ASSESSMENT OF MALNUTRITION AND REMEDIAL MEASURES TO IMPROVE THE QUALITY OF LIFE OF CHILDREN OF CENTRAL ORISSA - A Survey Conducted in Cuttack District of Orissa

Sunita Mishra

ABSTRACT

Semi starvation is referred as undernutrition and undernutrition leads to insufficient and abnormal growth in children. Undernutrition is largely prevalent in socio-economically backward masses. PEM (Protein Energy Malnutrition) is determined by dietary status, health conditions and lifestyle of the individual. Under nutrition is an important cause of childhood mortality and morbidity.

Key words: Under nutrition, poverty syndrome, nutritional status, nutritional education, PEM, Nutrient deficiency, safe handling of food, Malabsorption.

INTRODUCTION:

Undernutrition denotes condition in which individuals are semi starved. It means lesser intake of nutrients by the individuals as compared to the actual need of the individual. It is characterized by lethargy, mental and physical starvation low weight in relation to height or other skeletal indices, diminished skin fold; exaggerated and skeletal prominences and loss of elasticity of skin. The etiology under-nutrition, widely used to denote socially and economically deprived population around the world, is associated with a number of related consistent factors termed as "poverty syndrome". The term PEM denotes the protein energy malnutrition, which is caused due to deficiency of energy (total calories) or shortage of protein. It also results in retarded physical and mental health (growth and development ) of children.

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The major attributes of these are:-

- Inadequate income to meet basic needs of food, shelter & clothing.
- Quantitatively & qualitatively deficient diets.
- Poor environment, poor access to safe water & poor sanitation.
- Poor access to health care.
- Large family size & high illiteracy rate especially among female.
- Ignorance
- Lack of awareness about food safety and food security.

In India, there is a need to develop practical and operationally feasible guidelines within the existing resources, which can be implemented for effective home based care and treatment of children suffering from severe under nutrition. The ultimate determinant of nutritional status is the availability of all essential nutrients required for normal growth, development, maintenance, repair & functioning of the organism at cellular level in adequate level, in proper combinations & at appropriate times. This is determined by the diet providing adequate nutrition & conditions that effect requirement absorption & assimilation & utilization of the nutrients. There is a correlation between the levels of dietary inadequacy in household & community with the degree of severity of malnutrition.

Causes of malnutrition:

1- The severity of malnutrition is aggravated by conditions of infections & parasitic diseases. There are further determined by the severity, nature, duration & frequency of infection & effectiveness of the measures to prevent or treat them.

2- Where diet of entire household are being used as yards tick in assessment of community nutritional status rather than of individuals within the family.

3- Except in acute famines, the current nutritional status of a community is other reflection of its erstwhile rather than its present dietary status.

Objectives:

- Development of specific intervention programmes to improve the condition of undernutrition
- To know about percentage of malnourished and well nourished children between 0-5 years.
- To give nutritional suggestion to mothers of undernourished children, through dietary management.
- Initiating interventional programmes like supplementary feeding programmes, mid-day meal in schools,
- Iron / iodine supplementary programme, Vitamin -A supplementary programme etc.
- Improving the sanitation, cleanliness, and providing safe drinking water
- Motivating the mothers of undernourished children towards family planning, immunization and food safety measures.

**Factors Associated with Malnutrition in Children**

- Malnutrition
  - Inadequate
    - Dietary
    - Disease
  - Causes:
    - Immediate
      - Insufficient Household Food Security
      - Inadequate Women & Child Care
      - Insufficient Health Services & Unhealthy Environment
      - Inadequate Education
    - Basic Causes
      - Resources & Control Human, Economic & Organization
        - Political & Ideological Superstructure
        - Economic Structure
      - Potential Resources
Scenario of Orissa:

In socio-economic context Orissa is still considered to be a backward state although there have been attempts on recent past to achieve faster growth and development as per 1991 census the population of the state was 31.7 Million and the decadal population growth was 20.1 percent in the preceding decade. Infant mortality role of Orissa was high it was 114 per 1000 live birth compared to 79 in all India. The child population of Orissa was about 10 million malnutrition among of the children of Orissa is widespread. Anthropometric measurements of children aged 1-5 years using Gomez classification revealed 36% as moderately malnourished and 12% severely malnourished. The study area is confined to central Orissa, which falls under the coastal belt of the state.

MATERIAL AND METHOD:

The study was conducted in a primary school in Cuttack Orissa between 2001-02. The school had a total student strength of 530. The study was conducted by interviewing the mothers of the students. The full names and addresses of the students were taken from school records. A schedule was prepared incorporating all the desired information for collection of data, which included the general information on the family socio economic and environment conditions mother education, past medical history, immunization record, Anthropometric measurement, dietary manage went etc. Arrangements are invade to collect and fill up performa of those children whose mother’s were illiterate. Children were examined in the school premises. The age, sex, height, weight, chest and head circumferences were collected and dietary management was found through Gomez classification. The body mass index (BMI) was calculated and analysed and then classified into malnourished and well nourished as per criteria given by W.H.O. Each child was then thoroughly examined and a final schedule was prepared gathering information mainly on the following aspects like various diseases and infections prevalent in childhood like worm, diarrhoea, respiratory tract infections shin infections, dental caries, night blindness, vitamin A deficiency, calcium, Iron and Vit. C deficiency.

RESULT:

The analysis of data is based on 134 male and 158 females. Total numbers of 292 students’ were studied. Out of the 292 students about were found to be undernourished.

<table>
<thead>
<tr>
<th></th>
<th>Sex</th>
<th>No. of Children</th>
<th>Malnourished</th>
<th>Well nourished</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male</td>
<td>134</td>
<td>72</td>
<td>53.73</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>158</td>
<td>118</td>
<td>74.68</td>
</tr>
<tr>
<td></td>
<td></td>
<td>292</td>
<td>190</td>
<td>65.10</td>
</tr>
</tbody>
</table>

# Multiple responses were obtained
It was found that the incidence of malnutrition was higher in females (74.68%) as compared to males (53.79%). Thus malnutrition was higher in both the sex. Similar findings were observed by Sumedha Joshi et al.2

The relationship between maternal education and under nutrition was studied in Table 2. It was found out that maternal education of the mother had a significant effect on the growth and development of the child. The percentage was higher among illiterate mothers.

**TABLE- 2**: Maternal education and under nutrition in the children.

<table>
<thead>
<tr>
<th>Sex</th>
<th>No. of Children</th>
<th>Maltreated No.</th>
<th>Maltreated %</th>
<th>Well nourished No.</th>
<th>Well nourished %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary</td>
<td>83</td>
<td>44</td>
<td>53.01</td>
<td>39</td>
<td>46.9</td>
</tr>
<tr>
<td>Secondary</td>
<td>53</td>
<td>24</td>
<td>45.28</td>
<td>29</td>
<td>54.72</td>
</tr>
<tr>
<td>Illiterate</td>
<td>156</td>
<td>115</td>
<td>73.72</td>
<td>41</td>
<td>26.28</td>
</tr>
<tr>
<td></td>
<td>292</td>
<td>183</td>
<td>62.67</td>
<td>109</td>
<td>37.33</td>
</tr>
</tbody>
</table>

# Multiple responses were obtained

It was found out that the percentage of male nutrition decreased with education of mother's malnutrition was seen to be 53.0% in primary education, and the percentage was 73.78% to those mothers who were illiterate. Similar study was conducted by BK Mishra3.

**TABLE 3**: Diseases predominantly suffered by students

<table>
<thead>
<tr>
<th>Disease</th>
<th>No of Students</th>
<th>Percentage of students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diarrhoea</td>
<td>56</td>
<td>19.18</td>
</tr>
<tr>
<td>Upper (URTI) respiratory injection</td>
<td>51</td>
<td>17.46</td>
</tr>
<tr>
<td>Vit A deficiency</td>
<td>32</td>
<td>10.96</td>
</tr>
<tr>
<td>Worm infestation</td>
<td>54</td>
<td>18.49</td>
</tr>
<tr>
<td>Skin infection</td>
<td>07</td>
<td>2.40</td>
</tr>
<tr>
<td>Dental Carries</td>
<td>51</td>
<td>17.46</td>
</tr>
<tr>
<td>Anemia</td>
<td>41</td>
<td>14.05</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>292</strong></td>
<td><strong>100.00</strong></td>
</tr>
</tbody>
</table>

# Multiple responses were obtained

It was found out that under nutrition, which leads to malnourishment had a significant role in relation to diseases suffered by the students. About 19.18% of children had diarrhoea; about 17.40% had URTI, and 10.96% and Vit A deficiency 14.85% had Anaemia, 2.40% diseases like skin infection, 17.46, had Dental Carries, about 1849%, had worm infestation. Table-4 shows that 90% percent children were found normal. About 0.68% was found to has moon face pigmentation was found in 19.53 percent children and frontal bossing was found in 1.02 percent children. It can
be conceded that pigmentation may be due to bacterial infection and protein energy malnutrition and frontal bossing may be due to mineral deficient malnutrition.

**TABLE- 4:** Distribution of different clinical sign of face among Malnourished and well-nourished children

<table>
<thead>
<tr>
<th>Clinical Signs</th>
<th>No. of Children</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal</td>
<td>230</td>
<td>78.77</td>
</tr>
<tr>
<td>Moon Face</td>
<td>02</td>
<td>0.68</td>
</tr>
<tr>
<td>Pigmentation</td>
<td>57</td>
<td>19.53</td>
</tr>
<tr>
<td>Frontal bossing</td>
<td>03</td>
<td>1.02</td>
</tr>
<tr>
<td>Total</td>
<td>292</td>
<td>100</td>
</tr>
</tbody>
</table>

The well-nourished children are 132 in number out of which 48.4% of Children were found to be having infections, while 51.5% had not having infections while 64.3% of malnourished children had one or more types of infection. Thus the situation is quite alarming.

**TABLE - 5 :** Table showing the Coexistence of under nutrition and infection.

<table>
<thead>
<tr>
<th>Type of Subject</th>
<th>No of Children</th>
<th>Having Infection</th>
<th>Not having Infection</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>No</td>
<td>%</td>
</tr>
<tr>
<td>Well-nourished</td>
<td>132</td>
<td>64</td>
<td>48.48</td>
</tr>
<tr>
<td>Malnourished</td>
<td>160</td>
<td>103</td>
<td>64.37</td>
</tr>
<tr>
<td>Total</td>
<td>292</td>
<td>167</td>
<td>57.19</td>
</tr>
</tbody>
</table>

**DISCUSSION AND CONCLUSION:**

It was found out that out of 292 children, about 65% of children were undernourished. Undernutrition was found to be higher in females (74.68%) Composed to the males (53.9%). The difference may be due to better treatment given made children who receive better nutrition and attention than the female. Similar observation were found in the study conducted by Sunita Mishra in her book “feeding practices of preschool children”(4) And by Bharatiya Vidya Sansthan Publishers and Book sellers. Similar observation were found in the study conducted by Mishra Sunita, Mishra B.K., Tandan J in “prelacteal feeding practices of children : a case study on children of Cuttack (Orissa)”(5), Indian J. Preventive Social Med., 1997, 28 (3 & 4) 748,78. It was observed that about 73.7% of the mothers were illiterate. It was seen that natural education played a significant role in preventing malnutrition in a child. Better education makes the mother aware of the importance of family planning, sanitary handling of food & dietary management, balanced diet, immunization etc.

It was observed that out of 65.1% of malnourished children they were suffering from various diseases and infections predominantly diarrhoea, URTI, dental carries, Anemia, worm infection, Vit. A deficiency and skin infections. Thus undernutrition adversely affects the immune status and maker the malnourished children more
vulnerable to infection. Similar observations were also made by Sunita Mishra and SC Mohapatra who observed that the maternal education, food habits and nutritional status had severe effect on undernutrition thus the present study revealed higher prevalence of malnutrition amongst undernourished children.

RECOMMENDATION:

1. There is a need to focus on the nutrition education and rearing practices of children.
2. There is a need for early initiation of breast-feeding to prevent malnutrition because it benefits both the mother and the child.
3. There is a need for promotion of breastfeeding and weaning practices, motivating the family for ANC care and Immunization of the child.
4. Frequent diet and nutritional survey
5. Initiation of nutrition interventional programmes like supply programmes etc. Vit. A prophylaxis programme. Fortification of foods like iodizing the salt, calcium and other vitamins.
6. Nutrition related health activities
7. Increasing food production and ensuring proper distribution of food.

REFERENCES: