

## Research Article

# Undernutrition: the role of the mothers and others in childcare

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## ABSTRACT

**Background:** India has the largest burden of child mortality and undernutrition in the world. More than one-third of the world's 150 million undernourished children younger than 5 year old live in India. The objective of this study was to assess the role of the mother in child care and its implications on nutrition of the child.

**Methods:** This cross-sectional study was conducted in Gwalior district among 300 mothers who were selected across the district on the basis of nutritional status of their child.

**Results:** Only 09% mothers were able to spend >3 hours every day for exclusive care of their under-five child. 37.00% mothers admitted that the elder sibling in the family feeds the child. 55.50% mothers stated that they have to work outside to help in earning livelihood.

**Conclusions:** Mother plays the most important role in child up-bringing. Empowering mothers and spreading correct and practical knowledge and awareness about child care practices can help in solving the problem of undernutrition.

**Keywords:** Undernutrition, Child care, Good care practices

## INTRODUCTION

India has the largest burden of child mortality and under nutrition in the world. More than one-third of the world's 150 million undernourished children younger than five years old live in India.<sup>1</sup> Over 2.1 million children die in India every year, the most of any country. The national under-five mortality rate is 74.3 per 1000 live births and is widely ranging from as high as 96.4 deaths per 1000 live births in Uttar Pradesh to 16.3 deaths per 1000 live births in Kerala.<sup>2</sup>

One group estimates that more than 61 million children in India are stunted, a prevalence of 51%. This prevalence varies between states within India and, in some of the poorest states, 56.8% children have stunted growth.<sup>3</sup> 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.<sup>4</sup>

The latest National Family Health Survey 3,<sup>2</sup> conducted in 2005-6, estimates that 19.8% of Indian children less than five years of age are undernourished based on their weight-for-height and 6.4% are severely undernourished. NFHS-3 also estimates that 48.0% of Indian children under five years old are stunted for their age and 2.37% are severely stunted. Finally, NFHS-3 estimates that 42.5% of Indian children are underweight for their age and 15.8% are severely underweight.<sup>2</sup>

India presents a unique combination of Social factors that may be partly responsible for its abnormally high rate of child undernutrition. Infant feeding practices, misunderstanding the etiology of severe under nutrition, the educational level of the parents, women's empowerment, domestic violence, the healthcare seeking attitudes of the mother, birth order preference, and gender bias have all been proposed as social factors that influence child under nutrition in India.

Mothers who are younger than twenty years old when they give birth have children with a 75% prevalence of under nutrition while mothers who are older than thirty years old when they give birth have children with a 32% prevalence of undernutrition.<sup>5</sup> In addition, mothers who are empowered to make decisions for their household and move freely within a community tend to have children with better nutrition.<sup>6</sup> The present study was conducted to assess the role of the mother in child care and its implications on nutrition of the child.

## METHODS

The present study was a population based cross-sectional study carried out in Gwalior district for a period of one year from October 2012 to October 2013. Study was conducted in Government health centres in Gwalior district.

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. The mothers were selected across the district giving appropriate representation to the urban and rural parts of the district. As per NFHS-3, prevalence rate of underweight for age of below 60 months children in Madhya Pradesh is 60.4%;<sup>16</sup> using this prevalence rate the sample size drawn was 96 which was rounded off to 100; so 100 mothers in each category.

Mothers having children below 06 months or above 05yrs of age were not included in the study. Pre-designed, pre-tested, semi-structured questionnaire was 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

The study was conducted in Gwalior district. The information was obtained from 300 Mothers (100 mothers of normal children, 100 mothers of moderately

undernourished children and 100 mothers of severely undernourished children).

As shown in Table 1, only 09% (27) mothers were able to spend >3 hours every day for exclusive care of their under-five child. 56.67% (170) mothers could give <1 hour per day for exclusive care of their under-five child. The trend of mothers spending less time with children was more visible in households with under nourished children as compared to those with better nourished children. The results are statistically significant ( $p < 0.05$ ).

Table 2 shows mother's perspective on child care. In majority of cases food was prepared & served by mother itself. Out of 200 mothers of undernourished children, 37.00% (30+44) admitted that the elder sibling in the family feeds the child and 41.00% mothers (35+47) admitted that sometimes the elders in the family feed the child. The results show that in case of elder sibling feeding the child, chances of undernutrition are increased and the findings are statistically significant ( $p < 0.05$ ).

Out of 200 mothers of undernourished children, 72.50% mothers (74+71) agreed that maintaining hygiene of Utensils & food items while feeding is essential and 43.00% mothers (43+43) agreed that maintaining hygiene of both child & mother while feeding is essential. The results are statistically significant ( $p < 0.05$ ).

A large number of normal and undernourished children were left in the care of elder members/elder siblings in the family. Out of 200 mothers of undernourished children, 47.00% mothers (37+57) agreed that children are left in the care of their elder siblings.

Perception of good care: Out of 200 mothers of undernourished children, only 49.00% mothers (56+57) regarded nutritious food/timely feeding as part of good care for the child. Out of 200 mothers of undernourished children, only 24.50% mothers (28+21) regarded education and sending a child to school as good care. Out of 100 mothers of normal nourished children, 81.00% mothers (81) regarded nutritious food/timely feeding as part of good care for the child and 50% mothers (50) regarded education and sending a child to school as good care. The results are statistically significant ( $p < 0.05$ ).

**Table 1: Time spent by mothers for exclusive care of under-five child.**

Approx. time spent	Normal child (n=100)	Moderate under nutrition (n=100)	Severe under nutrition (n=100)	Total (n=300)
≤1 hours	38	63	69	170 (56.67%)
>1-3 hours	46	29	28	103 (34.33%)
> 3 hours	16	08	03	27 (09.00%)
<b>Total</b>	100	100	100	300 (100%)

$p < 0.05$

**Table 2: Mother's perspective on child care.**

Child care	Normal child (n=100)	Moderate under nutrition (n=100)	Severe under nutrition (n=100)	P value
<b>Preparation &amp; feeding</b>				
Mother prepares & serves the food	87% (87)	84% (84)	80% (80)	p>0.05
Mother feeds the child herself	91% (91)	75% (75)	52% (52)	p<0.05
Elders feed the child	26% (26)	35% (35)	47% (47)	p<0.05
Elder sibling feeds the child	14% (14)	30% (30)	44% (44)	p<0.05
<b>Recognition of child's hunger &amp; satisfaction</b>				
Become irritable & crying	80% (80)	85% (85)	82% (82)	p>0.05
Indicates Hunger & asks for food	23% (23)	44% (44)	36% (36)	p>0.05
Has Stopped eating/feeding	38% (38)	84% (84)	95% (95)	p<0.05
Own judgement	88% (88)	90% (90)	79% (79)	P>0.05
<b>Maintaining of hygiene while feeding</b>				
Utensils & food items	88% (88)	74% (74)	71% (71)	P>0.05
Hygiene of child & mother	70% (70)	43% (43)	43% (43)	p<0.05
<b>Benefits of hygiene</b>				
Keep a child healthy	67% (67)	50% (50)	30% (30)	p<0.05
Protect the child from diseases	85% (85)	64% (64)	60% (54)	p<0.05
No effects	00	00	16% (16)	-
<b>Care of child during day</b>				
Elders in the family	47% (47)	72% (72)	58% (58)	p<0.05
Entrusting child care to elder sibling	27% (27)	37% (37)	57% (57)	p<0.05
<b>Perception of good care</b>				
Personal Hygiene of child	76% (76)	47% (47)	33% (33)	p<0.05
Appropriate & nutritious food/timely feeding	81% (81)	56% (56)	42% (42)	p<0.05
Education	50% (50)	28% (28)	21% (21)	p<0.05

\*Multiple responses

Table 3 shows reasons cited by mothers for their inability to give best care to their under five children. The most important reason given was mothers being too busy at

home. Out of 200 mothers of undernourished children, 72.00% mothers (66+78) stated that they are too busy with household and other work. In rural areas women have to look after family as well as cattle.

**Table 3: Reasons cited by mothers for their inability to give best care to their under five children.**

Reason	Normal child (n=100)	Moderate under nutrition (n=100)	Severe under nutrition (n=100)	p value
Living alone/nuclear families/multiple children	28% (28)	54% (54)	69% (69)	p<0.05
Mother too busy at home	48% (48)	66% (66)	78% (78)	p<0.05
Working mother/mother going out	30% (30)	51% (51)	60% (60)	p<0.05
Financial factors/husband unemployed	08% (08)	29% (29)	40% (40)	p<0.05
Lack of knowledge	12% (12)	57% (57)	65% (65)	p<0.05
Mother's illness	11% (11)	23% (23)	19% (19)	p>0.05

\*Multiple responses

Many women were also working as laborers and were involved in agriculture related activities and other earning activities. In urban areas many women were working as housemaids/domestic help and laborers. Out of 200 mothers of undernourished children, 55.50% mothers

(51+60) stated that they have to work outside to help in earning livelihood. The increased workload on mothers is associated with increased chances of undernutrition. The results are statistically significant (p<0.05).

Lack of knowledge was also an important reason stated by 61.00% (57+65) mothers of undernourished children. Family structure (particularly nuclear families and multiple children) was stated as an important reason by 61.50% (54+69) mothers of undernourished children. Other important reason as stated by 34.50% (29+40) mothers of undernourished children was husband being unemployed.

All the above factors mentioned are more prevalent in families with undernourished children. The results are statistically significant ( $p < 0.05$ ).

## DISCUSSION

The mother remains the main child care provider despite her emerging roles outside the home, as an additional or sole bread winner. Against the background of widespread fragile food security, primarily due to poverty, mothers were engaged in various income generating and employment opportunities involving long hours of activity away from home. In addition, rural women have to take care of domestic livestock and poultry. For the Indian woman in today's society, the added responsibilities outside the home have only added to the burden of her routine household work. Thus the mothers are left with no choice but entrusting the child care to Elder members/Elder sibling of the family.

The quality of child care is likely to be affected by the time spent by the main care provider (i.e. the mother with the child). Using the 1992 time use survey data, Miller and Mulvey (2000) found that although there was a difference between the time devoted to children between employed and non-employed parents, the difference was much less than expected.<sup>8</sup> In a study done by Sivakami, working mothers on an average spent less than two hours daily with their children whereas non-working women spent three to four hours per day.<sup>9</sup>

According to the 1991 Census data, the number of male main workers (principal bread winner) had increased by 23 percent since the 1981 Census while the number of female main workers increased by 40 percent. Rural women were more likely to be counted in the Census as working as compared to urban women; 27 percent versus 9 percent respectively.<sup>7</sup> According to the Register General and Census Commissioner of India (RGCC) in 1993, women contributed 46.3 percent in agriculture labour and 34.6 percent in cultivation sectors while men contributed 23 percent to agriculture labour and 39 percent to cultivation.<sup>7</sup>

A tremendous amount of pressure is placed on the mother to accomplish multiple and essential tasks during the morning and evening hours. Studies have noted that working women continue to spend as much time as non-working women in household activities such as cooking, cleaning vessels, washing clothes etc.<sup>9</sup> A lot of patience

and time is required to feed a child especially during the time when they are born to the age of three.

Previous studies have shown that the time spent feeding children among women with very young children differed significantly by work status of the mother.<sup>9</sup> Some studies have revealed that mothers with higher socio-economic status were able to spend more time with their children than the mothers with a lower socio-economic status.<sup>13</sup>

Other studies point out that working mothers often spend very little time per day for direct child care.<sup>10</sup> Although most of the studies did not find a simple association between increased times spent in child care and improved nutrition status, there were trends towards greater prevalence of under-nutrition among families with working mothers.<sup>11</sup> In the study by Mittal et al., chances of the child being underweight increased if the mother was employed (46.15%) as compared to the group where the mother was unemployed (37.8%), however, the differences were not statistically significant.<sup>12</sup>

Even, when the mother is employed, particularly when she works away from home, children are left either without a caretaker or in the care of other siblings or some other form of inadequate care.<sup>14</sup>

A study done in Mali (sub Saharan Africa) observed that the caregiver of 45.7% of children 12 to 23 months of age was with an elder sibling, whereas for 45.7% of children the caregiver was the mother and for 8.6% the grandmothers<sup>15</sup> which was quite similar to our study.

## CONCLUSION

Empowerment of mothers and spread of correct and practical knowledge about child care practices can help in solving the problem of undernutrition. The Govt. should consider starting Quality day care programs for children 6 months to 5 years of age. National Crèche Scheme can be expanded to peripheral and neglected areas so as to improve its coverage. Single women, widows, adolescent girls, middle aged women can be encouraged to take up the task of starting crèche's under the supervision and mentoring of NGOs, SHGs etc. Promotion of time saving and efficient cooking and food storage devices at household levels. State can develop policies and schemes for poor families to access pressure cookers, LPG stoves etc.

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