

A Study to Assess the Effectiveness of Hyderabad Mixture on Weight Gain Among Malnourished Preschooler Children at Selected Urban Area of Jabalpur City

Mrs. Niroopma Kushwaha¹, Prof. Dr. Anu. V. Kumar²

¹Research Scholar, Department Of Nursing Malwanchal University, Indore,

²Research Guid:, Department Of Nursing , Malwanchal University, Indore

ABSTRACT

Identify the level of malnutrition among preschooler children at selected urban area of Jabalpur city, Compare the mean pre-existing and post interventional weight among malnourished preschooler children in experimental group, Evaluate the effectiveness of Hyderabad Mixture on weight gain among malnourished preschooler children in control and experimental group, Determine the association between pre-existing weight with demographic variables in control group among malnourished preschooler children, Determine the association between pre-existing weight with demographic variables in experimental group among malnourished preschooler children.

Keywords: Malnourished preschooler children, Hyderabad mixture , weight gain.

INTRODUCTION

Children are the wealth of tomorrow; take care of them, if you wish to have a strong India ever ready to meet various challenges.

Pandit Jawaharlal Nehru

Malnutrition is the condition that develops when the body does not get the right amount of the vitamins, minerals etc. The purpose of this study was to evaluate the effectiveness of weight gain on malnutrition and the preparation of Hyderabad mixture recipe among malnourished preschooler children. Chronic malnutrition results in stunting, a condition characterized by a reduced growth rate during childhood that also indicates effects on the child's cognitive, emotional and physical development. These impacts are often irreversible, creating long-lasting effects on the individual, the family and – on a larger scale – on a country's overall economy.

Children with mild to moderate malnutrition are best managed in their own homes and kept under surveillance so as to find out improvement or deterioration in their nutritional status. The parents of such children can be enlightened about the inadequacy in child's intake and guided how to correct it. Nutritional preparation by National Institute of Hyderabad called "Hyderabad Mix" was found beneficial in managing mild to moderate malnutrition at home level.

OBJECTIVES OF THE STUDY

1. Identify the level of malnutrition among preschooler children at selected urban area of Jabalpur city
2. Compare the mean pre-existing and post interventional weight among malnourished preschooler children in experimental group
3. Evaluate the effectiveness of Hyderabad Mixture on weight gain among malnourished preschooler children in control and experimental group
4. Determine the association between pre-existing weight with demographic variables in control group among malnourished preschooler children
5. Determine the association between pre-existing weight with demographic variables in experimental group among malnourished preschooler children

RESEARCH HYPOTHESIS

H₁. There will be a significant difference between the mean pre-existing weight and mean post interventional weight of malnourished preschooler children in experimental group.

H₂. There will be a significant difference between the post interventional weight of malnourished preschooler children in control and experimental group.

H₃. There will be a significant association between the pre existing weight with their selected demographic variables in control group.

H₄. There will be a significant association between the pre existing weight with their selected demographic variables in experimental group.

ASSUMPTIONS

1. Hyderabad mixture may improve the nutritional status of malnourished children.
2. Children in urban may have incidence of malnutrition.
3. Demographic variables may influence the nutritional status of malnourished children.

METHODOLOGY

Quantitative evaluative research approach ,with Quasi experimental, non randomized control group design and non probability purposive sampling technique was used.

The investigator had assessed the body weight of 3-5 years children and selected 60 moderate malnourished 3-5 years children from the above settings (30 from each urban) through non probability purposive sampling. Then the subjects from the experimental group were provided Hyderabad Mixture for 28 days. The intervention was not given in the control group. Post test was conducted on every 7th day for both experimental and control group and weight of the children were measured and analysed by Observational Proforma.

DESCRIPTION OF THE TOOL

SECTION A:-- Socio-demographic data:-

Socio- demographic data in which included 9 items such as age, gender, educational status of mother, monthly income of family, birth weight of the child , meal schedule ,type of food consume , exclusive breast feeding and starting age of weaning etc.

SECTION B: –WHO child growth chart for assessing malnutrition.

This classification is based on WHO growth chart . It has following grades of malnutrition-

Normal - (WAZ) Weight for age Z score above – 2 SD

Moderate Malnutrition - Weight- for- age, Weight- for- height and height-for-age Z score less than (<) – 2 SD or between -2 and -3 SD

SECTION C :- Hyderabad mixture

Ingredients of Hyderabad mixture

S. N.	Ingredients	Amount
1	Roasted whole wheat	40 gram
2	Roasted Bengal gram	16 gram
3	Roasted groundnut	10 gram
4	Jaggery	20 gram
5	Total	86 gram, providing 330 Kcal and 11.3g protein.

DATA ANALYSIS AND INTERPRETATION

SECTION-I: Frequency and percentage distribution of 3-5 years children according to their Demographic Variables in Experimental group and control group.

Table1.1 Frequency and percentage distribution of 3-5 years children according to their demographic variables in experimental group (N=30)

S.No.	VARIABLE	FREQUENCY	PERCENTAGE
I	Age of children		
1	3.1 - 3.5 years	17	56.7
2	4 y 3.6 – 4 years	8	26.7
3	4.1-4.5years	2	6.6
4	4.6-5years	3	10
II	Gender of the children		
1	Male	8	26.7
2	Female	22	73.3
III	Education of Mothers		
1	Illiterate	0	0
2	Primary	12	40
3	High School (10 th)	17	56.7
4	Higher Secondary (12th)	1	3.3

5	Graduate	0	0
IV	Monthly income of family		
1	Below 5000/Rs	0	0%
2	5001-10000 / Rs	18	60%
3	10001-15000 / Rs	12	40%
4	More than 15000 / Rs	0	0%
V	Birth weight of the children		
1	1.5 – 2 kg	0	0
2	2.1 – 2.5 kg.	14	46.7%
3	2.6 – 3 kg	16	53.3 %
4	3.1kg and above	0	0
VI	Exclusive breast feeding continued till		
1	5 months	3	10%
2	6 months	26	86.7 %
3	More than 7months	1	3.3
VII	Weaning start from		
1	4-6 months	29	96.7
2	7-8months	1	3.3
3	9-10month	0	0
VIII	Meal schedule		
1	Two time in a day	19	63.4
2	Three time in a day	4	13.3
3	Four time in a day	7	23.3
4	More than four time in a day	0	0
IX	Type of food consume		
1	Vegetarian	19	63.4
2	Non- Vegetarian	4	13.3
3	Eggetarian	7	23.3

Table 1.2 Frequency and percentage distribution of 3-5 years children according to their demographic variables in control group .

N = 30

S.N.	VARIABLE	FREQUENCY	PERCENTAGE
I	Age of children		
1	3.1 - 3.5 years	18	60
2	4 y 3.6 – 4 years	8	26.7
3	4.1-4.5years	3	10
4	4.6-5years	1	3.3
II	Gender of the children		
1	Male	11	36.7
2	Female	19	63.3
III	Education of Mothers		
1	Illiterate	0	0
2	Primary	4	13.3
3	High School (10 th)	19	63.4
4	Higher Secondary (12th)	6	20
5	Graduate	1	3.3
IV	Monthly income of family		
1	Below 5000/Rs	0	0
2	5001-10000 / Rs	20	66.7
3	10001-15000 / Rs	10	33.3
4	More than 15000 / Rs	0	0
V	Birth weight of the children		
1	1.5 – 2 kg	0	0
2	2.1 – 2.5 kg.	12	40
3	2.6 – 3 kg	17	56.7
4	3.1kg and above	1	3.3
VI	Exclusive breast feeding continued till		
1	5 months	0	0

2	6 months	26	86.7
3	More than 7months	4	13.3
VII	Weaning start from		
1	4-6 months	27	90
2	7-8months	3	10
3	9-10month	0	0
VIII	Meal schedule		
1	Two time in a day	7	23.3
2	Three time in a day	23	76.7
3	Four time in a day	0	0
4	More than four time in a day	0	0
IX	Type of food consume		
1	Vegetarian	18	60
2	Non- Vegetarian	2	6.7
3	Eggetarian	10	33.3

SECTION-II It deals with level of malnutrition among preschooler children in control and experimental group.

Section-II (A) It deals with level of malnutrition among preschooler children in control group.

Table no:-1.3 A It deals with level of malnutrition among preschooler in control group.

N=30

Category	Frequency (n)	Percentage (%)
Stunted	3	10
Wasted	5	16.66
Underweight	22	73.34

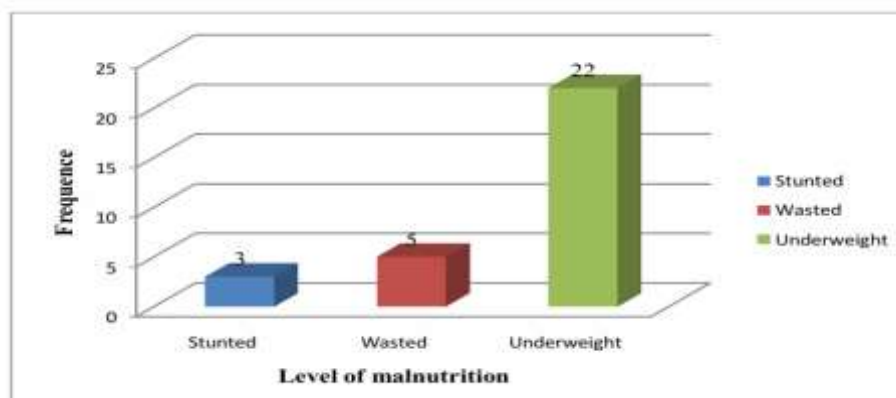


Figure no:-1.3. 1 :- Level of malnutrition among preschooler children

The data given in table no.-2 and Figure No.1 shows that out of 30 subject in control group the majority of children 22 (73.34 %) were underweight, 5 (16.66%) were wasted and 3 (10%) were stunted.

Section-II(B) It deals with level of malnutrition among preschooler children in experimental group.

Table no:- 1.4.2 It deals with level of malnutrition among preschooler in experimental group.
(N = 30)

Category	Frequency (n)	Percentage (%)
Wasted	7	23.33
Stunted	1	3.33
Underweight	22	73.34

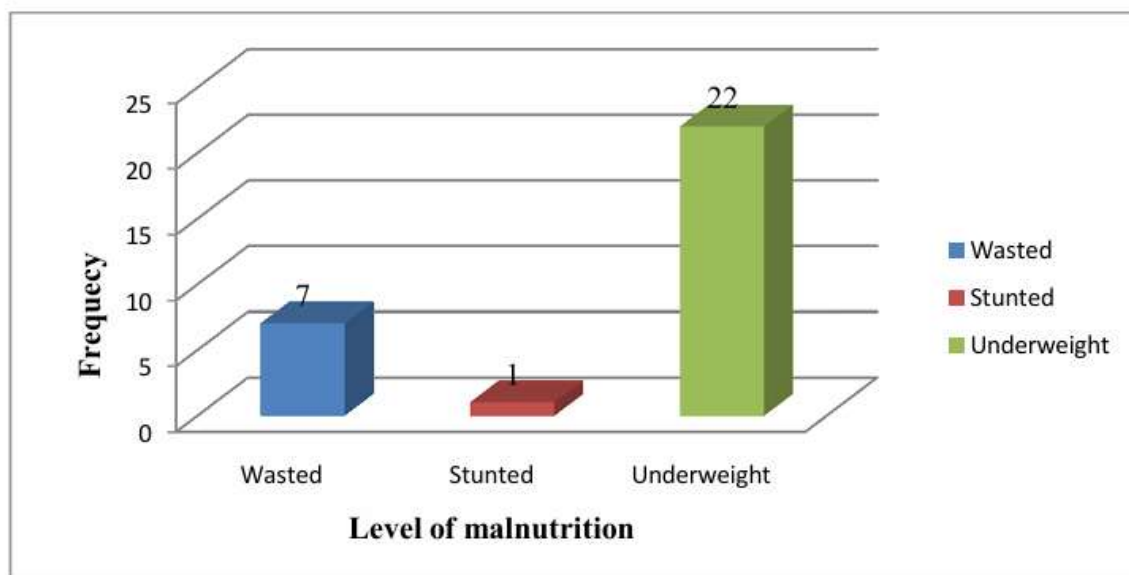


Figure no:-1.4. 2 :- Level of malnutrition among preschooler children

The data given in table no.-2 A and Figure No.2 shows that out of 30 subject in experimental group the majority of children 22 (73.34 %) were underweight, 7 (23.33%) were wasted and 1(3.33%) were stunted.

Section-III It deal with comparison of level of malnutrition among malnourished preschooler children in experimental group.

Table no:-1.5 Comparison of level of malnutrition among malnourished preschooler children in experimental group

(N = 30)

Level of malnutrition	Pre - interventional level of malnutrition		Post – interventional level of malnutrition	
	Frequency (n)	Percentage (%)	Frequency (n)	Percentage (%)
Normal	0	0	17	56.7
Wasted	7	23.33	2	6.7
Stunted	1	3.33	1	3.3
Underweight	22	73.34	10	33.3

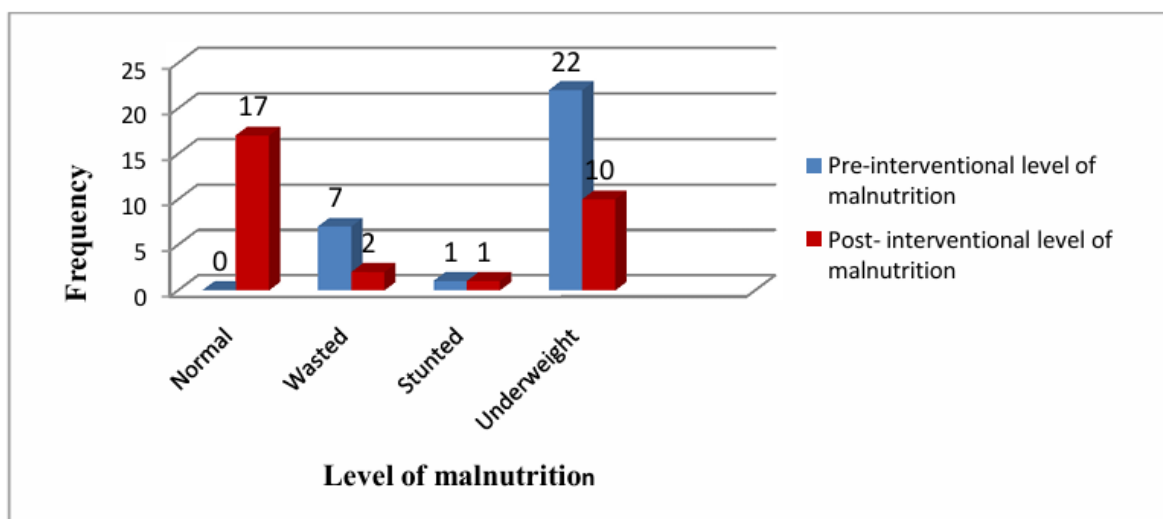


Figure no:-1.5.3 :- Comparison of level of malnutrition among malnourished preschooler children

The data given in table no.-4.3.23 and Figure No. 4.3.23 shows that out of 30 subject in experimental group in pre-interventional level of malnutrition the majority of children 22 (73.34 %) were underweight, 7 (23.33%) were wasted, 1(3.33%) were stunted and none of them were normal, in post-interventional level of malnutrition the majority of children 17 (56.7%) were normal, 10 (33.3%) were underweight, 2(6.7%) were wasted, and 1(3.3%) were stunted .

Section-IV It deal with comparison of mean pre existing and post interventional weight of malnourished preschooler children in experimental group .

Table no:-1.6 Comparison of mean pre- existing and post interventional weight of preschooler malnourished children in experimental group.

(N = 30)

Experimental group	Mean	Mean difference	SD	SD difference	Paired t value
Pre-existing weight	11.32	0.44	0.88	0.02	2.2
Post interventional weight	11.76		0.86		

The above table shows that in experimental group the mean pre-existing weight is 11.32 and SD is 0.88 whereas the mean post interventional weight is 11.76 and SD is 0.86 mean difference 0.44 and SD difference is 0.02 whereas calculated „t“ value is 2.2 which is more than the table value 1.69 at 0.05 level. Hence significant difference is found in the pre- existing mean weight and post interventional weight of malnourished preschooler children in experimental group.

Section – V Evaluate the effectiveness of Hyderabad mixture on weight gain among malnourished preschooler children in control and experimental group.

Table no: 1.6 Effectiveness of Hyderabad mixture on weight gain among malnourished preschooler children in control and experimental group.

(N = 60)

Group	Mean	Mean difference	SD	SD difference	Unpaired t value
Control group	11.31	0.45	0.71	0.15	2.25
Experimental group	11.76		0.86		

Significant at 0.05 level; Table value 1.67, df-58

The above table shows that in control group the mean post interventional weight is 11.31 and SD is 0.71 and experimental group the mean post interventional weight is 11.76 and SD is 0.86 whereas „t“ value is 2.25. Which is more than the table value at 0.05 level. Hence significant difference is found in the post

interventional mean weight of 3-5 years malnourished children in control and experimental group. This reveals effectiveness of Hyderabad mixture in improving the weight of malnourished children.

Section-VI (A) Association between pre-existing weight of malnourished preschooler children in control group with their selected demographic variables.

Table no:1.7 Association between pre-existing weight of malnourished preschooler children in control group with their selected demographic variables.

N = 30

S. No	Demographic variables for child	Stunted	Wasted	Underweight	Total	df	Chi Value (χ^2)	P-Value	Inference
I	Age of children								
1	3.1 - 3.5 years	1	2	15	18	6	1.21	12.59	NS
2	4 y 3.6 – 4 years	0	1	7	8				
3	4.1-4.5years	0	0	3	3				
4	4.6-5years	0	0	1	1				
II	Gender of the children								
1	Male	2	1	8	11	2	1.74	5.99	NS
2	Female	1	4	14	19				
III	Education of Mothers								
1	Illiterate	0	0	0	0	8	2.47	15.50	NS
2	Primary	0	1	3	4				
3	High School (10 th)	2	6	11	19				
4	Higher Secondary (12 th)	0	1	5	6				
5	Graduate	0	0	1	1				
IV	Monthly income of family								
1	Below 5000/Rs	0	0	0	0	6	0.08	12.59	NS
2	5001-10000 / Rs	2	5	13	20				
3	10001-15000 / Rs	1	2	7	10				
4	More than 15000 / Rs	0	0	0	0				

V	Birth weight of the children								
1	1.5 – 2 kg	0	0	0	0	6	8.26	12.59	NS
2	2.1 – 2.5 kg.	0	2	10	12				
3	2.6 – 3 kg	1	1	15	17				
4	3.1kg and above	0	1	0	1				
VI	Exclusive breast feeding continued till								
1	5 months	0	0	0	0	4	10.76	9.48	S
2	6 months	2	3	21	26				
3	More than 7months	0	0	4	4				
VII	Weaning start from								
1	4-6 months	1	2	24	27	4	1.5	9.48	NS
2	7-8months	0	0	3	3				
3	9-10month	0	0	0	0				
VIII	Meal schedule								
1	Two time in a day	0	1	6	7	6	0.92	12.59	NS
2	Three time in a day	2	5	16	23				
3	Four time in a day	0	0	0	0				
4	More than four time in a day	0	0	0	0				
IX	Type of food consume								
1	Vegetarian	1	2	15	18	4	2.81	9.48	NS
2	Non- Vegetarian	0	1	1	2				
3	Eggetarian	1	1	8	10				

Abbreviation

S = Significant

NS = Not significant

Description - **Table no. 1.7A** reveal that the association between pre-existing weight of malnourished preschooler children in control group with their selected demographic variables is statistically tested by

applying chi-square test the one variable were found significant and eight variable were not found significant. **Significant-** Exclusive breast feeding continued till

Not significant- Age, gender, education of mothers, monthly income of family, birth weight of the children, weaning start from, meal schedule and type of food consume

Section-VI (B) Association between pre-existing weight of malnourished preschooler children in experimental group with their selected demographic variables.

Table no: 1.8 Association between pre-existing weight of malnourished preschooler children in experimental group with their selected demographic variables

N = 30

S. No	Demographic variables for child	Stunted	Wasted	Underweight	Total	df	Chi Value (χ^2)	P-Value	Inference
I	Age of children								
1	3.1 - 3.5 years	1	5	11	17	6	4.58	12.59	NS
2	4 y 3.6 – 4 years	0	2	6	8				
3	4.1-4.5years	0	0	2	2				
4	4.6-5years	0	2	1	3				
II	Gender of the children								
1	Male	0	3	5	8	2	1.44	3.84	NS
2	Female	1	4	17	22				
III	Education of Mothers								
1	Illiterate	0	0	0	0	8	1.87	15.50	NS
2	Primary	1	3	8	12				
3	High School (10 th)	0	5	12	17				
4	Higher Secondary (12th)	0	0	1	1				
5	Graduate	0	0	0	0				
IV	Monthly income of family								
1	Below 5000/Rs	0	0	0	0	6	1.64	12.59	NS
2	5001-10000 / Rs	1	2	15	18				
3	10001-15000 / Rs	0	2	10	12				

4	More than 15000 / Rs	0	0	0	0				
V	Birth weight of the children								
1	1.5 – 2 kg	0	0	0	0	6	4.01	12.59	NS
2	2.1 – 2.5 kg.	0	0	14	14				
3	2.6 – 3 kg	1	3	12	16				
4	3.1kg and above	0	0	0	0				
VI	Exclusive breast feeding continued till								
1	5 months	0	1	2	3	4	1.24	9.48	NS
2	6 months	0	3	23	26				
3	More than 7months	0	0	1	1				
VII	Weaning start from								
1	4-6 months	2	5	22	29	4	9.78	9.48	S
2	7-8months	0	0	1	1				
3	9-10month	0	0	0	0				
VIII	Meal schedule								
1	Two time in a day	2	4	13	19	6	1.52	12.59	NS
2	Three time in a day	0	1	3	4				
3	Four time in a day	0	1	6	7				
4	More than four time in a day	0	0	0	0				
IX	Type of food consume								
1	Vegetarian	2	3	14	19	4	2.9	9.48	
2	Non-Vegetarian	0	1	3	4				
3	Eggetarian	1	3	3	7				

Abbreviation

S = Significant

NS = Not significant

Description –

Table no. 1.7 B reveal that the association between pre-existing weight of 3-5 years malnourished children in experimental group with their selected demographic variables is statistically tested by applying chi-square test the one variable were found significant and eight variable found were not found significant.

Significant- Weaning start from 80 Not significant- Age, gender, education of mothers, monthly income of family, birth weight of the children, exclusive breast feeding continued till meal schedule and type of food consume.

RESULT

The result of the study in experimental group revealed that the mean pre-existing weight is 11.32 and SD is 0.88 whereas the mean post interventional weight is 11.76 and SD is 0.86 mean difference 0.44 and SD difference is 0.02 whereas calculated 't' value is 2.2 which is more than the table value 1.69 at 0.05 level. Hence significant difference is found in the pre-existing mean weight and post interventional weight of malnourished preschooler children in experimental group.

There is significant association between pre-existing weight of malnourished preschooler children in experimental group with their selected demographic variables such as age, gender, education of mothers, monthly income of family, birth weight of the children, exclusive breast feeding continued till, weaning start from, meal schedule and type of food consume.

CONCLUSION

The finding of the study support the need to provide Hyderabad Mixture among malnourished preschooler children. This study has proved that the malnourished preschooler children have increase weight due to the effectiveness of Hyderabad Mixture. Thus for the future outlook, this will be helpful to increase weight due to effectiveness of Hyderabad Mixture.

LIMITATIONS

1. The study will be limited to 3-5 years malnourished children
2. The study will be limited to only selected urban area Jabalpur
3. The study period will be limited to four weeks

REFERENCES

Books

1. Basavanthappa. B.T. (2003). *Nursing Research*. (1st edition). New Delhi: Jaypee Brothers Medical Publishers. Reprint.
2. Dhaar GM, and Robbani, I.(2008). *Foundations of Community Medicine*. (2nd edition). Noida, Elsevier Publications.

Journals

1. Brawn (2003), "Nutritional status of Adolescents in Rural set up" *Indian journal of pediareisc*,3(2):27-29

2. Chakraborty (2005), “Nutritional problems in urban slum children” *Indian Journal of Pediatrics*.5(7):682-688

Published Theses

1. Beulab Angeline Vidhya, (2006) “A study was done to assess the effectiveness of ragi porridge in correction of iron deficiency anemia, Punjab”
2. Brown and Romana, (2007) “A comparative study was conducted to assess the effect of Zinc delivered in a fortified food or liquid supplement on the growth, morbidity and plasma zinc concentration of young Peruvian children”

Net References

1. Bapen,(2005). The importance of supplementary foods for malnutrition Retrived 22 June 2011from www.WHOgrowthstandards.com
2. Mohena.(2003). Indian under five mortality due to malnutrition Retrived 15 Mar 2011 from www.nutritionfoundationofindia.com