

Maternal Autonomy and Young Child Nutritional Status

Article by Nadia Sultana¹, Afroza Begum², Abdus Samad³, M.M. Aktaruzzaman⁴ and
Irin Hossain⁵

National Institute of Preventive and Social Medicine, Mohakhali, Dhaka¹²⁵

National Heart foundation Dhaka³

VBDC, DGHS, Mohakhali, Dhaka⁴

Email: irin.hossain@gmail.com

Abstract

The maternal autonomy was measured by the level of participation in household decisions according to the BDHS 2011 scale. The nutritional status of the children was evaluated through measuring height and weight of the children and plotting it in CDC growth reference chart. The study was a cross sectional study which took place in Manikganj district of Bangladesh, on 260 married mothers who have at least one child aged between 1 to 3 years. Our estimation results show that, mother's level of participation in household decisions found to have significant impact on child's nutritional outcome, especially in terms of height. Other factors such as, age gap with the husband more than 5 years, early marriage and adolescent pregnancy found to decrease the maternal autonomy condition significantly. On the other hand mother's living in the single family, with better education and who have their personal income are significantly more autonomous. They also found to be less prone to have stunted children.

Keywords: *Maternal autonomy, child nutritional status, rural*

1. Introduction

In Bangladesh, malnutrition is one of the most critical components for child health that affects almost 56.5% children. We are still facing challenges to keep malnutrition levels below the World Health Organization's (WHO) public health critical thresholds. According to UNICEF Nutrition database 2012, the stunting prevalence among under five children in our country is 41%. This malnutrition starts early in the life cycle of a child. The period from birth to 36 months of age is a critical period in early childhood development. Quality and quantity of food available to a household are not the only factors explaining the determinants of malnutrition in infants and young children. Care and feeding practices of the caregiver are key factors that lead to undernourishment. [1] As UNICEF report states, 'Eliminating gender discrimination and empowering women will have a profound and positive impact on the survival and well-being of children (UNICEF 2007). Furthermore there are studies where it was found that, maternal autonomy positively impacts child's nutritional outcome, which was found more specifically in children under the age of 3 years. The relation was not the same for children aged more than 3 years [2]. Much concern has been showed in the past decade, about the need to empower women, so they can make their own decisions about childbearing and about other aspects of their lives. Lack of power over their own decision-making starting from the home to outside has long been recognized as the major obstacle to improve women's sexual and reproductive health. As the primary caregiver of a child is the mother, disempowerment of mother has contribution to high rates of this malnutrition among developing countries including ours. Low female status can result in compromised health outcomes for women, which in turn are related to lower infant birth weight and may affect the quality of infant care and nutrition. A mother influence child nutrition directly through improved childcare practices and indirectly through improvements in their own nutrition. This whole concept is more observable in a rural setting, where women are in more disadvantageous position. We conducted the study in Garpara union of Manikganj Sadar

Upazilla to get a detail for studying the linkages between maternal autonomy and child nutritional outcome in a disadvantaged setting.

2. Background

The majority of women has limited access to and control over resources and restriction in their mobility and are often under threat of violence from male partners. Women in Bangladesh have a lower social status than men. Their low status is deeply rooted in a culture and traditions, which place greater value on sons and men. Women's status remains low from one generation to the next. In such circumstance, autonomy is an intangible factor which expresses itself in a number of ways, as for example, having decision making power, mobility, command and control over resources, and intolerance and unwillingness to put up with violence. The facilitating factors in exercising autonomy are education, position in the household, economic status of the household and of the woman, access and availability of properties, and norms and attitudes of the community. Autonomy has basic relevance with women's own well-being. It determines to a large extent her ability to make effective choices and exercise control over her life. Women's autonomy contributes in large measure to enhancing quality of life for the family and for the community. There are a number of ways by which mother's decision making power might come to be associated with improved child health outcomes. Particularly in countries such as Bangladesh, where mothers play a vital role in child care. While men tend to make investments in themselves and/or the overall worth of their households, women are more likely to invest in the basic food and health care needs of their children and to prioritize these needs above all other needs. In families where mother play an important role in decision making, the proportion of family resources devoted to children is greater than in families in which mother play a less decisive role [3]. Constraints are there on women's household decision making power, physical mobility, restrict their ability to make these independent decisions. Women are governed by social norms that restrict their physical mobility. Thus, even in instances where women wish to make decisions regarding household consumption, expenditures, or health care, they may need help and agreement from other family members, particularly the husband or mother-in-law, in actually carrying out these dealings. On the other hand a woman who lives in a high-income household may be able to afford more food or medicines for sick children, but she does not necessarily make the decisions about household expenditures or whether to take the child to the doctor. It has often been argued that child health and investments in children are determined by intra-household resource allocation decisions.

3. Methods

3.1 Study design and sample

The study design was cross sectional study. A concurrent mixed method approach was commenced for data collection. Face to face interview of the respondents was done for quantitative data. The interviews were conducted by house to house visit. One focus group discussions (FGDs) for qualitative data were done. Before the data collection, the detail of the study was explicitly explained to each eligible respondent and informed consents were taken from them. Approach to explore the association between maternal autonomy and young child nutritional status in rural Bangladesh through both quantitative and qualitative approach. A sample of married women who are also a mother of at least one children aged between 1 to 3 years, were inspected. Autonomy of rural mothers and nutritional status of their children were attempted to describe within the study period to create an image of the relationship between those two.

The respondents were selected through purposive sampling from the study population. Door to door visit was carried out for desired sample.

Sample size was determined statistically through the formula of Daniel (Daniel, 1991; Kothair, 1985). Prevalence of stunting was taken into account as an indicator of child malnutrition status, which was 41% for under 5 years children in Bangladesh. (UNICEF,

2011). The calculated number of sample size was 373 if simple random sampling technique would be used. But as in this study purposive sampling technique was used and the non responsive rate was 10%, we got 260 respondents who met our desired criteria.

3.2 Variables and measurements

3.2.1 Measuring the maternal autonomy: Maternal autonomy was evaluated on the basis of household decision making status of the respondent. This household decision making is measured by an additive index of participation on decision-making. To develop this, we used 5 decision-making variables as used in BDHS, 2007 and assigned scores for each response. The initial score was converted into 0 to 4 according to the direction from no autonomy to well autonomy. Level of autonomy was increased with the increased number of score. After calculating the total score, perception was categorized through using cut off points for three equal groups and the scoring was done on the scale of 20.

3.2.2 Measuring the nutritional status of children: Child anthropometric measurements were taken including height and weight using height scale, weighing machine. As indicator of malnutrition, stunting and underweight were taken into account. CDC growth chart references for height and weight were used to scheme if the child was stunted or underweight. According to CDC growth chart for boys and girls, from fifth to ninety-fifth percentile was said to be have normal growth. Plotting the child's growth below fifth percentile or above ninety-fifth percentile are regarded as abnormal.

3.3 Analysis

The focus of this analysis is on the pathways linking maternal autonomy and child nutritional status. Based on height, weight and age data, the dependent variables are dichotomous variables indicating whether or not the child is too short or too underweight for his/her age. Data processing and analysis was done using SPSS (Statistical Package for Social Sciences) version 20. The test statistics was used to analyze the data are descriptive statistics and inferential statistic according to the demand of the study with 95% confidence interval. Level of significance was set at 0.05. Qualitative data were analyzed on the basis of themes.

4 Result

4.1 Socio-demographic status of rural mothers

Socio-demographic statistics are presented in Table 1. Most mothers of the sample belongs from the age group 20-29 years, the average monthly family income was 17303.85 with the SD \pm 11726.78 taka. Only 25% mothers have some kind of personal income. Majority of the family have 5 to 6 members. The percentage of joint families is higher, than that of the single families, around 36% and 63% consequently. Respondents without having any formal education corresponds about 16% of the population, whereas the literate group consists about 29% who finished study up to primary and more than half of the respondents were studied higher than primary. Among the husbands the literate group was about 77% and around one third of them did not have any sort formal education. Two large group among them were businessman about 45% and service holder about 31%. Rests were farmers, day laborers and rickshaw pullers or drivers. Among the respondents almost 95% were Muslims and rests of them were Hindu.

Table 1. Distribution of age, age gap, monthly family income and family size

Characteristics	Frequency	Percentage
Age of the respondents (years)		
≤19	16	6.2
20-29	168	64.6
≥ 30	76	29.2
Monthly family income (Taka)		
≤ 10000	90	34.6

10001-20000	107	41.2
≥20001	63	24.2
Mother's personal income		
Yes	66	25.39
No	194	74.62
Family size		
≤ 4	85	32.7
5-6	122	46.9
≥ 7	53	20.4
Family type		
Single	95	36.5
Joint	165	63.5
Educational level of respondents		
Illiterate	44	16.9
Upton primary	78	30.0
Upton secondary	64	24.6
Above secondary	56	21.5
Educational level of husbands		
Illiterate	55	21.2
Upton primary	57	21.9
Upton secondary	57	21.9
Above secondary	91	35
Occupational status of respondents		
Housewife	194	74.6
Day laborer	34	13.1
Service holder	17	6.5
Business	13	5.0
Others (handloom worker)	2	0.8
Occupational status of husbands		
Farmer	23	8.8
Day laborer	19	7.3
Rickshaw puller	17	6.5
Service holder	81	31.2
Businessman	119	45.8
Religion		
Muslim	246	94.6
Hindu	14	5.4

4.2 Reproductive characteristics of rural mothers

Reproductive measures showed in Table 2 indicate that almost 40% of the respondent got married before the legal age of marriage that is before 18 years. Rests of them got married above the age of 18. Average age of marriage was at 19 years with the SD ± 2.6 . The study records percentage of adolescent pregnancy 36.15, where the mean age of first conceive was 20.61 years with the SD of ± 2.9 . Almost 80% of the respondents have 2 children or less than that, others have more than 2 children.

Table 2. Distribution of age at first marriage and first conception of the respondents

Characteristics	Frequency	Percentage	Mean(SD)
Age at first marriage of the respondents (years)			
Early marriage	80	30.8	19.00 ± 2.68
Not early marriage	180	69.2	
Age at first conception of the respondents (years)			
Adolescent pregnancy	94	36.2	20.61 ± 2.9
Not adolescent pregnancy	166	63.8	
Parity			
2 children or less	203	78.1	2.02 ± 0.93
More than 2 children	57	21.9	

4.3 Maternal autonomy status

Figure 1 showed the autonomy status of the rural mothers was studied as per the household decision making scale used in BDHS 2007, to measure the same. The household decision making was counted on the basis of ‘last say’ on deciding 5 dimensions, namely- decision about own healthcare, major household purchase, daily household purchase, visit to the relatives or health centers or other places and child healthcare.

On the basis of the 5 dimensions for measuring household decision making status, the cumulative empowerment was calculated and the score ranged from 0 to 20 with the mean score of 7.3 with SD of ±4.7. After calculating the total score, the maternal autonomy was categorized through using cut off points for three equal groups. The cut off points were 5 and 9. As a result almost 47% were poorly autonomous and percentage of average and well autonomy was 24.2% and 28.5% accordingly. (Table 3)

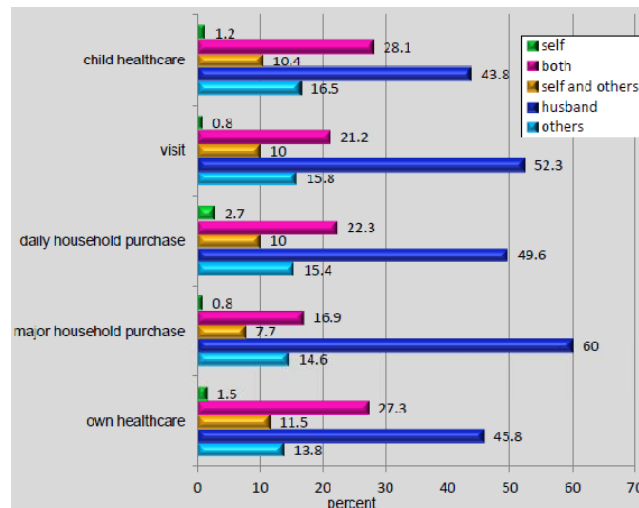


Figure 1. Household decision making status

Table 3. Maternal autonomy status

Maternal autonomy status	Poor	Average	Well
	47.30%	47.30%	28.50%

4.4 Child nutritional status

Anthropometric measurements of 124 male and 136 female children were recorded, as showed in Table 4. The total percentage of stunted children was 38.08 and total percentage of underweight children was 34.23. Stunting rate among girls were 21.15% where underweight rate was 17.69%. Among boys, stunting and underweight percentages were 16.92% and 16.54% accordingly.

Table 4. Distribution of the height and weight percentile of the children

	Girls (n=136)		Boys (n=124)	
Characteristics	Frequency	Percentage	Frequency	Percentage
Height distribution				
Stunted	55	40.44	44	35.48
Normal	81	59.56	80	64.52
Weight distribution				
Underweight	46	33.82	43	34.68
Normal	90	66.18	81	65.32

4.5 Association of maternal autonomy and child nutritional status

The height distribution of the children found to be dependent on maternal autonomy. The chi square statistic for this particular case was 6.13 with the p value <0.05 indicates a strong relationship. Among the poorly autonomous mothers about 44% children were stunted, where mothers with well autonomy were with only 27% stunted children. But the scenario didn't come out the same for weight distribution. Weight distribution of the children was not significantly associated with maternal autonomy (Table 5).

Table 5. Stunting of the children by maternal autonomy

Characteristics	Stunted	Normal	χ^2	p
Poor	44.7%	55.3%	6.13	0.047
Average	38.1%	61.9%		
Well	27%	73%		
Characteristics	Underweight	Normal	χ^2	p
Poor	39.0%	61.0%	5.839	0.054
Average	38.1%	61.9%		
Well	23.0%	77.0%		

4.6 Multiple regression to predict the vulnerability to stunting of children

Binary logistic regression model was constructed with all variables showed significant relationship by univariate analysis to see the effect of independent variable after removing the effect of other variables. The full model was significant. The true association was found significant with two predictors which was educational qualification of the respondent and exclusive breast feeding. In comparison to illiterate group, up to primary, up to secondary and above secondary literate group have around 2, 7 and 4 times less likely to have stunted children respectively. As like that children who were exclusively breastfed were 2 times less likely to have stunted children than children who were not exclusively breastfed.

Table 6. Multiple regression to predict the vulnerability to stunting

Variables	p value	Odds ratio	95% CI	
			Lower	Upper
Education of the respondent				
Illiterate (ref)	0.000			
Upton primary	0.059	2.074	0.974	4.419
Upton secondary	0.000	6.959	2.785	17.390
Above secondary	0.003	4.671	1.683	12.966
Monthly family income				
≥10000 taka (ref)		0.997		
10001- 20000 taka	0.953	1.021	0.514	2.028
≤20001 taka	0.984	0.991	0.413	2.382
Respondent's personal income				
Yes (ref)	1			

No	0.782	1.118	0.508	2.452
Exclusive breastfeeding				
Yes (ref)	1			
No	0.000	2.798	1.574	4.976
Breastfeeding duration				
Before completing 12 months (ref)	0.461			
12 to 23 months	0.321	0.663	0.294	1.494
24 months or more	0.888	0.930	0.343	2.526
Maternal autonomy				
Poor (ref)	0.463			
Average	0.434	1.325	0.655	2.683
Well	0.242	1.564	0.739	3.309

4.7 Findings of qualitative data

Qualitative data were needed to describe the real scenario of influence of maternal autonomy on child nutritional outcome. One focused group discussion with 10 married mothers who have at least one children aged between 1 to 3 years, was conducted to go in depth of the actual situation. The findings come out as following-

4.7.1 Status of maternal autonomy: Maternal autonomy was hard to describe in rural community both in the literate and illiterate group of mothers. Household decisions were mostly taken by their husbands. And it was generally accepted by the wives. As the major earning person of the family, the men are expected to have the final say on every minor or major decision of a household. In most cases women are thought to maintain only the family and they don't need to earn; the earning of the male head of the family should be regarded as sufficient. Health care of the mother's own or of their children, even if the mother feels an urgency she cannot go to the health center without the permission of her husband or parents in law. Even when a woman has personal income, she allows her husband to decide how to spend it. The participants were asked about all the five domains of household decisions, if they do participate. And the importance of taking part in this process.

4.7.2 Perception about child's health: Participants mostly expressed not having disease is the indicator of good well being. Some of them even expressed that, even if a child is visibly short in stature it's not a matter to be concerned about, childhood under nutrition that is height and weight gets better with age. Some of them specially from illiterate or low literate group they mentioned that costly food can ensure their children's good health. Educated mothers on the other hand have more clear perception that better health is ensured by balanced diet, proper hygiene etc. But this group also expressed that it's not possible all the time to get enough time to take special care for the food or better hygiene practice as they have to maintain all the household works.

4.7.3 Way to improve maternal autonomy: Participants were asked about how they can improve their maternal autonomy. They were not very clear about the idea as they have accepted the norm to listen and take decisions of others. Still education, employment and respect from the family members can improve their status they stated.

4.7.4 Husband's and other family member's role in maternal autonomy: Most of the respondents mentioned if they would be valued more, if their opinion would be appreciated more, they be more autonomous.

4.7.5 Importance of participation in household decisions for child's health outcome: The participants were in favor of the fact that better participation in household decision making will improve their child's health. They would be able maintain the time allocation as well as the resource allocation better for their child if they could have more say in the household decisions. Even when they understood what would be better for her child in some instance, they could not do accordingly as her husband would not give permission or the

process would delay as she have to wait for her husband or other members of the family to give a decision.

5 Discussion

The results of this study provide evidence for maternal autonomy to be a strong predictors of stunting of children under 3 years of age. The anthropometric index of height-for-age reflects shortfall in height-for-age show the “long-term, cumulative effects of inadequacies of nutrition and/or health”[3]. Stunting is the measure of chronic under nutrition of the children whereas underweight can be acquired acutely or it can be resulted from a chronic malnutrition. As similar to these study other studies have showed that, mother’s power to affect purchasing decisions and resources allocated to food or child care has been identified as an important factor for child nutritional status, particularly in rural settings where resources are scarce. [2]. Level of participation of mothers in the household decision-making negatively affects child under nutrition, which implies that the mothers’ participation in making decisions reduces the likelihood that their children will undergo under nutrition. There is a substantial literature that shows that when women have higher levels of autonomy at the household level for decision-making, access to resources, physical freedom, etc., they are more likely to have lower levels of infant mortality [6], and health seeking behaviors (Bloom et al., 2001). A cross-sectional survey from Chad [7] showed caregiver’s decisions regarding

feeding/breasting feeding practices, sanitation and hygiene and treatment during illness of the child, had a positive association to child height-for-age indicator and was significant even when controlled for other household variables like household structure, income generating activities, social support, etc. The World Bank and United Nations emphasize the importance of empowerment of women with relation to child growth and development in their policy statements. Many women’s empowerment programmes (such as those developed by Grameen Bank in Bangladesh and Self Employed Women’s Association in India) include strategies to achieve improved health care-seeking behaviours of women and educational programmes for child care [8]. Well autonomous mothers shown to have less stunted children than the mothers with average and poor autonomy score.

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7 References

- [1.] Ahmed S., Koenig M. A, &. Stephenson R., ‘Effects of Domestic Violence on Perinatal and Early-Childhood Mortality: Evidence From North India.’. *American Journal of Public Health*, (2006), Vol.96, No.8, pp.1423-1628.
- [2.] Anjor Bhaskar, Does greater autonomy among women provide the key to better child nutrition? June 29(2012)
- [3.] Begin F, Frongillo, Delisle, & Habicht, ‘Caregiver behaviors and resources influence child height-for-age in rural Chad’. *J Nutr* (1999) Vol.129 No.3, pp.680-686
- [4.] Bhuiya, M. Chowdhury, ‘Beneficial effects of a woman-focused development programme on child survival: evidence from rural Bangladesh’. *Social Science & Medicine* (2002), Vol.55 No.9, pp.1553-1560.
- [5.] Engle P. L, ‘Maternal work and child-care strategies in peri-urban Guatemala: nutritional effect’s’ *Child Dev* (1991), Vol.62, No.7, pp.954-965

- [6.] Gillespie S, & Haddad L, 'Attacking the double burden of malnutrition in Asia and the Pacific' (2001). Vol. ADB Nutrition and Development Series: Asian Development Bank.
- [7.] Thomas D, 'Intra-household resource allocation: An inferential approach'. Journal of Human Resources (1990). Vol.25, pp.635-664.