



Original Research Article

## Causes and Impact of Delayed Recognition or Non-Recognition of Under-Nutrition

Manohar Bhatia, Ashok Mishra, Manbahadur Rajpoot

Dept. of PSM/Community Medicine, G. R. Medical College, Gwalior, India.

Corresponding Author: Manohar Bhatia

Received: 15/05/2015

Revised: 29/05/2015

Accepted: 30/05/2015

### ABSTRACT

**Background:** The prevalence of child undernutrition in India remains high despite India's recent economic growth. Certain factors like identification of undernutrition by mothers, delay in seeking treatment etc have largely gone un-noticed. The objective of this study was to identify the factors responsible for delay in recognition or non-recognition of undernutrition by the mothers.

**Methodology:** This cross-sectional study was conducted in Gwalior District among doctors, Supporting Staff (Anganwadi workers, ANM and Feeding Demonstrators) and Mothers using a pre-designed, pre-tested, semi-structured questionnaire.

**Results:** 100% Doctors and supporting staff considered Anthropometry as a method of recognition of child under-nutrition while only 37.33% mothers believed the same. 23% mothers considered frequent illness of child as method of recognition of under-nutrition. For 91.33% mothers, lack of time/engaged with livelihood was the most important factor preventing them from seeking care for their undernourished children.

**Conclusion:** Strategic communication directed towards both mothers and the families to recognize under nutrition as a problem necessitating prompt action at the family level, at community level (AWCs) and at health facility level should be promoted.

**Key words:** Recognition, Undernutrition, Anthropometry, Behavior change

### INTRODUCTION

Child undernutrition continues to be a major public health problem and is considered by many to be the largest global burden of disease. [1] Several estimates have attributed 53-55% of all childhood deaths worldwide to under nutrition. [2,3]

Between 1999 and 2006, the proportion of wasted children, an indicator of acute under nutrition, actually increased from 19.19% to 22.90%. [4] UNICEF

estimated in 2002 that 45% of children under five years old in India have stunted growth, 47% are underweight, and 16% show signs of wasting. [5]

The prevalence of child undernutrition in India remains high despite India's recent economic growth. The economy grew by an average of more than 70% per year in the decade between 1997 and 2007. [6] Despite this economic growth, there has been almost no improvement in the

health status of children in India over the past fifteen years and some indicators have even gotten worse. [7]

Many mothers do not understand that their child is undernourished because of lack of food. Others may attribute their child's condition to pollution, spiritual influences, or punishment for adulterous behavior. [8] These misunderstandings about the etiology of child undernutrition are likely contributing to India's child undernutrition problem.

The educational level of the child's caretakers is significantly correlated with the child's nutritional status. Multiple studies demonstrate that children of uneducated or low educated mothers have a much higher risk of severe stunting and undernutrition. [9] The mother's healthcare seeking attitude also affects the nutritional status of her children. One study found that mothers would utilize available healthcare resources for almost every medical problem except undernutrition. If the majority of children in a community are undernourished, a mother may think it is normal for her child to have stunted growth and be underweight. Since the mother does not realize her child is sick and predisposed to infectious diseases, she will not seek out available medical care. This kind of attitude contributes to the high prevalence of child undernutrition. [9]

On the other hand, increased maternal education is associated with children who have improved weight-for-age Z-scores. [10] The educational level of the child's father and grandmother is also associated with better nutrition.

India presents a unique combination of Social factors that may be partly responsible for its abnormally high rate of child undernutrition. Factors like identification of undernutrition by mothers, delay in seeking treatment etc have largely gone un-noticed. The current study was undertaken to identify the factors

responsible for delay in recognition or non-recognition of undernutrition by the families especially mothers.

## **MATERIALS AND METHODS**

The present study was a population based cross-sectional study carried out in Gwalior district for a period of 14 months from October 2012 to November 2013. Study was conducted in Government health centres in Gwalior District. Total 50 Government Doctors, 100 Supporting Staff (Anganwadi workers, ANM, Feeding Demonstrators) and 300 Mothers were included in the study.

Mothers were selected based on nutritional status of the child. Using the growth chart 'Normal', 'Moderately undernourished' and 'Severely Undernourished' children were selected, 100 in each group. Mothers of these children were included in the study. As per NFHS-3, prevalence rate of underweight for age of below 60 months children in Madhya Pradesh is 60.4%; [11] thus the sample size calculated was 96 which was rounded off to 100; so 100 mothers were selected in each category.

All these above mentioned participants were selected across the district giving appropriate representation to the urban and rural areas. Doctors and Supporting Staff not willing to participate were not included in the study while mothers having child below 06 months or above 05yrs of age were not included.

Separate pre-designed, pre-tested, semistructured questionnaire for Doctors, Health Care Workers and Mothers were used for data collection. Data analysis was carried out by percentage, proportion, chi-square test and Odds ratio was calculated utilizing Odds Ratio calculator. The study received ethical approval from the Ethics Committee, Gajra Raja Medical College, Gwalior.

## RESULTS

In both, urban and rural areas of the study universe, the problem of under-nutrition was recognized too late or not at all, and the medical help was also delayed. In a community with large number of undernourished children, under-nutrition has become a norm and is not taken seriously. Data suggested that neither families nor

AWWs and health workers used physical measurements to assess mild and moderate under-nutrition in children. AWWs did not seem to discuss the interpretation of growth monitoring and recognition of under-nutrition with mothers; most mothers did not know or remember the value of growth monitoring.

**Table No.1 Child Health Problems and Care: Mother's Views**

S. No.	Child Health Problems and Care	Normal Child (n=100)	Moderate Under nutrition (n=100)	Severe Under nutrition (n=100)	P value
<b>A. SOURCE OF HEALTH CARE</b>					
1.	Private medical sector	50% (50)	30% (30)	22% (22)	p < 0.05
2.	Public Hospital & PHC/CHC	50% (50)	67% (67)	64% (64)	p < 0.05
3.	ANM & Anganwadi Worker	15% (15)	42% (42)	53% (53)	p < 0.05
<b>B. IMPACT OF SICKNESS</b>					
1.	Decrease in intake of food & liquids	81% (81)	69% (69)	74% (74)	p > 0.05
2.	Weak/Lethargic	54% (54)	47% (47)	42% (42)	p > 0.05
3.	No specific effect	10% (10)	18% (18)	27% (27)	p < 0.05
<b>C. PREVENTION OF SICKNESS</b>					
1.	Good Nutrition & Food	78% (78)	56% (56)	53% (53)	p < 0.05
2.	Hygiene	75% (75)	54% (54)	40% (40)	p < 0.05
3.	Immunization	66% (66)	28% (28)	19% (19)	p < 0.05

\*Multiple Responses

As shown in Table No.1, out of 200 mothers of undernourished children, 65.50% (67+64) said that Government hospitals & PHC/CHC were the preferred source of health care; particularly in rural areas. 47.50% (42+53) mothers of undernourished children also trusted ANM & AWWs as a source of medical care. More than two-third of mothers in all groups agreed that there is reduction in intake of food & liquids by the child during periods of sickness.

Out of 200 mothers of undernourished children, 54.50% (56+53)

mothers believed that good nutrition to child can help in prevention of sickness while only 23.50% (28+19) believed that immunization can also help in preventing sickness. Compared to this, out of 100 mothers of normal nourished children 78% (78) believed that good nutrition to child can help in prevention of sickness and 66% (66) believed that immunization can also help in preventing sickness. The results are statistically significant (p < 0.05).

**Table No.2 Recognition of Child Undernutrition by different Groups**

S. No.	Symptoms/ Manifestations	Doctors (n=50)	Supporting Staff (AWW, ANM, FD) (n=100)	Mothers (n=300)
1.	Physical appearance/ Crying excessively/ Irritability/ appears weak/lazy/lethargic/ not playing/ dullness/lack of concentration	48% (24)	80% (80)	75.33% (226)
2.	Less appetite/less feeding	16% (08)	25% (25)	40.66% (122)
3.	Anthropometry	100% (50)	100% (100)	37.33% (112)
4.	Remains sick/frequent illness	82% (41)	41% (41)	23% (69)

\*Multiple Responses

As per Table No.2, all the Doctors (100%) and supporting staff (100%) considered Anthropometry as a method of recognition of child under-nutrition while only 37.33% (112) mothers believed the same. Physical appearance (weak/lethargic child) was considered as method of recognition of child under-nutrition by 80% (80) supporting staff, 75.33% (226) mothers and 48% (24) Doctors.

Child remains sick/frequent illness was considered as method of recognition of under-nutrition by 82% (41) Doctors, 41% (41) supporting staff and only 23% (69) mothers. 40.66% (122) mothers considered

less appetite/less feeding as method of recognition of child under-nutrition while only 16% (08) Doctors and 25% (25) supporting staff believed the same. Many mothers were actually not clear about how to recognize under-nutrition.

All the Doctors (100%) and 96% (96) Supporting staff believed that most of the parents were unable to recognize early symptoms & signs of undernutrition and they recognize when symptoms become visible or complications develop. 80% (40) Doctors and 52% (52) Supporting staff believed that families have limited time and resources for medical help. (Table No.3)

**Table No.3 Reasons for families failing to recognize Undernutrition early: Perception of Doctors and Supporting Staff**

S. No.	Reasons	Doctors (n=50)	Supporting Staff (AWW, ANM, FD) (n=100)
1.	Inability to recognize early symptoms & signs	100% (50)	96% (96)
2.	Limited resources for medical help	80% (40)	52% (52)
3.	Socio-cultural beliefs	20% (10)	47% (47)

\*Multiple Responses

**Table No.4 Factors preventing families from seeking care for their Undernourished Children: Perception of different Stakeholders**

S. No.	Factors	Doctors (n=50)	Supporting Staff (AWW, ANM, FD) (n=100)	Mothers (n=300)	P value
1.	Unaware of existing Facilities/Services	22% (11)	33% (33)	37% (111)	p < 0.05
2.	Inadequate services/ Lack of trust	20% (10)	56% (56)	76% (228)	p < 0.05
3.	Unsuitable timings	22% (11)	51% (51)	75.66% (227)	p < 0.05
4.	Lack of time/ Engaged with livelihood	38% (19)	78% (78)	91.33% (274)	p < 0.05
5.	Accessibility/ inconvenient location of health facility	28% (28)	58% (58)	62.33% (187)	p < 0.05

\*Multiple Responses

Table No.4 clearly shows that inability to recognize undernutrition was the most important factor preventing families from seeking care for their undernourished children and has been elaborated earlier. 22% (11) Doctors and 33% (33) supporting staff believed that being unaware of existing facilities/services and 38% (19) Doctors and 78% (78) supporting staff considered lack of time/engaged with livelihood as an important factor preventing families from seeking care for their undernourished Children. The results are statistically significant (p < 0.05).

According to 91.33% (274) mothers, lack of time/engaged with livelihood was the most important factor preventing families from seeking care for their undernourished children. 76% (228) mothers complained that the services were inadequate (lack of staff, unavailability of beds, medicines etc., and misbehavior of staff). 37% (111) mothers also said that they were unaware of existing facilities/services. Large number of mothers (75.66%) and Supporting Staff (51%) said that hospital timings were unsuitable for them. 58% (58) Supporting Staff and 62.33% (187) mothers said that inconvenient location of health facility and

difficult accessibility was an important reason for delay in seeking care for their undernourished children. The results are statistically significant ( $p < 0.05$ ). (Table No.4)

## DISCUSSION

Timely diagnosis and treatment of under-nutrition can avert wasting, stunting and malnutrition. In the current study majority of mothers misclassified the nutrition status of their children irrespective of their actual weight for age nutrition classification. Mothers usually base their assessment on child's physical appearance, energy, eating behavior, and their own performance as care-givers. [12] The study found that parents were using the child's appearance and behavior as the basis of identifying under-nutrition.

An Ethiopian study highlighted that mothers correctly evaluated their child's growth performance in only 53.7 percent. Children who were deemed to be stunted were also more likely to be stunted according to the objective anthropometric measures. On the other hand, when a mother considered the growth of her child normal, it was about equally likely to be stunted. [13] Hence under-nutrition is universally diagnosed too late or not at all and any effort to alleviate under-nutrition is also delayed.

This is problematic because by the time the child presents outward signs of under-nutrition the child has already deteriorated to the point of severity where other health complications have also set in. This leads to a host of other issues because parents are inclined to take their severely undernourished children to private clinics where the cost is high.

## CONCLUSION

There is urgent requirement of increased investments in public education on behavior change for appropriate feeding and

recognition of undernutrition among infants and young children. The communication strategy has to develop cognitive resonance with mothers and family members for sustained behavior change. Strategic communication directed towards both mothers and the families to recognize undernutrition as a problem necessitating prompt action at the family level, at community level (AWCs) and at health facility level should be promoted.

## REFERENCES

1. Ezzati, M., A.D. Lopez, A. Rodgers, S. Vander Hoorn, and C.J.L. Murray. "Selected Major Risk Factors and Global and Regional Burden of Disease" *Lancet*. 360 (2002): 1347-1360.
2. Caulfield, Laua E, Mercedes de Onis, Monika Blossner, and Robert E. Black. "Undernutrition as an Underlying Cause of Child Deaths Associated with Diarrhea, Pneumonia, Malaria and Measles" *American Journal of Clinical Nutrition* 80 (2004): 193-8.
3. Pelletier, DL, EA Frongillo JR, DG Schroeder, JP Habicht. "The Effect of Malnutrition on Child Mortality in Developing Countries." *Bulletin of the World Health Organization*. 73 (1995): 443-448.
4. International Institute for Population Sciences and ORC macro International. National Family health Survey-3, IIPS, Mumbai: 2007.
5. Nandy, Shailen, Michelle Irving, David Gordon, S.V. Subramanian, and George Davey Smith. "Poverty, Child Undernutrition and Morbidity: New Evidence from India." *Bulletin of the World Health Organization*. 85.3 (2005): 210-216.
6. Central Intelligence Agency. World Fact Book, CIA, Washington DC: 2008 pg 270-273
7. Lahariya Chandrakant and Jyoti Khandekar. "How the Findings Of National Family Health Survey-3 Can Act As a Trigger For Improving The

- Status of anemic Mothers And Undernourished Children in India: A Review." *Indian Journal of Medical Science* 61.9 (2007): 535-544.
8. Sivaramakrishnan, Malathi and Vimla L. Patel. "Reasoning about Childhood Nutritional Deficiencies by Mothers in Rural India: A Cognitive Analysis." *Social Science Medicine*. 31.7 (1993): 931-952.
  9. Som, S., M. Pal, and P. Bharati. "Role of Individual and Household Level Factors on Stunting: A Comparative Study in Three Indian States." *Annals of Human Biology*. 34.6 (2007) : 632-646.
  10. Griffiths, Paula, Zoe Matthews, and Andrew Hinde. "Gender, Family, and the Nutritional Status of Children in Three Cultural Contrasting States of India." *Social Science and Medicine*. 55 (2002): 775-790.
  11. International Institute for Population Sciences. National Family health Survey-3 Madhya Pradesh 2005-2006, IIPS, Mumbai pg 273
  12. Turnbull B, Andrade G M, Huerfano N, Ryan GW, Martinez H. A contrast between mother's assessment of child malnutrition and physical anthropometry in rural Mexico: A mixed methods community study. *Journal of Nutrition Education and Behavior* 2009. 41 (3); 281-206.
  13. Christiaensen L, Alderman H. Child malnutrition in Ethiopia. Can maternal Knowledge Augment the role of Income. African Regional Writing Paper Series No.22. Economic Development & Cultural Change 2004.

How to cite this article: Bhatia M, Mishra A, Rajpoot M. Causes and impact of delayed recognition or non-recognition of under-nutrition. *Int J Health Sci Res*. 2015; 5(6):67-72.

\*\*\*\*\*

**International Journal of Health Sciences & Research (IJHSR)**

**Publish your work in this journal**

The International Journal of Health Sciences & Research is a multidisciplinary indexed open access double-blind peer-reviewed international journal that publishes original research articles from all areas of health sciences and allied branches. This monthly journal is characterised by rapid publication of reviews, original research and case reports across all the fields of health sciences. The details of journal are available on its official website ([www.ijhsr.org](http://www.ijhsr.org)).

Submit your manuscript by email: [editor.ijhsr@gmail.com](mailto:editor.ijhsr@gmail.com) OR [editor.ijhsr@yahoo.com](mailto:editor.ijhsr@yahoo.com)