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Maternal Factors Associated with Nutritional Status During Early Childhood in Nagla Qila and Panjipur Villages of Aligarh District

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Abstract

Introduction: India is home to the largest number of children in the world, significantly larger than the number in China (World population prospects: 2008). The country has 20 percent of the 0-4 year's child population of the world. Globally, more than one third of under-five deaths are attributable to under-nutrition (UNICEF, 2009). About 20% of children under age five in India are wasted, 43 % underweight and 48 % stunted (NFHS-3, 2005-06). In terms of number about 54 million children under five years in India are underweight which constitutes about 37 % of the total underweight children in the world (SOWC, 2010). In India, 25 million children under five years are wasted and 61 million children are stunted, which constitutes 31 % and 28 % of wasted and stunted children respectively in the world (UNICEF, 2009).

Methodology: The present study was conducted in two villages of Jawan Block, Aligarh District. Purposive sampling technique was used to collect the data. Self-prepared structure interview schedule was the tool for data collection. Anthropometric indices- weight for age and height for age were calculated for each subject and compared with Gomez' and Waterlow's classifications respectively to grade the children in different grades of malnutrition.

Results and Discussion: The findings of the study revealed that majority of children (79%) were underweight, with mostly (33%) falling under grade three malnutrition category and only 21% were normal according to Gomez' classification. In case of stunting- majority (68%) of children were stunted but out of this majority (26%) were mildly impaired; remaining 32% were normal. Based on the Gomez' classifications, maximum percentage of children (71%) were underweight whose mothers were illiterate. According to Waterloo' classification of height for age, it was found that majority i.e. 62% children of illiterate mothers were stunted. Majority i.e. 74 % children were found underweight whose mothers did not go for prenatal check-ups. Majority of children (12%) were under the normal category of height for age whose mothers went for prenatal checkups.

Conclusions: Women need to be convinced and motivated that the ongoing reproductive and child health programme is cost effective (almost free), and is to be

utilized solely for their children's benefits. Antenatal visit has to be made compulsory as it is an important point of contact between health services and the pregnant mothers. Nutrition education programs need to be formulated to impart knowledge among mothers.

Keywords: Underweight, stunting, prenatal check-ups

Introduction

India is home to the largest number of children in the world, significantly larger than the number in China (World population prospects: 2008). The country has 20 percent of the 0-4 year's child population of the world. Globally, more than one third of under-five deaths are attributable to under-nutrition (UNICEF, 2009). About 20% of children under age five in India are wasted, 43 % underweight and 48 % stunted (NFHS-3, 2005-06). In terms of number about 54 million children under five years in India are underweight which constitutes about 37 % of the total underweight children in the world (SOWC, 2010). In India, 25 million children under five years are wasted and 61 million children are stunted, which constitutes 31 % and 28 % of wasted and stunted children respectively in the world (UNICEF, 2009). It is now being recognized that the greatest vulnerability to nutritional deficiencies is during the period of the mother's pregnancy and continues until age two. Therefore, there is a critical window of opportunity to prevent under-nutrition – while the mother is pregnant and during child's first two years of life- when proven nutrition interventions offer children the best chance to survive and reach optimal growth and development; after that window closes, the damage to children is largely irreparable. There is a growing emphasis on the problem of stunting (measured by height for age) and anaemia in the first two years of life as they not only impact child survival and growth, but also result in diminished cognitive development, school performance and physical development. This also has an adverse inter-generational impact in terms of productivity, poverty and for woman- higher risk of pregnancy related complications and low birth weight babies which in turn, reinforces the vicious cycle of under nutrition.

Objectives of the Study

1. To assess the nutritional status of children (0-6 years) with the help of defined anthropometric techniques.
2. To study the impact of various maternal factors associated with nutritional status of children in early childhood (0-6 years).

Methodology

The present study was conducted in two villages of Aligarh District namely- Nagla Qila and Panjipur. Those villages were under Jawan Block. Jawan Block falls under Ghabana Tehsil of Aligarh District. A sample of 100 children was

selected for the study – 50 from Nagla Qila and 50 from Panjipur. Purposive sampling technique was used in sample selection. A self prepared structured interview schedule was prepared by the researcher to obtain the information about various maternal factors associated with nutritional status of the studied subjects. Respondents were the mothers of the children. Height and weight measurements of the children were taken by standardized techniques recommended by World Health Organization. Anthropometric indices - weight for age and height for age were calculated for each subject and compared with Gomez' and Waterlow's classifications respectively to grade the children in different grades of malnutrition. The standard height and weight of boys and girls given by NCHS (National Centre for Health Statistics, 1999) were used for calculating the weight for age and height for age. Chi-square test was applied for statistical analysis to find out the association between dependent and independent variables.

Results and Discussion

In the present study nutritional assessment was done through anthropometric techniques and children were classified into different grades of malnutrition according to Gomez' and Waterlow' classification. The relationship between maternal factors (mothers' literacy level, prenatal check-ups of mothers, intake of iron and folic acid tablets by mothers during pregnancy,) and nutritional status of children in early childhood, was examine through chi-square test.

The findings of the study revealed that majority of children (79%) were underweight, with mostly (33%) falling under grade three malnutrition category and only 21% were normal according to Gomez' classification. This means that malnutrition was very prominent on the basis of weight for age. Similar trend was observed in case of stunting- majority (68%) of children were stunted but out of this majority (26%) were mildly impaired; remaining 32% were normal. These findings indicated that stunted growth was more prevalent and normal growth was less prevalent according to Waterlow' classification.

Based on the Gomez' classification, maximum percentage of children (71%) were underweight whose mothers were illiterate and only 5% children of illiterate mothers were found normal whereas 16 % children of literate mothers were found under the normal category of weight for age. To examine the relationship between mothers' education level and weight for age of children, chi-square test was applied. Calculated value of chi-square was 39.6962 and table value of chi-square at 5% level of significance and 1 degree of freedom was 3.841, which was less than the calculated value, so null hypothesis was rejected and alternative hypothesis was accepted i.e. more children were under weight whose mothers were illiterate. This clearly showed that mothers' literacy level was significantly associated with nutritional status (weight for age) of children. According to Waterloo' classification of height for age, it was found that majority i.e. 62% children of illiterate mothers were stunted and only 6 % children of literate mothers were found stunted. In

this case the calculated value of chi-square was 26.833 and the table value was 3.841(at 5% level of significance and 1 degree of freedom) which was less than the calculated value, so null hypothesis was rejected. It was revealed from the above findings that there was significant relationship between mothers' education level and height for age of children and illiteracy of mothers was directly related to stunted growth of children.

Prenatal check-ups include the antenatal care of the woman during pregnancy. The primary aim of prenatal check-ups is to achieve a healthy mother and a healthy baby at the end of pregnancy (park, 2006). In the present study, the impact of prenatal check-ups of mothers on nutritional status of children in early childhood was examined. On the basis of Gomez' classification, the findings of the study revealed that 74 % children were found underweight whose mothers did not go for prenatal check-ups and only 5% children were underweight whose mothers went for prenatal check-ups. To examine the relationship between prenatal check-ups of mothers and weight for age of children, chi-square test was applied. The calculated value of chi-square was 34.7159 and table value at 5% level of significance and 1 degree of freedom was 3.841, which was less than the calculated value, so null hypothesis was rejected and alternative hypothesis was accepted that more children were underweight whose mothers did not go for prenatal check-ups and there was significant relationship between prenatal check-ups of mothers' and weight for age of children. On the basis of Waterloo' classification, it was found that majority of children (12%) were under the normal category of height for age whose mothers went for prenatal checkups. The calculated value of chi-square in this regard was 12.1234 and table value of chi-square at 5% level of significance and 1 degree of freedom was 3.841, which was lesser than the calculated value. So null hypothesis was rejected and alternative hypothesis was accepted i.e. more children were stunted whose mothers did not go for prenatal checkups. There was significant association between prenatal check-ups of mothers and height for age of children in the early childhood years.

The findings of present study further revealed that majority of rural women (79%) had not taken the iron and folic acid tablets during pregnancy. On the basis of Gomez' classification, it was found that majority of children (74%) were underweight whose mothers had not taken the iron and folic acid tablets during pregnancy. To examine the relationship between IFA tablets intake by mothers during pregnancy and nutritional status (weight for age) of children, chi-square test was applied. Calculated value of chi-square was 48.8060 and table value at 5% level of significance and 1 degree of freedom was 3.841. Because calculated value was greater than the table value, so null hypothesis was rejected and alternative hypothesis was accepted that more children were underweight whose mothers had not taken the IFA tablets during pregnancy. According to Waterlow's classification, majority of children (62%) were found low height for their age whose mothers had not consumed iron and folic acid tablets during pregnancy

and maximum percentage of children (15%) were found normal according to height for age whose mothers consumed IFA tablets during pregnancy. When chi-square test was applied to examine the impact of IFA tablets consumption by mothers during pregnancy on height for age of children, it was found that calculated value of chi-square was 18.9913, which was lesser than the table value, so null hypothesis was rejected and alternative hypothesis was accepted i.e. more children were stunted whose mothers had not consumed IFA tablets during pregnancy. There was significant relationship between IFA tablets consumption by mothers during pregnancy and height for age of their children in early childhood.

Conclusion

Prenatal check-ups are necessary because doctors give valuable advice for maintaining the good health and nutrition during pregnancy and for the proper development of foetus. Ideally the mother should attend the antenatal clinic once a month during the first 7 months, twice a month during the next month and thereafter one a week, if everything is normal. If it is difficult to attend the antenatal clinic so often, a minimum of three visits covering the entire period of pregnancy are necessary during each trimester of pregnancy. Colostrums should not be discarded because it is the most suitable food for the baby. It prevents the baby against infections and also from diarrhoeal diseases. If the child is suffering from diarrhoeal diseases, food should not be restricted. The child should provided well cooked, soft, semisolid food and plenty of fluids.

Suggestions for Remedial Measures

There is a need to increase the programme focussed on chronic under-nutrition in particular. Marked reduction in child under nutrition can be achieved through improvement in women's nutrition before and during pregnancy, early and exclusive breastfeeding in the first six months of life and good quality complementary feeding with continued breastfeeding for children 6- 23 months old with appropriate micro-nutrient interventions. Following measures can be taken to combat malnutrition in early childhood years-

- Special programmes need to be formulated at the local level by visiting doctors and health service providers for enhancing the nutritional status of this vulnerable group of children. But at the same time it should be kept in mind that cost effectiveness should be a priority in disseminating nutritional information.
- Antenatal visit has to be made compulsory as it is an important point of contact between health services and the pregnant mothers.
- Women need to be convinced and motivated that the ongoing reproductive and child health programme is cost effective (almost free), and is to be utilized solely for their children's benefits.

- Mothers could be given information about the importance of nutrients and micronutrients in the diet for the proper growth and development of their children; in sessions when the health workers visited the village. The importance of balanced diet for growing children needs to be imparted among all the family members, not only the mothers.
- Umbrella approach (a combination of local organizations-both governmental and non-governmental) should be taken up and implemented to generate awareness and mobilize parents towards health and nutritional development of children and themselves also.

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