ABSTRACT

Childhood plays a vital role in the promotion of mental health. As viewed by the experts, in the normal child, the vast array of genetic, neuro- chemical, physiological, psychological, interpersonal and social processes of development follow a well-orchestrated course that transforms the curious infant into a competent adult. However, in less fortunate children, development goes awry. As a result, mental, Behavioral, and development disorders occur in every socioeconomic, racial and cultural group in the world. During the years from 2 to 6, often called the preschool years, children make the transition from toddlerhood to childhood. India, being a developing country needs healthy children with better brain power. But it is quite unfortunate that our country is the home of large population of malnourished children in the world. Four hundred million suffer daily, which is a greater problem than in Sub-Saharan Africa. Substantial improvements have been made in health and well being since India’s independence since 1947 but still large number of children under the age of five are malnourished.

Malnutrition is an impairment of health resulting from deficiency, excess or imbalance of nutrients. It is defined as “A pathological state resulting from a relative or absolute deficiency or excess of one or more essential nutrients.”

In India, NFHS-4 (2015-16) data shows the following:

- 38 percent of children below five years (urban: 31%, rural: 41%) are stunted (low height for age).
- 21 percent (urban: 20%, rural: 22%) are wasted (low weight for height).
- 36 percent (urban: 29%, rural: 38%) are underweight (low weight for age).

To address malnutrition in preschool children combination of interventions are required, which involve improved food availability, adequate consumption of nutritious food, full immunization and bi-annual Vitamin A supplementation, frequent appropriate and active feeding for children during and after illness, including oral rehydration with zinc supplementation during diarrhoea and increased awareness.
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amongst caregivers about nutrition and health care. Also proper implementation and effective monitoring of those interventions are required for achieving goals and targets of SDG by 2030. Keeping this background in consideration present study was performed in rural areas of Mirzapur district, in which knowledge and awareness was given to mothers of malnourished children in order to reduce malnutrition among them.

OBJECTIVES OF THE STUDY:

1. To study the socioeconomic profile of family of preschool children (24 months - 42 months).
2. To assess the nutritional status of preschool children.
3. To examine the association between severity of malnutrition and family background of children as well as various factors associated with malnutrition.
4. To develop educational module for educating mothers for reducing malnutrition.
5. To assess the influence of nutritional advice given to mothers in order to bring improvement in the nutritional status of their malnourished children.

METHODOLOGY OF THE STUDY:

For present study all pre school children of Pahari Block (rural area of Mirzapur district) were constituted as population. There are total 12 blocks in Mirzapur district. Out of 12 blocks 1 block named “Pahari” was selected randomly. Pahari block is further divided into 45 Panchayats. Among 45 panchayats 4 panchayats named “Saraiyan, Sindhora, Pasaiya and Newadhiya” were selected randomly.

Furthermore, Saraiyan Panchayat consists of 3 villages; Sindhora and Pasaiya each panchayat consists of 1 village and Newadhiya Panchayat consists of 2 villages.

Researcher has selected 2 villages from Saraiyan Panchayat, 1 village from Newadhiya Panchayat by using simple random sampling. Whereas, both villages (Sindhora and Pasaiya) were selected. Therefore, total number of villages selected was 5 from 4 Panchayats.
Sample size: Total children of all selected villages were included for the study. There were 44 children in Bairi village, 68 children in Saraiya village, 105 children in Sindhora Village and 96 and 60 children were in Pasaiyan and Newadhiya villages respectively. Number of total children were 373 but at the time of survey 303 children were available. Therefore, sample size selected for the study was 303.

Research Design: Research design of the present study includes: Pre- intervention, Intervention and Post- intervention.

Pre- intervention: In pre- intervention nutritional status of children was assessed and data were collected from their mothers in order to find out the root causes of malnutrition in that area. Three hundred three (303) pre school children whose age was 24-42 months and their mothers were included for pre- test of the study. Nutritional status of children has been determined by anthropometric measurements i.e. weight (kg), height (cm), mid upper arm circumference (cm), head and chest circumference (cm). Also clinical signs and symptoms (Hairs, Face, Eyes, Mouth and Skin) which are associated with child malnutrition was observed. A pre designed and pre tested questionnaire- cum- interview schedule was developed by the researcher for collecting background information of children.

Intervention: In this part of the present study mothers of malnourished children were given education related to various factors which were responsible for malnutrition in their children.

Post- intervention: This part of the study include post data collection after exposure of intervention programme. After imparting education effectiveness of educational module was re- assessed after 6 months to check the improvement in the nutritional status of malnourished children.

RESULTS OF THE STUDY:

Findings of the study shows that according to weight for age 42.9% children were mildly underweight, 22.8% were moderately underweight and only 0.3% were severely underweight. According to height for age 54.8%, 16.2% and 2.6% were mildly, moderately and severely stunted respectively. Regarding weight for height 80.5% children were normal, while 17.8% and 1.7% were mildly and moderately wasted respectively. 15.8% children were malnourished according to MUAC, whereas 18.2% and 45.21% children were malnourished according to Jelifee ratio and K.M
According to different signs and symptoms associated with malnutrition, 30 (9.9%) children were showing lack of natural shine, dull and dry hair, 08 (2.6%) were having scaling of skin around nostrils on the face, 19 (6.3%) were having loose wrinkled skin, and 42 (13.9%) were having dry skin.

Maximum 87.2% and 90.0% children of illiterate mothers and illiterate fathers were underweight respectively (P<0.001). Children having normal nutritional status whose mothers were in service (90.0% children were normal), fathers were in government job (64.8% children were normal) and in agriculture work (65.0% children were normal) (P<0.001). Children who belonged to nuclear family were more underweight (66.5%) than the children who belonged to joint family i.e. 65.0% (P<0.01). Underweight significantly decreases with rise in socio-economic status i.e. 27.8% in high SES followed by middle income group (45.1%) and low income group (81.5%), (P<0.001). Results showed that prevalence of underweight significantly increases with increase in family size (81.2%; among the family with 6-10 members); (P<0.001).

Children who were washing their hands after defecation with clay, 91.8% children were undernourished. Also, children who were using only water for hand wash before taking meal, 82.3% were undernourished (P<0.001). Children who had no definite time of cutting their nails were more liable towards underweight (74% were undernourished) (P<0.001). Prevalence of underweight was maximum (95.6%) among the children whose mothers were using clay after defecation and also in children of those mothers who were using only water before cooking/feeding their child as source of cleaning their hands 983.3%) (P<0.001). Socio-cultural and demographic conditions exhibited that Mothers whose age was less than 19 years at the time of first birth were having more underweight children (73.6%); (P<0.001). Also the prevalence of underweight was very high among the mothers who were having more than 3 children (94.2%); (P<0.001). Maximum Children with birth interval of more than 3 years were normal (86.9%), in comparison to those children whose birth interval was less than 3 years (28.6% only); (P<0.001). All the children who did not take colostrum were underweight (P<0.05). Maximum children were underweight who had not received exclusive breastfeed (96.8%; 64.5% moderate &
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32.3% mild) and whose duration of exclusive breastfeeding was less than 5 months (67.4%; 23.8% moderate & 43.6% mild); (P<0.001). Children whose Nutrient Intake Ratio (NAR) was <80 were more likely to be underweight than the children whose NAR was 80-100 and ≥100. (the difference was statistically highly significant i.e P<0.001). Majority (84.7%) children had been found underweight (36.4% moderate & 48.3% mild) who suffered from any ailment. The association was highly significant (P<0.001). Moreover, maximum (73.3%, moderate only) children were underweight whose mothers were not using any type of precaution for protection from mosquitoes (P<0.01).

In this study, after giving education, daily consumption of green leafy vegetables and other vegetables was increased from 86% to 94%. Consumption of fruits twice in a week was increased from 27% to 67% and 31% to 42% as well as milk and milk products consumption was increased from 7% to 29% twice in a week (0.001). After imparting education calorie intake of 100 children was increased from 1002.0 kcal to 1172.61 kcal, carbohydrate intake was increased from 157.07 gm to 204.82 gm, protein intake increased from 15.05 gm to 19.60 gm, fat intake increased from 26.95 gm to 29.74 gm, Calcium, Iron and Zinc intake was increased from 404.77 mg to 502.53 mg, 9.45 gm to 11.81 gm and 4.36 mg to 5.26 mg respectively (0.001). 92% mothers who were not using any method for purification of water before giving education but after giving education the percentage was decreased to 35% (0.001).

In intervention group before imparting education 41% children were using soap for washing their hands after defecation, 16% were using soap for cleaning their hands before taking meal and nail cutting of 37% was once in a week, but after imparting education their percentage was increased to 73%, 69% and 68% respectively. (P<0.001). The usage of Soap as a material by mothers for cleaning their hands after defecation increased from 42% to 79% and soap as a material of cleaning their hands before cooking or feeding their children increased from 28% to 71%. (P<0.001). 40% mothers of intervention group were cutting their nails once in a week and 39% were disposing household waste material in dustbin before education but after education the percentage was improved to 67% and 66% respectively. (P<0.001). Before intervention 49% children fell sick within a month and their
number was decreased to 27% after intervention (P<0.001). Average weight gain of the children of intervention group was 2.64 kg (from 10.45 to 13.09) ; (P<0.001).
Overall, out of 100 children 29 children changed their nutritional grade. 19 children restored their normal weight for age, 9 children improved to mild from moderate and 1 child shifted to moderate from severe.

**RECOMMENDATIONS:**
Study suggests that prevention is the best way to combat malnutrition. Health education related to antenatal care, family planning settings (including number of children and spacing between two children etc.), importance of safe drinking water, hand washing practices with soap, use of sanitary toilets rather than open defecation, maintaining proper sanitation of toilets, kitchen etc., proper care during diseases and paying proper attention on child feeding practices should be imparted to not only mothers but to fathers as well as also to the family members of children will be more effective in combating malnutrition.