

## To Study the Clinical Signs of Malnutrition in Children Upto Two Years of Age with History of Diarrhoea

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**Abstract:** Good nutrition is the cornerstone for survival, health and development for current and successive generations. Well-nourished children perform better in school, grow into healthy adults and also give their children a better start in life. Well-nourished women face fewer risks during pregnancy and childbirth, and their children set off on firmer developmental paths, both physically and mentally.

In the first 36 months of life, children develop 40 percent of their ability to think, speak, reason and lay the foundation for their social behaviour as adults.

Under nutrition is implicated in more than half of all child deaths worldwide. Every minute of every day, somewhere in the world, 21 children die of malnutrition and preventable diseases. Even when it doesn't kill, chronic malnutrition can cause blindness, deformities and brain damage. The number of malnourished children under the age of 5 in the developing world is projected to decline by only 21 % from 166.3 million in 1997 to 131 million in 2020. This means that by 2020, nearly one-fourth of all children younger than 5 years will still have malnutrition.

### I. INTRODUCTION

Diarrhoea is a serious life-threatening problem that includes losses of fluid, sodium, bases, potassium, chlorides and nutrients in stool, causing dehydration and malnutrition in young children. It is a leading cause of mortality and morbidity in infants and young children. Management of diarrhoea includes Oral rehydration, maintenance and nutritional therapy.

Undernourished children have lowered resistance to infection, they are more likely to die from common childhood ailments like diarrhea diseases and respiratory infections, and for those who survive, frequent illnesses saps their nutritional status, locking them into a vicious cycle of recurring sickness and faltering growth. Their plight is largely invisible. Three quarters of the children who die from causes related to malnutrition were only mildly or moderately undernourished, showing no outward signs of their vulnerability.

The causes of under nutrition vary across regions. In many Asian countries, poor and low status of women, poor care during pregnancy, high rates of low birth weight, high population densities, unfavourable child caring practices, and poor access to health care are the major causes. In sub-Saharan Africa, extreme poverty, inadequate caring practices for children, low levels of education and poor access to health services are among the major factors responsible for under nutrition. Conflicts and natural disasters in many countries have further exacerbation on the situation. Malnutrition is the underlying cause of upto 50%

of all U5 deaths in the world. More than one- quarter (27 %) of all under fives in the developing world are under nourished. In Sub-Saharan Africa more that one-quarter (28%) of children under five are underweight.

In India, 400 million children suffer daily, which is greater problem than in Sub-Saharan Africa. The State of the world's children-2001, released by UNICEF says that 58 % of the children under 3 are malnourished, 33 % are born with low birth weight and the infant mortality rate is 70 deaths per 1,000 live births. The bad news does not end here. India ranks 49<sup>th</sup> in the world under-5 mortality with 98 children per 1,000 dying in 1999. Childhood malnutrition is a massive caused by a combination of factors including inadequate or inappropriate food intake, childhood diseases, harmful childcare practices and improper care during illness: all contributing to poor health and millions of deaths annually. It affects growth potential and the risk of mortality and morbidity in later years of life.

In U.P., the prevalence of malnutrition in children under five years of age is 52% while the percentage of severely malnourished children (weight for age <-3sd) is 22.4%. Only 1 in 20 newborns is put to the breast within the first hour of birth and plain water is often given along with breastmilk, thus increasing the chances of infection and diarrhoea. By the age of 6 to 9 months, only 1 in 5 children (20%) receives both breastmilk and solid food. Only 1 in 10 children (10%) suffering from diarrhoea receives ORT. Occurrence of childhood diseases has the maximum contribution to wasting in children in U.P.

Ethno medicine is the study of cultural therapies and practices used to treat or prevent illness. In the field of cultural anthropology, the study of ethno medicine is used to determine the range of practices used by a group of people to attain a state of health and wellbeing. Ethno medicines are the home remedies or domestic activities that one engages in with the specific aim to cure or treat the symptoms of an illness, disease or problem.

## II. RATIONALE OF THE STUDY

Of the 6.6 million deaths among children aged 28 days to five years, 1.7 million (26%) are caused by diarrhoea. 1 million (61%) of these deaths are due to the presence of undernutrition.

## III. OBJECTIVES OF THE STUDY

This study was conducted in 2020 based on easily identifiable clinical signs with the objectives to examine the clinical signs of the diarrhoeal cases and to co-relate these signs with the micronutrients deficiency in the cases.

## IV. MATERIALS AND METHODS OF THE STUDY

86 diarrhoeal cases, between the age group of 0-2 years were selected purposively from the out patient department of Paediatrics, K.G.M.C. Lucknow. The respondents were divided into 3 socio-economic groups according to the revised scale of Kuppuswami. Information regarding the clinical signs of samples from three socio-economic status (S.E.S.) was collected with the help of pre-tested schedule. The individuals were examined through diet survey, anthropometric measurements and clinical examinations. The cases were clinically examined for their general appearance, skin, hair, eyes, tongue, activity and adipose tissue and their co-relation with the micronutrient deficiencies was made after comparing the observed clinical signs with the standards.

## V. RESULTS OF THE STUDY

Frequency distribution of the diarrhoeal cases according to their clinical examinations are stated as under:

### a) GENERAL APPEARANCE

| Socio-economic status (S.E.S.) | Normal built |       | Thin built |       | Sickly |       |
|--------------------------------|--------------|-------|------------|-------|--------|-------|
|                                | n            | %     | n          | %     | n      | %     |
| Lower S.E.S. (n=54)            | 5            | 9.26  | 36         | 66.66 | 13     | 24.07 |
| Middle S.E.S. (n=21)           | 10           | 47.62 | 10         | 47.62 | 1      | 4.76  |

|                    |    |       |    |       |    |       |
|--------------------|----|-------|----|-------|----|-------|
| Upper S.E.S.(n=11) | 5  | 45.5  | 5  | 45.45 | 1  | 9.09  |
| Total n=86         | 20 | 23.25 | 51 | 59.3  | 15 | 17.44 |

## b) HAIR

| Socio-economic status(S.E.S.) | Normal |       | Lusterless |       | Thin sparse |      | Easily pluckable |   |
|-------------------------------|--------|-------|------------|-------|-------------|------|------------------|---|
|                               | n      | %     | N          | %     | n           | %    | n                | % |
| Lower S.E.S.(n=54)            | 24     | 44.44 | 25         | 46.29 | 5           | 9.26 | -                | - |
| Middle S.E.S.(n=21)           | 18     | 85.7  | 3          | 14.28 | -           | -    | -                | - |
| Upper S.E.S.(n=11)            | 9      | 81.81 | 1          | 9.09  | 1           | 0.09 | -                | - |
| Total n=86                    | 51     | 59.3  | 29         | 33.72 | 6           | 6.97 | -                | - |

## c) SKIN

| Socio-economic status(S.E.S.) | Normal |       | Dry,loose |       |
|-------------------------------|--------|-------|-----------|-------|
|                               | n      | %     | n         | %     |
| Lower S.E.S.(n=54)            | 28     | 51.85 | 26        | 48.15 |
| Middle S.E.S.(n=21)           | 19     | 90.47 | 2         | 9.52  |
| Upper S.E.S.(n=11)            | 10     | 90.9  | 1         | 9.09  |
| Total n=86                    | 57     | 66.28 | 29        | 33.72 |

## d) EYES

| Socio-economic status(S.E.S.) | Normal |       | Dull,deep-set |       |
|-------------------------------|--------|-------|---------------|-------|
|                               | n      | %     | n             | %     |
| Lower S.E.S.(n=54)            | 42     | 77.77 | 12            | 22.22 |
| Middle S.E.S.(n=21)           | 19     | 90.47 | 2             | 9.52  |
| Upper S.E.S.(n=11)            | 10     | 90.9  | 1             | 9.09  |
| Total n=86                    | 71     | 82.5  | 15            | 17.4  |

## e) TONGUE

| Socio-economic status(S.E.S.) | Normal |       | Dry |      | Pale |      | Red |       |
|-------------------------------|--------|-------|-----|------|------|------|-----|-------|
|                               | n      | %     | n   | %    | n    | %    | n   | %     |
| Lower S.E.S.(n=54)            | 43     | 79.63 | 5   | 9.26 | -    | -    | 6   | 11.11 |
| Middle S.E.S.(n=21)           | 19     | 90.47 | 2   | 9.52 | -    | -    | -   | -     |
| Upper S.E.S.(n=11)            | 10     | 90.9  | -   | -    | 1    | 9.09 | -   | -     |
| Total n=86                    | 72     | 83.72 | 7   | 8.14 | 1    | 1.16 | 6   | 6.97  |

## f) ACTIVITY

| Socio-economic status(S.E.S.) | Normal built |       | Dull |       | Lifeless |      |
|-------------------------------|--------------|-------|------|-------|----------|------|
|                               | n            | %     | n    | %     | n        | %    |
| Lower S.E.S.(n=54)            | 6            | 11.11 | 47   | 87    | 1        | 1.85 |
| Middle S.E.S.(n=21)           | 7            | 33.33 | 13   | 61.9  | 1        | 4.76 |
| Upper S.E.S.(n=11)            | 6            | 54.54 | 5    | 45.45 | -        | -    |
| Total n=86                    | 19           | 22.09 | 65   | 75.58 | 2        | 2.32 |

## g) ADIPOSE TISSUE

| Socio-economic status(S.E.S.) | Normal |       | Deficient |       |
|-------------------------------|--------|-------|-----------|-------|
|                               | n      | %     | n         | %     |
| Lower S.E.S.(n=54)            | 9      | 16.66 | 45        | 83.33 |
| Middle S.E.S.(n=21)           | 11     | 52.38 | 10        | 47.62 |
| Upper S.E.S.(n=11)            | 6      | 54.54 | 5         | 45.55 |

|            |    |       |    |       |
|------------|----|-------|----|-------|
| Total n=86 | 26 | 30.23 | 60 | 69.76 |
|------------|----|-------|----|-------|

## VI. CONCLUSION OF THE STUDY

Micronutrient deficiency can be easily identified through clinical features of diarrhoeal disease. Socio economic status has a significant effect on the nutritional status of infants and young children. It was recommended that the fluid replacement in the form of Oral Rehydration Solution should be promoted for the cases of diarrhoea.

## References

1. Balbir S, Zomar (1998) "1st International congress of Pediatrics"- Journal of Indian Pediatrics. Vol - 47, Page 17.
2. Department of Women and Child Development, Uttar Pradesh (1999) "Nutritional Profile of Women and Children in Uttar Pradesh".
3. Diwan, Desai D.E. (1997) "Diarrhoea in Childhood" Quarterly medical Reviews. Vol - 30, Page 13.
4. Gopalan C, Ramashastry B.V. and Balasubramaniam (1991) "Nutritive Value of Indian Foods" National Institute of Nutrition, Hyderabad.
5. Moseley WH, Chen LC. (1984) "An analytic framework for the study of field survival in developing countries"— Population and Development Review. Vol.-10, Page 25-45.
6. Nagpal and Aneja (1997) "Oral Rehydration therapy in malnourished children with diarrhoeal dehydration" - Journal of Indian Pediatrics. Vol - 59, Page 313.
7. Park K (1998) "Park's textbook of Preventive and Social Medicine" Banarasidas Bhanot, Jabalpur.
8. Vir Sheila C and Nigam A. K. (2001) "Nutritional status of children in Uttar Pradesh" – Nutrition Foundation of India Bulletin. Page 1-5.