.
- **Family Income/Month:** In relation to the family income/monthly 38(63.33%) were from below10000, 19(31.66%) were from10001 to20000, 3(5%) werefrom20001to 30000 and 0 (0%) above30000.
- **Type of Family:** Regarding the source of type of family 36(60%) were from nuclear family, 14(23.33%) were

from joint family and 10 (16.66%) were from extended family.

Table 4: Distribution of subject according to Age of mothers, N=60

S. No	Demographic variable	Sample Characteristics	Frequency	Percentage
1.	Age of mothers	a) Below & 20yrs	0	0%
		b) 21to 25 yrs	2	3.33%
		c) 26 to 30 yrs	36	60%
		d) 31 & above	22	36.66%

Age of Mother

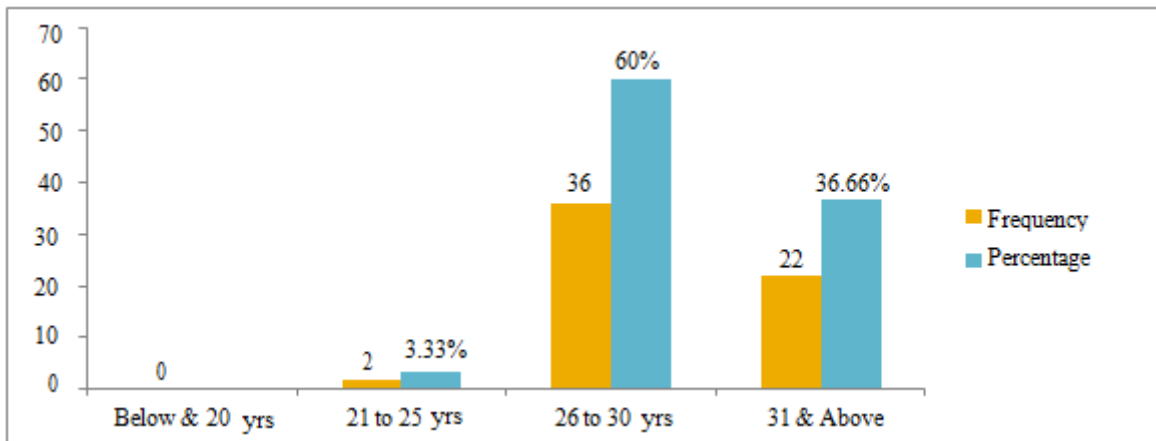


Figure 3: Column diagram showing the distribution of the sample according to their age

Among 36 (60%) were from 26 to 30yrs, 22 (36.66%) were from above 31yrs, 2 (3.33%) were from 21 to 25yrs and 0 (0%) were from below 20yrs.

The majority of subjects i.e. 32(53.33%) were birth to 3yrs and 22 (36.66%) were 3 to 7yrs. and 6 (10%) age of children.

Table 5: Distribution of subject according to age of children, N=60

S. No	Demographic variable	Sample Characteristics	Frequency	Percentage
2.	Age of children	a. birth to 3yrs	32	53.33%
		b.3 to7 yrs	22	36.66%
		c.7 to10 yrs	6	10%
		d.10 to12 yrs	0	0%

Age of Children

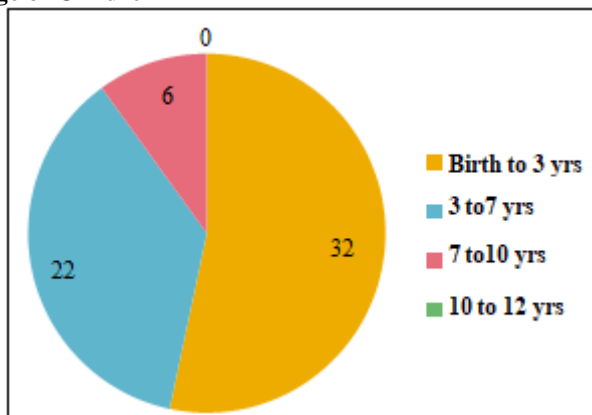


Figure 4: Pie diagram showing the distribution of the sample according to their age of children

Table 6: Distribution of subject according to education of mothers, N=60

S.No	Demographic variable	Sample Characteristics	Frequency	Percentage
3.	Education of mothers	a.Primary	30	50%
		b.High school	16	26.66%
		c.Intermediate	6	10%
		d.Collegiate	8	13.33%

Education of Mothers

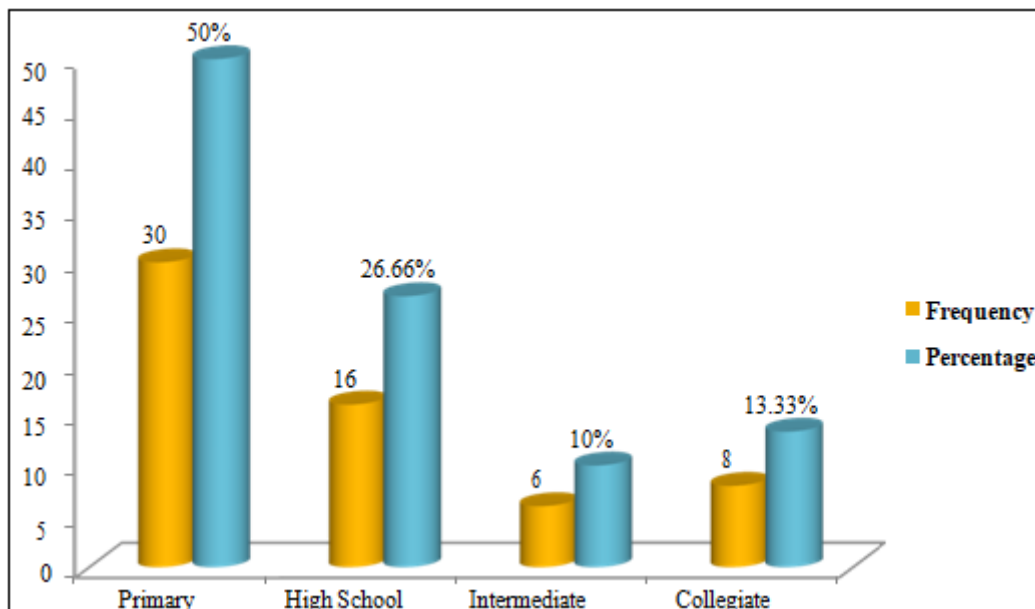


Figure 5: Cylinder diagram showing the distribution of the sample according to their education of mothers

The majority of samples were primary 30 (50%), 16 (26.33%) were high school, collegeate were 8 (13.33%), and only 6(10%) from intermediate.

Table 7: Distribution of subject according to occupation of mothers, N=60

S.NO	Demographic variable	Sample Characteristics	Frequency	Percentage
4.	Occupation of mothers	a) Housewife	60	100%
		b) Working women	0	0%
		c) Govt. job	0	0%
		d) Non govt. job	0	0%

Occupation of Mothers

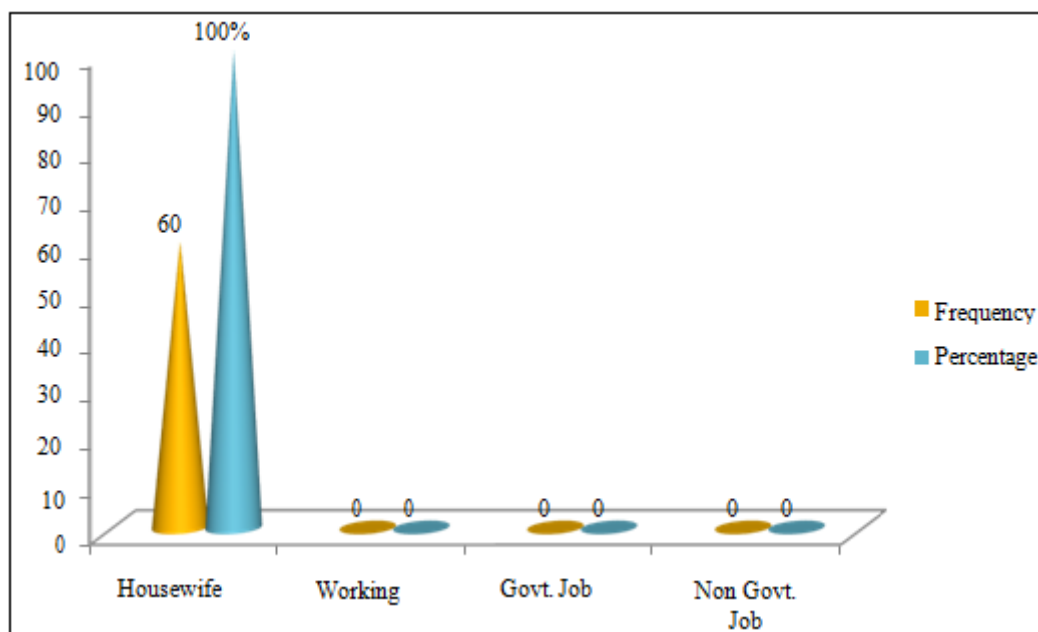


Figure 6: Cone diagram showing the distribution of the sample according to their occupation.

The majority of sample 60(100%) were housewife and others were 0 (0%).

Table 9: Distribution of subject according to religion,

S.No.	Demographic variable	Sample Characteristics	Frequency	Percentage
6.	Religion	a.Hindu	48	80%
		b.Muslim	12	20%
		c.Christian	0	0%
		d.Other	0	0%

Religion

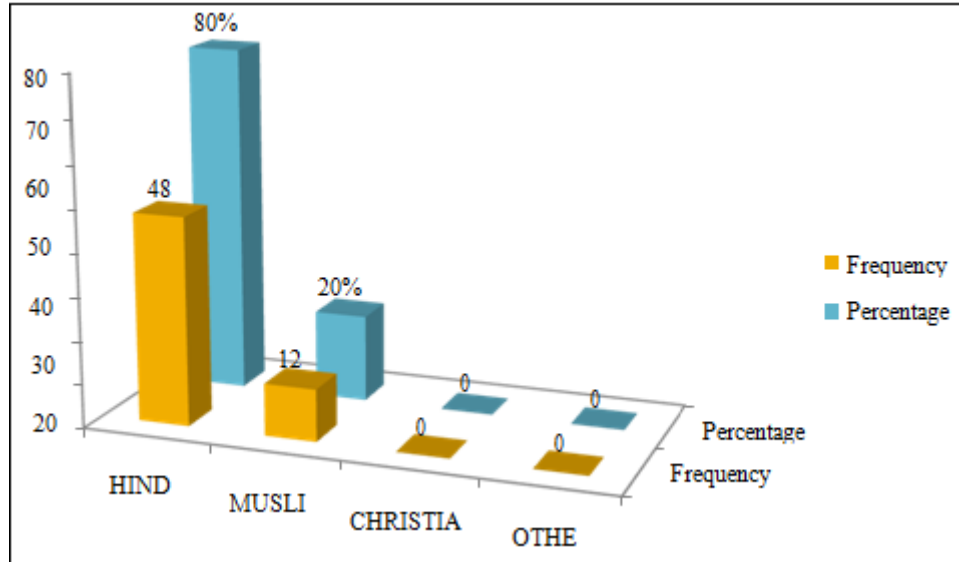


Figure 8: Column diagram showing the distribution of the sample according to their religion.

The majority of sample 48(80%) were from Hindu, 12 (20%) were Muslim,0 (0%) Christian and others.

Table 10: Distribution of subject according to family income/ monthly, N=60

S.No.	Demographic variable	Sample Characteristics	Frequency	Percentage
7.	Family income/ monthly	a.10000 &below	38	63.33%
		b.10001 to 20000	19	31.66%
		c.20001to 30000	3	5%
		d.30001& above	0	0%

Family Income

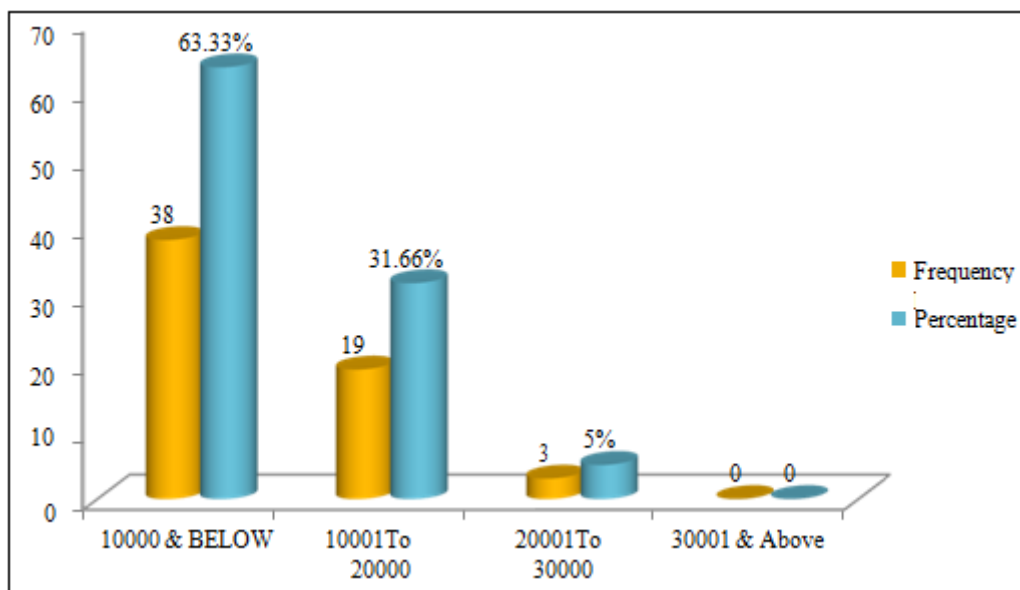


Figure 9: Cylindrical diagram showing the distribution of the sample according to their family income/monthly.

The majority of samples have less than 10000 & below family income 38 (63.33%), 19 (31.66%) were 10001 to 20000, 3 (5%) were 20001 to 30000 and no one from above 3000.

Majority of samples from nuclear family 36 (60%) and 14 (23.33%) were from joint family and 10(16.66%) were extended family.

Table 8: Distribution of subject according to type of family, N=60

S.No.	Demographic variable	Sample Characteristics	Frequency	Percentage
5.	Type of family	a. Nuclear	36	60%
		b. Joint	14	23.33%
		c. Extended	10	16.66%

Type of Family

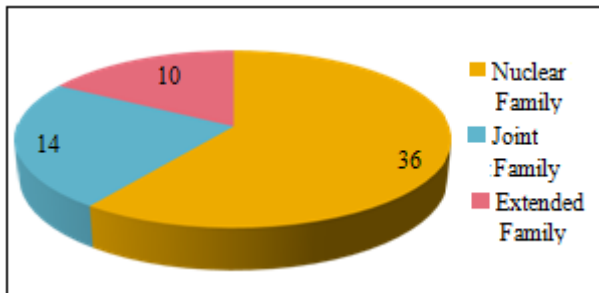


Figure 7: Pie diagram showing the distribution of the sample according to their type of family.

Section B- Distribution of subjects according to their knowledge regarding management of severe acute malnutrition.

Pretest knowledge score

This section deals with the pre test scores of people of District Hospital Morar regarding their knowledge which were obtained from the structured questionnaire on the management of severe malnutrition. The data were compiled into a master data sheet and analyzed. The total knowledge score as follows

Table-13(A) Frequency and percentage distribution of pretest, N=60

Pretest knowledge	Score	frequency	Percentage
1.Poor	1-10	42	70%
2.Average	11-20	18	30%
3.Good	21-30	0	0%

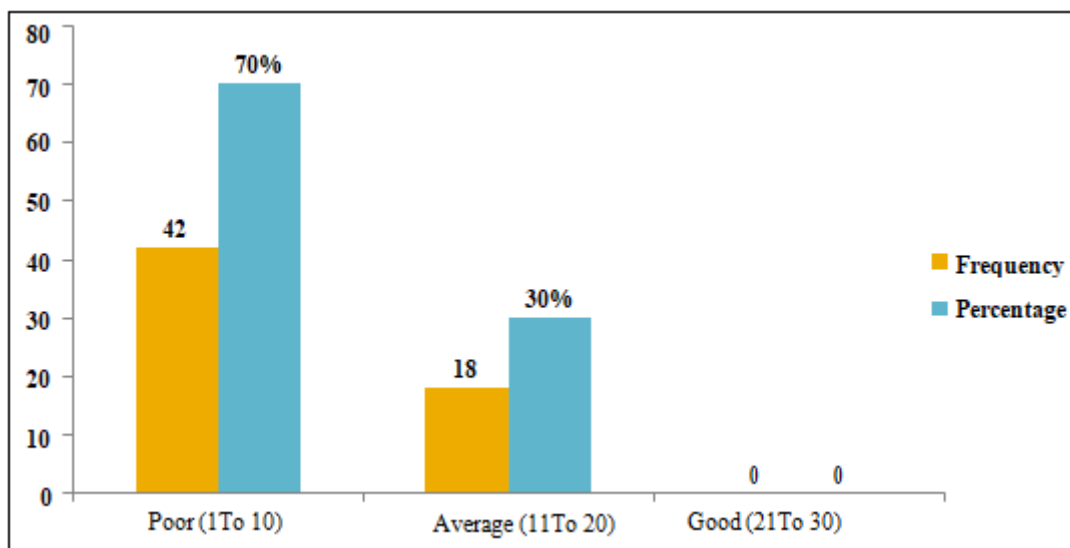


Figure12: Column diagram showing the frequency distribution of the pretest

The majority of samples 42 (70%) have poor knowledge, 18(30%) have average knowledge and 0(0%) have good knowledge.

Table 13 (B): Frequency and percentage distribution of posttest, N=60

Post test knowledge	Score	frequency	Percentage
1.Poor	1-10	10	16.66%
2.Average	11-20	28	46.66%
3.Good	21-30	22	36.66%

Post test knowledge score

This section deals with the post test scores of people of urban slum regarding their knowledge which were obtained from the structured questionnaire on the management of severe malnutrition.

The data were compiled into a master data sheet and analyzed.

The total knowledge score as follows

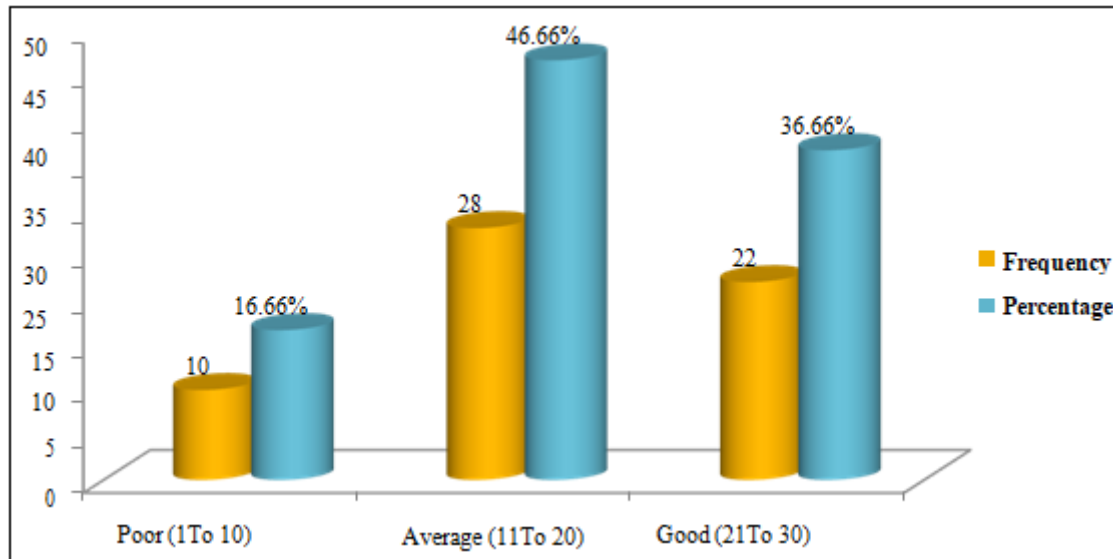


Figure13: Cylindrical diagram showing the frequency distribution of the posttest

The majority of sample 28(46.66%) have average knowledge, 22(36.66%) have good knowledge, and poor 10 (16.66%) have knowledge.

Table 13 (C): Subject distribution on pre test and post test knowledge score of mothers of District Hospital Morar regarding their management of severe malnutrition

Knowledge level	score	Pretest percentage	Posttest percentage
1.Poor	1-10	70%	16.66%
2.Average	11-20	30%	46.66%
3.Good	21-30	0%	36.66%

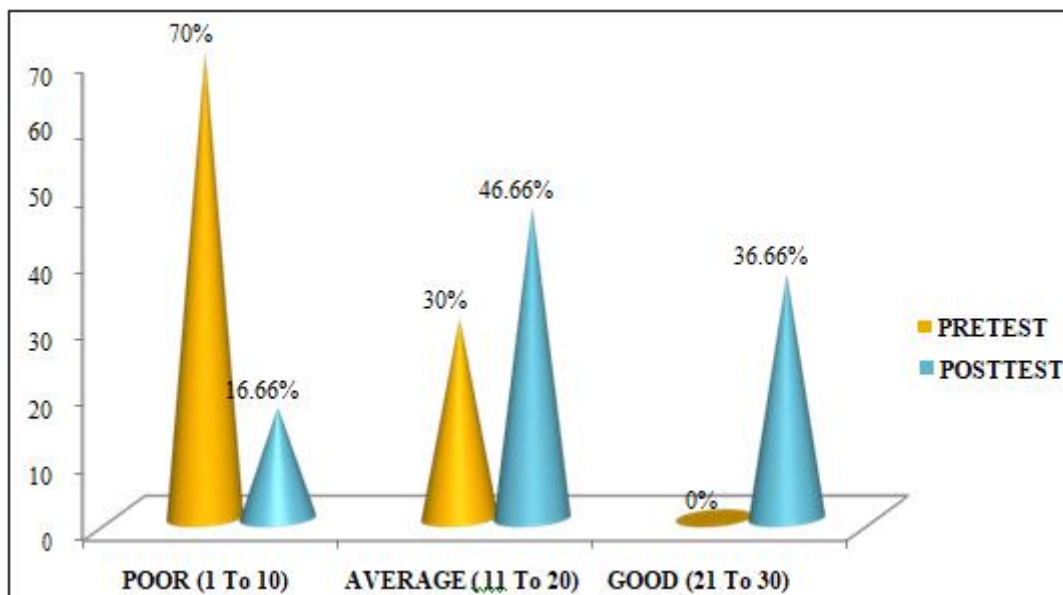


Figure 14: Cone diagram showing the percentage distribution of level of knowledge score pretest and post test

The comparison between pre test and post test knowledge score are depicts above. In the pre test majority of 70% had poor knowledge, 30% had average knowledge and 0% had good knowledge. In post test majority of 46.66 had average knowledge, 36.66% had good knowledge and 16.66% had poor knowledge regarding management on severe malnutrition.

Section C

Table 14: Effectiveness of STP on knowledge of management of malnutrition by using “Z” Test value.

This section deals with the pretest and post test knowledge score which were obtained by the use of structured questionnaire on management of severe malnutrition.

This part shows the effectiveness of STP in term of knowledge increased. The data were compiled into master sheet and analyzed.

This section is further classified into subsection:

A. Mean and standard deviation of pre test and post test knowledge score of management of severe acute malnutrition.

B. Values of mean, standard deviation, mean %, Z test and p.

The hypothesis is formulated in this regard as

Knowledge	Mean	Standard Deviation	Mean Difference	Z value
Pretest	7.9	4.71	10.4	4.60
Posttest	18.3	6.48		

Hypothesis

H₁- There will be significant effectiveness of STP on mothers knowledge on management of severe malnutrition in District Hospital Morar.

Table 14 (a): Mean and standard deviation of pretest and post test mothers knowledge score on management of severe malnutrition.

Score	Mean	Standard Deviation
Pretest	7.9	4.71
Posttest	18.3	6.48

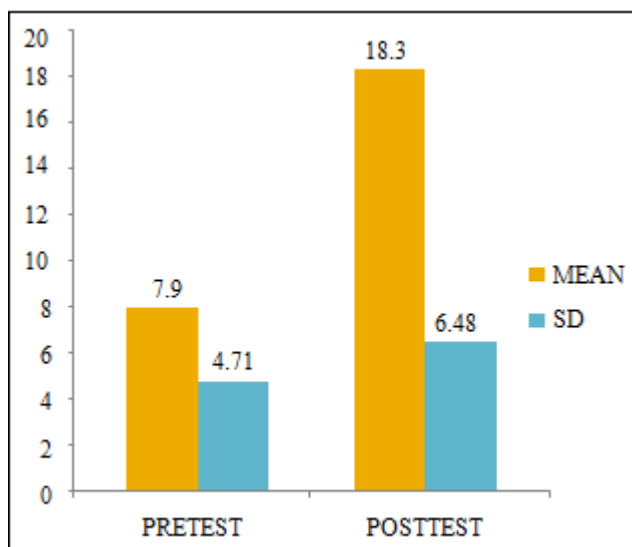


Figure15: Column diagram showing the mean and standard deviation of pretest and post test of knowledge score of mothers of District Hospital Morar Gwalior

The mean of pretest and posttest score are 7.9 and 18.3 respectively and standard deviation of pretest and post test are 4.71 and 6.48 respectively.

Table 14 (b): Values of mean, standard deviation mean %, Z test

Knowledge score	(M) Mean	(SD) Standard deviation	Mean %	Z value
Pretest	7.9	4.71	13.16	4.60
Posttest	18.3	6.48	30.6	

Since the value of mean % for pre test is 13.16% and post test is 30.6%, It states that there is significant difference in the knowledge score after administration of STP regarding management of severe malnutrition. 17.44% i.e. STP was effective to increase the knowledge to mothers of District Hospital Morar Gwalior.

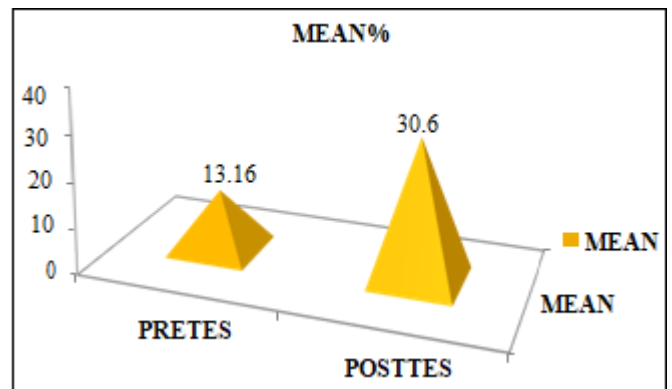


Figure 16: Cone diagrams showing the percentage of mean pre test and post test score of knowledge score of mothers of District Hospital Morar.

The percentage of pretest and post test are 13.16% and 30.6%

Section D

Table 15 Association of selected demographic variables with mothers knowledge on management of severe acute malnutrition

S.NO	Demographic Variables	Post-Test		DF	Table Value	Chi-square value	Level of Significance
		Above mean	Below Mean				
1	Age of mothers			2	5.99	0.4021	NS
	a) Below 20yrs	0	0				
	b) 21 to 25yrs	1	1				
	c) 26 to 30 yrs	15	21				
	d) Above 31yrs	11	11				
2	Age of children			2	5.99	0.882	NS
	a) Birth to 3yrs	14	18				
	b) 3 to 7yrs	10	12				
	c) 7 to 10yrs	3	3				
	d) 10 to 12yrs	0	0				
3	Education of mother			3	7.82	8.509	Significant
	a) Primary	16	14				
	b) Highschool	7	9				
	c) Intermediate	4	2				
	d) Collegiate	0	8				
4	Occupation of mother			0	0	0	NS
	a) Housewife	27	33				
	b) Working women	0	0				
	c) Government job	0	0				
	d) Non Government job	0	0				

5	Religion			1	3.84	7.014	significant
	a) Hindu	18	30				
	b) Muslim	9	3				
	c) Christian	0	0				
	d) Others	0	0				
6	Family income			2	5.99	3.858	NS
	a) Below10000	20	18				
	b) 10001 to 20000	7	12				
	c) 20001to 30000	0	3				
	d) Above30000	0	0				
7	Type of family			2	5.99	1.058	NS
	a) Nuclear family	20	16				
	b) Joint family	10	4				
	c) Extended family	6	4				

5. Conclusion

The study showed that there was a significant improvement in the knowledge scores after the administration of structure teaching programme. Hence it can be concluded that the structure teaching programme was effective in improving the knowledge of mothers of District Hospital Morar, Gwalior on management of severe acute malnutrition

6. Future Scope

The finding of the study shows the following implications in various fields of nursing.

Nursing Practice

There are several implication of the present study for nursing practice. Administration of STP on management on severe malnutrition for mothers of District Hospital Morar to reduce the complication & to achieve goal of the treatment & maintain a satisfied life. To prevent the complication of malnutrition and educate the mothers of slum area regarding severe malnutrition.

Nursing Administration

The administration has the responsibility to provide nurses with substantial continuing education opportunities. This will enhance the knowledge of health professionals and will help them to lead the patient in a correct direction in leading an excellent quality of life and managing their treatment and complication, which is the toughest vital part in case of terminal severe malnutrition.

Nursing Education

Nursing curriculum should take initiative to public book and articles in journals and conduct health education, demonstration, skit regarding management on severe malnutrition,. They should also motivate mothers District Hospital Morarto take self care properly and also help them to give care to the children those who unable to take self care due to malnutrition. Continuing nursing education programme, state and national conferences, workshop, seminars and symposium can be held for all nursing personal, patients/attenders to update their knowledge.

Nursing Research

Promote more research in innovative area of nursing practice. Nursing researches can conduct interactive sessions for maintaining healthy practice related to management on

severe malnutrition, the protocol may be developed as a guidelines for future research in different setting.

References

Books

- [1] Ghai O.P, Piyush Gupta, Paul V.K. Essential Paediatrics. Sixth Edition. New Delhi: CBS Publishers & Distributors; 2004. P.101, 102,103.
- [2] Polit D, Hunger H P. Nursing research principles and methods. 5th ed. Philadelphia: Lippinkott; 1999. p 156-58.
- [3] Parul datta. Paediatric nursing. First Edition. New Delhi: Jaypee publications; 2008. P. 1, 8.
- [4] Gupte S. The short text book of Pediatrics. 10thed. New Delhi: Jaypee Brothers Medical Publishers (P) Ltd; 2004. p. 125-147.
- [5] Basvanthappa B.T. Community health nursing. Second Edition. New Delhi: Jaypee publications; 2008. P: 526.
- [6] Seethalakshmi S. Karnataka hospitals to have 20-bed wards for malnourished kids. Times of India (TOI). 2012 Sep 24.
- [7] Sreevani R. Malnutrition and mental development. Health action 2006.
- [8] Sharma SK. Nursing research and statistics. 1st edition. Haryana: Elsevier; 2011. p. 288- 297.
- [9] Park K. Text of preventive and social medicine. 19th ed. BanasidarsBhanot Publishers, Jaipur. India: 2000; P.No 408,428,548.
- [10] Basavanthappa BT. Community Health Nursing. 1st edn. New Delhi: Jaypee Publication; 2005. 526.
- [11] Agarwal RK. Importance of optimal Infant and Young Child Feeding in Achieving Millennium Development Goals.Indian Paediatrics. 2008 Sep; 45(9):719-21.
- [12] RiyazGul, M. AamirKiram. A Profile of Nutritional Status of Underfive Year Old Children in Internally Displaced Persons (IDPS) CAMP, Jalozi district Nowshera. JPMI 2012 VOL 26 NO. 01:43-47.
- [13] Rao DH, Sharma KV, Kumar S, Reddy CG, Roan NP. Acceptability trails with ready to use food in rural area. National Institute of Nutrition, Indian 73 Council of Medical Research Hyderabad. PMID- 1291497. 1992 Dec 29(12) 1513-18.
- [14] Chellappa JM. Paediatric Nursing. 1st Edn. Bangalore: Gajanana Book Publishers and Distributors; 2005.273.
- [15] Gopalan C, Ramashastri BV, Balasubramanian SC. National Institute of Nutrition Hyderabad. 1st edn. New Delhi: Indian Council of Medical Research; 1985-54.

- [16] Park K. Text book of preventive and social medicine. 19th ed. Jabalpur: Banarsidas Bhanot publishers; 2007
- Website**
- [17] Project on Malnutrition among Pre-School Children & Women in India. Available at: URL: http://www.swamisamarth.com/projects/project_1_3.html
- [18] Elizabeth KE. Locally available and natural therapeutic food for immunomodulation in protein energy malnutrition. Indian Journal of Medical Research; 2007 Sep. Available from :URL: <http://findartciles.com/p/articles/mi-qa3867/is-200709/ain21278799/pg-2>
- [19] Maleta K, Kuittinen J, Duggan MB, Briend A, Manary M, Wales J et al. Supplementary feeding in underweight, stunted Malawian children with a ready to use food. J. Pedia Gastro Nutr [serial online] 2004 Feb [cited on 2010 Mar 11]; 38(2): 152-5. Available from: URL: www.ncbi.nlm.nih.gov/pubmed/14734876
- [20] Walia BNS, Gambhir SK, Kumar D, Bhatia SPS. Feeding from the family pot for prevention of Malnutrition Chandigarh: Department of Paediatrics. Institute of Medical Education and Research; [Online] 1981 [Cited 2008 Nov 10]. Available from :URL: <http://www.unu.edu/unupress/food/8F074e/8F074E07.htm>
- [21] Graves A, Haughton B, Jahns L, Fitzhugh E, Jones SJ. Biscuits, milk and orange juice; school breast fast environment in rural Appalchain schools. J. Sch health [serial online] 2008 Apr [cited on 2010 Mar 11]; 78(4): 197-202. Available from: URL: www.ncbi.nlm.nih.gov/pubmed/18336678
- [22] Paramita, Sengupta, Nina Philip and A. I. Benjamin. Epidemiological correlates of under-nutrition in under-5 years children in an urban slum of Ludhiana. HPPI Vol. 33(1), 2010. Available from: URL: <http://medind.nic.in/hab/t10/i1/habt10i1p1.pdf>
- [23] WHO Media centre. Children: reducing mortality. Available from URL: www.who.int/mediacentre/factsheets/fs178/en/index.html Telephone: +412 27912222
- [24] The Deadly Scourge of Child Malnutrition. PDF World Insecurity and Malnutrition, Scope, Trend, Cause [Online] 2008 [Cited 2008 Nov 10]. Available from :URL: ftp://ftp.fao.org/doccrep/fao/010/a/799e/ai799e02www.rguhs.ac.in/cdc/onlinecdc/uploads/05_N016_6817.doc
- [25] Primary Health Care - Indian Scenario. Tenth Five Year Plan, RCHII, NPP2000, Millennium Development Goal. [Online] 2005 [Cited 2008 Nov 10]. Available from: URL: [http://www.mohfw.nic.in/nrhm/presentation/s/multidimensional workshop/ppp-karnatakast.zip](http://www.mohfw.nic.in/nrhm/presentation/s/multidimensional%20workshop/ppp-karnatakast.zip)
- [26] 2011 Global Hunger Index Report, International food Policy Research Institute. Child health. Available at URL: (<http://updateox.com/tag/childhealth>) (<http://updateox.com/wp-content/uploads/2011/07/childmortalityrate-in-India.jpg>)
- [27] Sarkaritel UNICEF report, New Delhi. [Online] 2008 Jan [Cited 2008 Nov 10]. Available from: URL: http://www.sarkaritel.com/news_and_features/info/january08/27child
- [28] HUNGAMA Survey Report. Naandi foundation. Retrieved 1 February 2012. Available from: <http://www.hungamaforchange.org/HungamaBKDec11LR.pdf>
- [29] Kanjilal, Barun, Mazumdar, Mukherjee, Rahman (January 2010). "Nutritional status of children in India: household socio-economic condition as the contextual determinant". International Journal for Equity in Health 9: 19–31 Available from: http://www.digplanet.com/wiki/Malnutrition_in_India
- [30] World Bank Report. Source: The World Bank (2009). Retrieved 2009-03-13. "World Bank Report on Malnutrition in India. Available from: http://en.goldenmap.com/Malnutrition_in_India
- [31] 2011 Global Hunger Index Report. International Food Policy Research Institute (IFPRI). Available from: www.ifpri.org/sites/default/files/publications/ghi11.pdf
- [32] Primary Health Care. Indian Scenario National Family Health Survey-III. [Online] 2005-06:118 Available from: www.un.org/millenniumgoals/ URL: <http://www.hindu.com/2008/01/23stories/2008012355961300.htm>. 75
- [33] The Media and children's Rights. Millennium Development Goals. Connect World-Global Themes-Children [Online] 2008 [Cited 2008 Nov 1] Available from: URL: http://www.connect-world.net/global_themes/children/overview.html
- [34] UNICEF India- the children- nutrition. URL: www.unicef.org/india/children_2356.htm
- [35] Zamberlan P, Delgado AF, Leone C, Feferbaum R, Okay TS. Division of Nutrition. Nutritional Team of Instituto da Crianca do Hospital das Clinicas da Faculdade de Medicina da Universidade de Sao Paulo. Sao Paul Brazil: 2011 Jul. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/21610208>
- [36] Academy of Nutrition and Dietetics. Published by Elsevier Inc. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/23063414>
- [37] Basit A, Nair S, Chakraborty K, Darshan B, Kamath A. Kasturba Medical College. Manipal University. Manipal: 2012 Mar 31. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/22952561>
- [38] Hartman C, Shamir R, Hecht C, Koeletzko B. Schneider Children's Medical Center of Israel. Israel: 2012 May. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/22588189>
- [39] Durre Seemi Akram. Department of Paediatrics. DUHS and Civil Hospital Karachi: 2010 Mar; Available from: <http://www.ncbi.nlm.nih.gov/pubmed/20225772>
- [40] 843. Available from: URL: http://www.emro.who.int/publications/EMHJ/1006/An_intervention.htm
- [41] Indian Malnutrition stunted growth report 2012. Available from : <http://ibnlive.in.com/news/42-percent-indian-kids-malnourished-stuntedreport/219417-3.html>
- [42] Parul Christian, Rita Abbi, Sunder Gujral and Tara Gopaldas. The role of maternal literacy and nutrition knowledge in determining children's nutritional status. Available from: URL: <http://www.unu.edu/unupress/food/8F104E06.htm>
- [43] Puoane T, Sanders D, Ashworth A, Ngumbela M. School of Public Health. University of the Western

- Cape, Private Bag X17, Bellville 7535, South Africa: 2006 Mar. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/16817495>.
- [44] Johansson M, Nyirenda JL, Johansson A, Lorefalt B. Department of Medicine and Health Sciences, Division of Nursing Science, Faculty of Health Sciences, Linköping University, Linköping, Sweden: 2011 Dec. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/22283035>.
- [45] Mamidi RS, Kulkarni B, Radhakrishna KV, Shatrugna V. Clinical Division. National Institute of Nutrition. Hyderabad India: 2010 Aug. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/20453270>
- [46] Puett C, Coates J, Alderman H, Sadler K, Friedman. School of Nutrition Science and Policy. Feinberg International Center, Tufts University, Boston, Tufts University, Medford, Massachusetts, USA: 2012 Apr 20. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/22515318>.
- [47] Zhang J, Shi J, Himes JH, Du Y, Yang S, Shi S, et al. Department of Woman and Child's Care and Adolescence Health, School of Public Health, Tongji Medical College, Huazhong University of Science and Technology. Wuhan, Hubei, China: 2011. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/22094844>.
- [48] Malnutrition statistics. UNICEF. 2012; Available from: http://www.unicef.org/india/children_2356.htm 7
- [49] Malnourishment wikipedia. The free encyclopedia. [Cited 2012 december]. Available from: <http://en.wikipedia.org/wiki/Malnourishment>.
- supplementary feeding improves the Nutritional Status of Moderately Malnourished children in Bangladesh. The Journal of Health, population and nutrition. [Online] 2005 Dec [Cited 2008 Nov 10]; 23(4):320-30. Available from :URL:[http:// www.bioline.org.br /request?hn05043](http://www.bioline.org.br/request?hn05043).

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Journals

- [50] Rao VG, Yadav R, Dolla CK, Kumar S, Bhoneley MK. Under nutrition and childhood morbidities among tribal preschool children. Indian Journal Med Res. 2005 July; 122:43-7 Available from URL: www.jdrntruhs.org/text.asp?2012/1/4/233/105109
- [51] Sandip Kumar Ray, Akhil Bindu Biswas, Samir Das Gupta, et al. Rapid assessment of nutritional status and dietary pattern in municipal area. Indian journal of community medicine vol XXV, No.1, Jan march 2000. Department of community medicine medical college Calcutta. Available from: URL: medind.nic.in/iaj/t00/i1/iajt00i1p14.pdf
- [52] Ghoneim EH, Hassan MHA, Amine EK. An intervention programme for improving the nutritional status of children aged 2-5 years in Alexandria. Eastern Mediterranean Health Journal. [Online] 2004 Nov [Cited 2008 Nov 10]; 10(6): 828-
- [53] Aishat T. Bakre, Ashiyat K. Akodu C. and Babatunde A. Akodu Journal of Public Health and Epidemiology. April 2012. Vol. 3(4). p. 105-109. Available from: <http://www.academicjournals.org/JPHE>
- [54] Yalcin N, Cihan A, Gundogdu H, Ocakci A. Nutrition Knowledge Level of Nurses: Health Science Journal. 2013; 7(1):99-108.
- [55] Kumar S. Malnutrition in children of the Backward states of India and the ICDS programme. Journal of Health and Development. [Online] 2005 Dec [Cited 2008 Nov 12]; 1(3-4):1483-149
- [56] Roy SK, Funchs GJ, Mahmud Z, Ara G, Islam S. et al Intensive Nutrition Education with or without