

Effect of Paediatric Nutrition on Growth and Development of Children at Rajshahi Division in Bangladesh

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Abstract: Paediatric nutrition plays a very significant role on growth and development of children in whole live. However the present study has conducted to find out the condition of paediatric nutrition in Bangladesh, to identify the causes of paediatric malnutrition in Bangladesh. The study was conducted at Rajshahi, Natore, Pabna and Sirajgonj District of Rajshahi Division in Bangladesh and it was survey type. Eight Hospitals were selected for the study, out of 8 Hospitals, 4 Government Hospitals and 4 Private Hospitals were selected. From each Hospitals 25 mothers were selected. So, total 200 mothers were selected. From each Hospitals 5 Doctors were selected. So, total 40 Doctors were selected. So, total respondents were 240. Data were collected from primary and secondary sources. Primary Data were collected from the respondents of the study area. Secondary data were collected from various secondary sources. Questionnaire was used for data collection. Data were collected by face to face interview with the respondents. Collected data were analyzed by using Computer Program Microsoft Excel. The findings presented in this study are based on international and domestic evidence. They clearly demonstrate the importance of an integrated approach to tackling malnutrition in Bangladesh. Programmes that have effectively reduced stunting and wasting have also addressed many of the underlying causes of malnutrition. From the result it was found that 38% respondents replied that the condition of paediatric nutrition is bad which was maximum, 62% respondents replied that Paediatric nutrition is essential for growth and development of children which was maximum. The result revealed that 64% respondents replied that children are suffering malnutrition, 71% respondents strongly agreed that people think that poverty is responsible for malnutrition and 81% respondents were strongly agreed that mothers' malnutrition during pregnancy hampers growth and development of children. It can be conclude that integrated nutrition-sensitive social protection programmes in Bangladesh should address priority focus areas for nutrition outcomes and across all three pathways. Caring practices for women and children emerges as the most critical pathway in Bangladesh.

Key words: Paediatric Nutrition, Growth, Development, malnutrition, poverty, knowledge.

1. INTRODUCTION

Rates of malnutrition in Bangladesh remain among the highest in the world, with an estimated six million children chronically undernourished. As Bangladesh's National Social Security Strategy undergoes significant reform, harnessing the potential of social protection for nutrition is vital.

Social protection is a human right and a means for states to protect their most vulnerable citizens. This is confirmed in the Universal Declaration of Human Rights, the United Nations Convention on the Rights of the Child, the International Labour Organization's constitution, and legal instruments on social security. However, social protection is far from the norm for most of the world's population: 73% of the world's population is covered partially or not at all. In Bangladesh in 2010 the social protection system reached just 35% of those living below the poverty line. Bangladesh's malnutrition burden is significant, with 41% stunting, 16% wasting, 22% with low birth weight, and 2% overweight. Bangladesh's population at last count was 156.5 million, making the number of people affected staggering. Despite a decline in the prevalence of chronic malnutrition⁴¹ among children under five from 60% in 1997 to 41% in 2011, that trend is now slowing. Prevalence of chronic malnutrition remains well above World Health Organization (WHO) 'very high' severity thresholds. Under nutrition in Bangladesh is a national multi-sector development problem. It is reducing Bangladesh's chances of reaching its goal of achieving Middle Income Country status by 2021, and is preventing millions of children from reaching their potential.

Rates of malnutrition in Bangladesh are among the highest in the world, with six million children estimated to be chronically undernourished. The decline in chronic malnutrition seen previously – from 60% in 1997 to 41% in 2011 – now appears to be slowing down. Policies and practice in Bangladesh need to have a greater focus on nutrition, at large scale and across different sectors, in order to accelerate progress on tackling the country's substantial malnutrition burden of 41% stunting and 16% wasting 10 across a population of 160 million.

2. OBJECTIVES OF THE STUDY

The objectives of the study are as follows:

1. To find out the condition of paediatric nutrition in Bangladesh.
2. To identify the causes of paediatric malnutrition in Bangladesh.
3. To provide policy recommendation.

3. DEFINITION OF KEY TERMS

3.1 The Costs of under nutrition

- Children who are undernourished between conception and age two are at high risk for impaired cognitive development, are more likely to die before the age of 5, which can adversely affect the country's productivity and growth.
- Childhood anemia alone is associated with a 2.5% drop in adult wages.
- The economic costs of under nutrition include direct costs such as the increased burden on the health care system, and the indirect costs of lost productivity.

Where Does Bangladesh Stand?

- 43% of children under the age of five are stunted, 41% are underweight, and 17% are wasted.
- 1 in 5 infants are born with a low birth weight.

Most of the irreversible damage due to malnutrition in Bangladesh happens during gestation and in the first 24 months of life.

3.2 Vitamin and Mineral Deficiencies Cause

Hidden Hunger

Although they may not be visible to the naked eye, vitamin and mineral deficiencies impact well-being, and are highly prevalent in Bangladesh, as indicated in Figure 3.

- **Vitamin A:** One-fifth of preschool aged children and one-quarter of pregnant women are deficient in vitamin A.9 Supplementation of young children and dietary diversification can eliminate this deficiency.
- **Iron:** Current rates of anemia among preschool aged children and pregnant women are 47%10.

Iron-folic acid supplementation of pregnant women and the provision of multiple micronutrient supplements to infants and young children are effective strategies to improve the iron status of these vulnerable subgroups.

- **Iodine:** While 84% of households consume iodized salt, over half a million infants remain unprotected from iodine deficiency disorders.

3.3 Risk Factors for under nutrition in Bangladesh

Low Birth weight: Low birth weight is a major factor in child malnutrition and mortality rates in Bangladesh. Approximately 40% of babies are born with a low birth weight and are more likely to continue to be malnourished during childhood.

- **Sub-optimal Infant and Young Child Feeding Practices:** Fewer than half (43%) of all newborns receive breast milk within one hour of birth, 2 and less than half (43%) of infants under six months are exclusively breastfed.2 Moreover, during the important transition period to a mix of breast milk and solid foods between six and nine months of age, one-quarter of infants are not fed appropriately with both breast milk and other foods.
- **High Disease Burden:** Close to 1 in 5 child deaths are due to diarrhea.6 Under nutrition increases the risk of falling sick. Moreover, undernourished children who fall sick are much more likely to die from illness than well-nourished children.
- **Poor Water and Sanitation:** Frequency of disease is dependent on many factors, but especially on safe water and sanitation. In Bangladesh, poor water and sanitation affects personal hygiene, latrine use, insufficient hand-washing, the inability to keep food clean, and unsafe refuse disposal. These all increase the burden of illness.
- **Low Status of Women:** A central factor in malnutrition in Bangladesh is the status of women. Despite the rapid increase in educational attainment and entry into the workforce by women in the past twenty years, women in the country generally have less freedom to make decisions about what, how and when to feed their children—decisions that are dominated by mothers-in-law and husbands. Social mores about independent behaviors and social interactions also compromise the quality of child care.

- **Vulnerability to Natural Disasters:** Bangladesh is extremely vulnerable to climatic and physical environmental changes such as cyclones, floods, droughts, and river-bank erosions. Repeated frequency of these natural disasters in short intervals has direct implications on water-borne disease outbreaks and household food security of the general population.
- **Dietary Quality:** Caloric availability does not guarantee food security. Between 2000 and 2007, Bangladesh was largely self-sufficient in terms of production of rice. However, improvements in caloric availability have not translated into positive effects on maternal health and child nutrition. Low dietary diversity and lack of equitable distribution of food manifest as vitamin and mineral deficiencies and maternal and child under nutrition.

4. METHODOLOGY OF THE STUDY

4.1 Study area:

The study was conducted at Rajshahi, Natore, Pabna and Sirjgonj District of Rajshahi Division in Bangladesh.

4.2 Design of the Study:

The study was survey type.

4.3 Sample size:

Eight Hospitals were selected for the study, 2 from Rajshahi District, 2 from Natore district, 2 from Pabna District and 2 from Sirajgonj district. Out of 8 Hospitals, 4 Government Hospitals and 4 Private Hospitals were selected. From each Hospitals 25 mothers were selected. So, total 200 mothers were selected. From each Hospitals 5 Doctors were selected. So, total 40 Doctors were selected. So, total respondents were 240.

4.4 Source of Data

Data were collected from primary and secondary sources.

4.5 Source of Primary Data

Primary Data were collected from the respondents of the study area.

4.6 Source of Secondary Data

To conduct this research, secondary data were collected from various sources including authentic writings, books, thesis, articles, documents etc. of eminent authors, journals, statistical reviews, academic papers, government documents, newspapers, magazines, souvenirs, published and unpublished research works, internet homepages etc. relevant to the main theme of the study.

4.7 Tools for data Collection

Questionnaire was used for data collection.

4.8 Method of data Collection

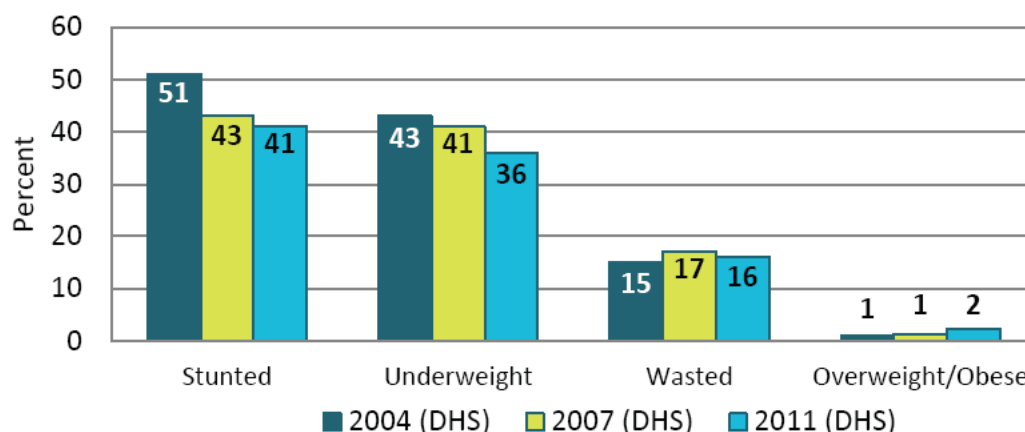
Data were collected by face to face interview with the respondents.

4.9 Data Analysis:

Collected data were analyzed by using Computer Program Microsoft Excel.

5. RESULTS AND DISCUSSION

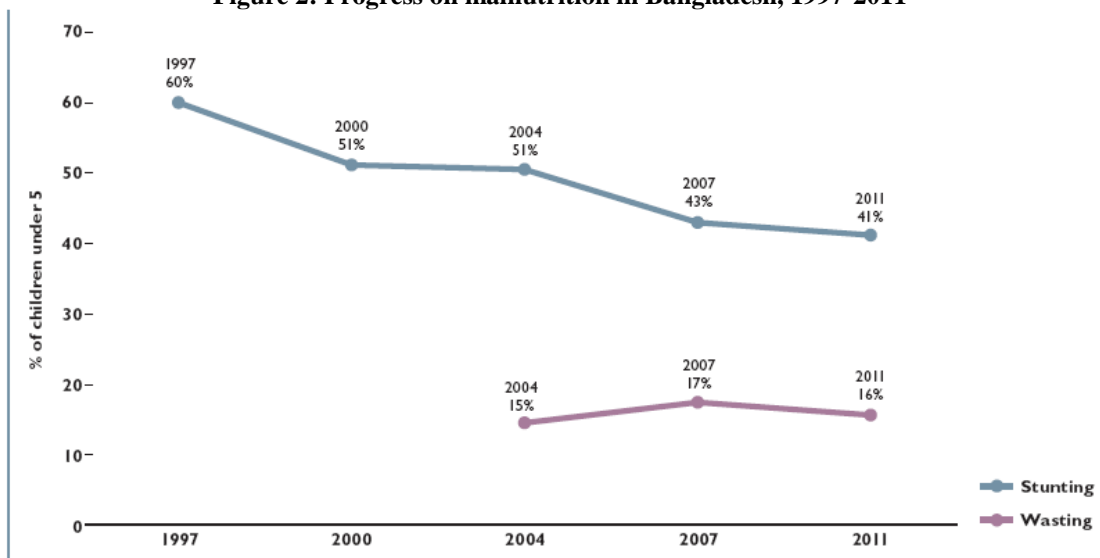
Figure 1: Trends in nutritional status of children under age 5, from 2004-2011.



5.1 Progress on malnutrition in Bangladesh

Bangladesh’s malnutrition burden is significant, with 41% stunting, 16% wasting, 22% with low birth weight, and 2% overweight. Bangladesh’s population at last count was 156.5 million, making the number of people affected staggering. Despite a decline in the prevalence of chronic malnutrition among children under five from 60% in 1997 to 41% in 2011 (see Figure 1), that trend is now slowing. Prevalence of chronic malnutrition remains well above World Health Organization (WHO) ‘very high’ severity thresholds. Under nutrition in Bangladesh is a national multi-sector development problem. It is reducing Bangladesh’s chances of reaching its goal of achieving Middle Income Country status by 2021, and is preventing millions of children from reaching their potential.

Figure 2: Progress on malnutrition in Bangladesh, 1997-2011



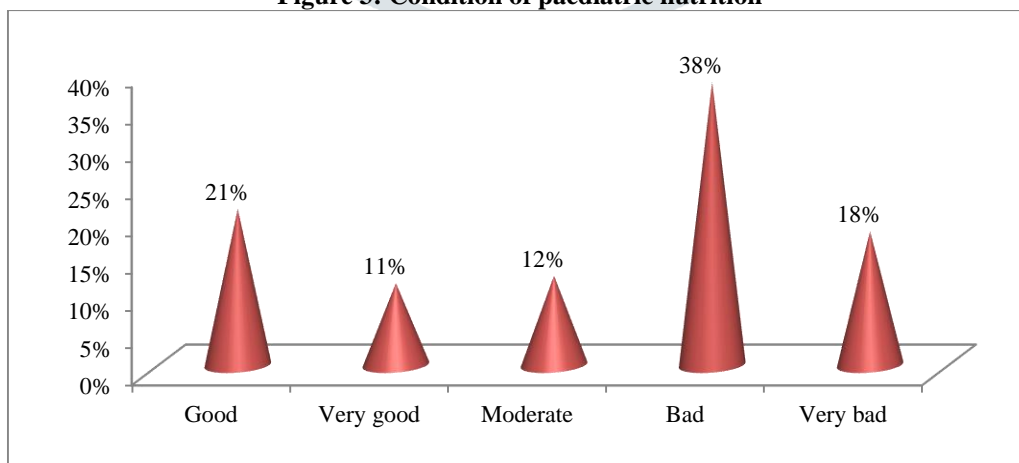
Source: Save the Children based on demographic health survey from Bangladesh

Table1: Condition of paediatric nutrition

Condition	Percent
Good	21%
Very good	11%
Moderate	12%
Bad	38%
Very bad	18%
Total	100%

Source: Field Survey

Figure 3: Condition of paediatric nutrition



Source: Field Survey

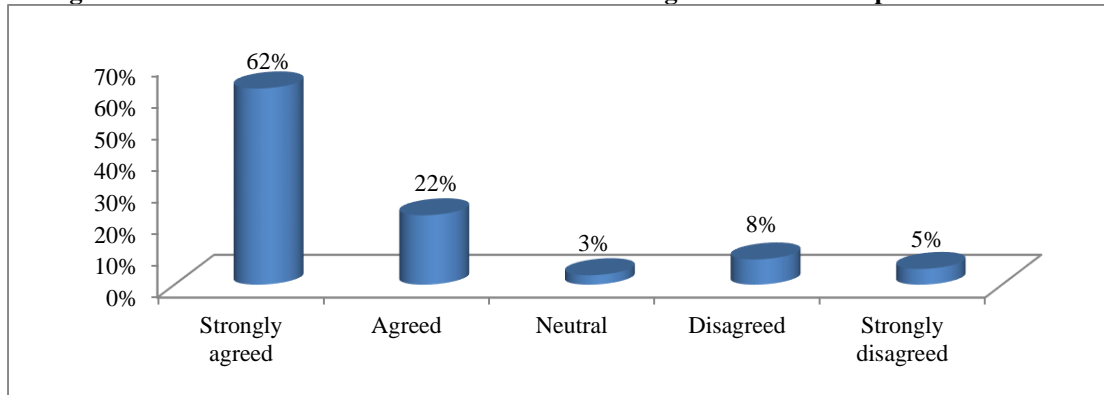
Condition of paediatric nutrition has shown in the above table and graph. From the result it was found that 38% respondents replied that the condition of paediatric nutrition is bad which was maximum and 11% respondents replied that the condition of paediatric nutrition is very good which was minimum.

Table 2: Whether Paediatric nutrition is essential for growth and development of children

Respondents' opinion	Percent
Strongly agreed	62%
Agreed	22%
Neutral	3%
Disagreed	8%
Strongly disagreed	5%
Total	100%

Source: Field Survey

Figure 4: Whether Paediatric nutrition is essential for growth and development of children



Source: Field Survey

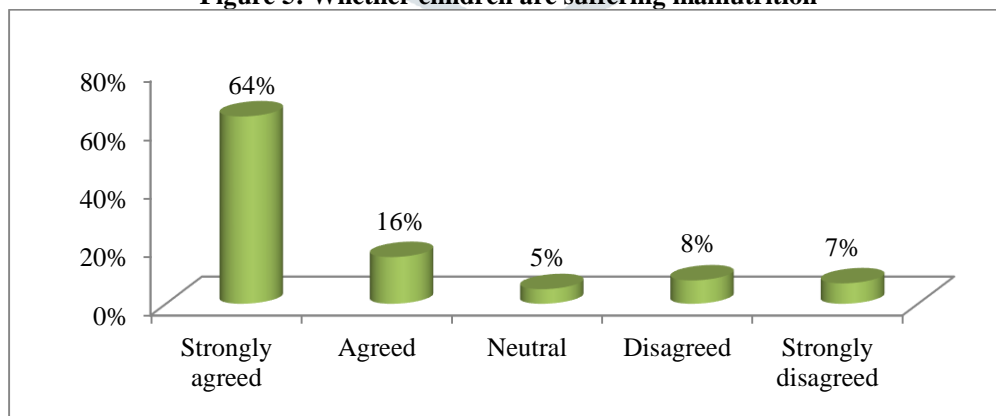
Whether Paediatric nutrition is essential for growth and development of children shown in the above. From the result it was found that 62% respondents replied that Paediatric nutrition is essential for growth and development of children which was maximum but only 3% respondents replied that paediatric nutrition is essential for growth and development of children which was neutral. On the other hand 8% respondents disagreed that paediatric nutrition is essential for growth and development of children and only 5% respondents strongly disagreed that paediatric nutrition is essential for growth and development of children.

Table 3: Whether children are suffering malnutrition

Respondents' opinion	Percent
Strongly agreed	64%
Agreed	16%
Neutral	5%
Disagreed	8%
Strongly disagreed	7%
Total	100%

Source: Field Survey

Figure 5: Whether children are suffering malnutrition



Source: Field Survey

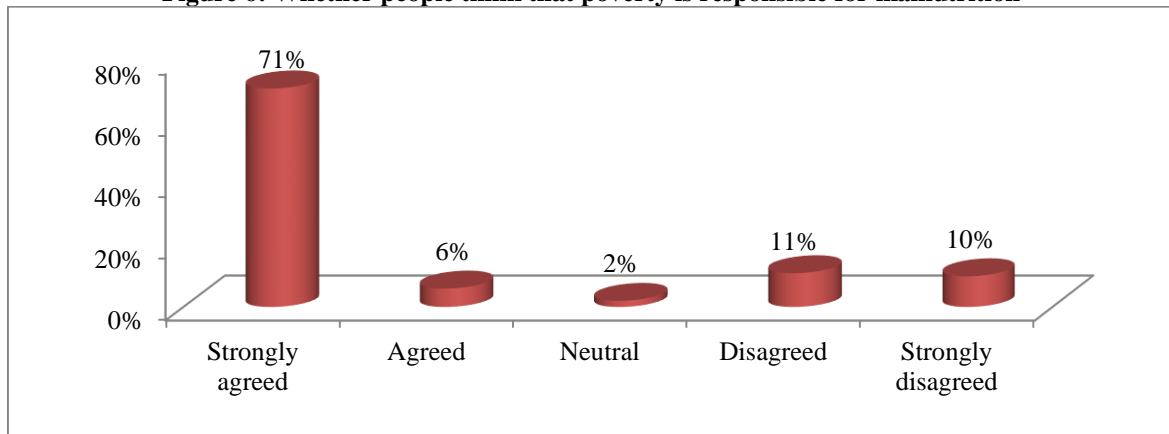
Whether children are suffering malnutrition has shown in the above. From the result it was found that 64% respondents replied that children are suffering malnutrition which was maximum but 5% respondents were neutral which was minimum. On the other hand 16% respondents agreed that children are suffering malnutrition, 8% respondents disagreed that children are suffering malnutrition and 7% respondents strongly disagreed that children are suffering malnutrition.

Table 4: Whether people think that poverty is responsible for malnutrition

Respondents' opinion	Percent
Strongly agreed	71%
Agreed	6%
Neutral	2%
Disagreed	11%
Strongly disagreed	10%
Total	100%

Source: Field Survey

Figure 6: Whether people think that poverty is responsible for malnutrition



Source: Field Survey

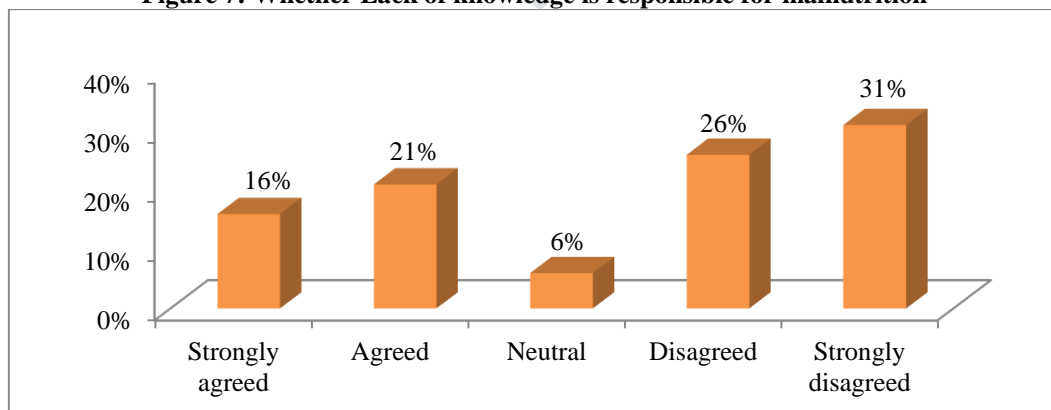
Whether people think that poverty is responsible for malnutrition has shown in the above table and graph. From the result it was found that 71% respondents strongly agreed that people think that poverty is responsible for malnutrition which was maximum but 2% respondents were neutral which was minimum. On the other hand 6% respondents agreed that people think that poverty is responsible for malnutrition, 11% respondents disagreed that people think that poverty is responsible for malnutrition and 10% respondents strongly disagreed that people think that poverty is responsible for malnutrition.

Table 5: Whether Lack of knowledge is responsible for malnutrition

Respondents' opinion	Percent
Strongly agreed	16%
Agreed	21%
Neutral	6%
Disagreed	26%
Strongly disagreed	31%
Total	100%

Source: Field Survey

Figure 7: Whether Lack of knowledge is responsible for malnutrition



Source: Field Survey

Whether Lack of knowledge is responsible for malnutrition has shown in the above table and graph. From result it was found that 31% respondents strongly disagreed that lack of knowledge is responsible for malnutrition which was maximum but 6% respondents were neutral.

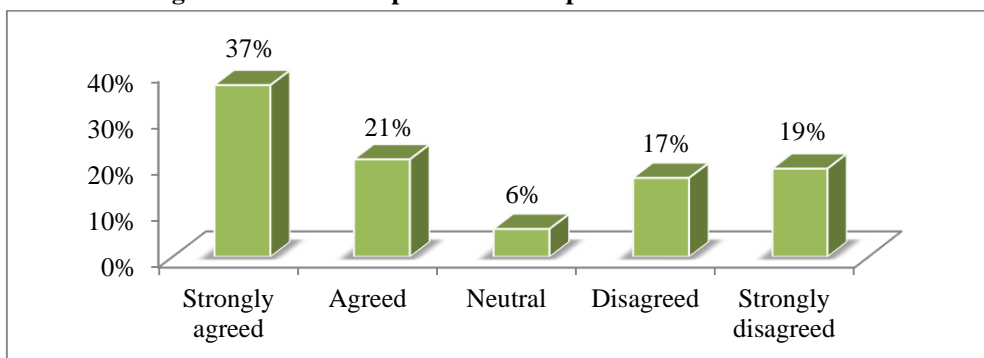
respondents were neutral which was minimum. On the other hand 16% respondents strongly agreed that lack of knowledge is responsible for malnutrition, 21% respondents agreed that lack of knowledge is responsible for malnutrition and 26% respondents disagreed that lack of knowledge is responsible for malnutrition.

Table 6: Whether superstition is responsible for malnutrition

Respondents' opinion	Percent
Strongly agreed	37%
Agreed	21%
Neutral	6%
Disagreed	17%
Strongly disagreed	19%
Total	100%

Source: Field Survey

Figure 8: Whether superstition is responsible for malnutrition



Source: Field Survey

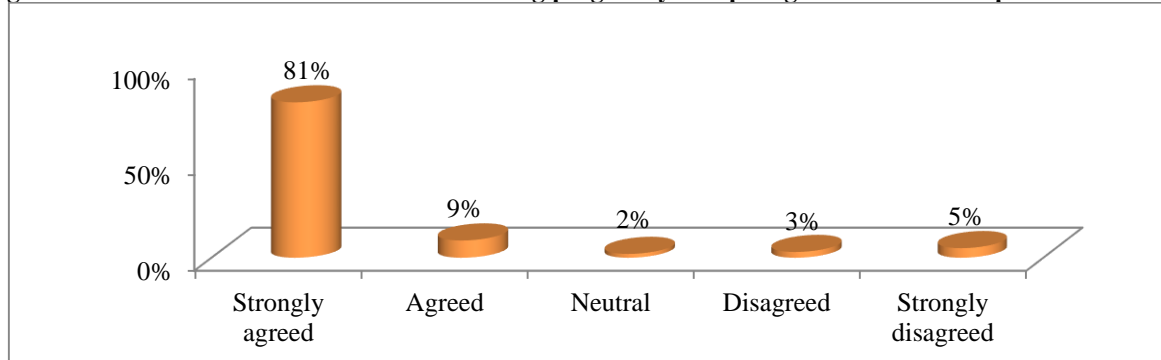
Whether superstition is responsible for malnutrition has shown in the above table and graph. From result it was found that 37% respondents were strongly agreed that superstition is responsible for malnutrition which was maximum but 6% respondents were neutral. On the other hand 21% respondents were agreed that superstition is responsible for malnutrition, 17% respondents were disagreed that superstition is responsible for malnutrition.

Table 7: Whether mothers' malnutrition during pregnancy hampers growth and development of children

Respondents' opinion	Percent
Strongly agreed	81%
Agreed	9%
Neutral	2%
Disagreed	3%
Strongly disagreed	5%
Total	100%

Source: Field Survey

Figure 9: Whether mothers' malnutrition during pregnancy hampers growth and development of children



Source: Field Survey

Whether mothers' malnutrition during pregnancy hampers growth and development of children has shown in the above table and graph. From result it was found that 81% respondents were strongly agreed that mothers' malnutrition during pregnancy hampers growth and development of children which was maximum but 2% respondents were neutral which was minimum. On the other

hand 9% respondents were agreed that mothers' malnutrition during pregnancy hampers growth and development of children, 3% respondents were disagreed that mothers' malnutrition during pregnancy hampers growth and development of children and 5% respondents were strongly disagreed that mothers' malnutrition during pregnancy hampers growth and development of children.

6. CONCLUSION

Despite progress illustrated by successful family planning and a drastic drop in fertility rates since 1971, women in Bangladesh still have a lower social status than men. This is deeply embedded in cultures and traditions that place greater value on men and boys and view girls and women as social and economic burdens. Women's status remains low from one generation to the next because of a preference for sons and because daughters have less access to food, health services and education. Women are a vital part of the solution of improving nutrition in Bangladesh.

Bangladesh has one of the highest rates of child marriage below the age of 15 in the world, illustrating how much more needs to be done to empower women and adolescent girls in Bangladesh. Girls who marry young typically give birth at younger ages, increasing the risk of intra-uterine growth retardation (poor growth of a baby while in the mother's womb) leading to stunting at birth. With around 20% of babies in Bangladesh born stunted, half of all stunting in under-fives occurs before birth. Child marriage also leads to adolescent girls dropping out of education and restricts their social development. It perpetuates an unequal society, increasing female vulnerability. Child marriage, early pregnancy and stunting at birth are critical points for malnutrition across the lifecycle. Empowering women and targeting adolescent girls for nutrition-sensitive social protection in Bangladesh is a clear priority.

Maternal and child malnutrition is the cause of 45% of preventable child deaths and leads to irreversible, lifelong consequences for a child's physical and cognitive development. The resulting human and economic cost of malnutrition is huge. Malnutrition costs Bangladesh an estimated 2–3% loss of national income due to its long-term impact on productivity. Chronic malnutrition during childhood for poor children may lead to late enrolment in school, which in turn may lead to poor education outcomes and 20% less earning power than children who complete their education. These lifelong impacts, alongside persistently high rates of malnutrition, cost Bangladesh an estimated US\$1 billion a year, or more than Bangladeshi taka (BDT) 75 billion, in lost economic productivity.

Around 20% of babies in Bangladesh are born stunted. Girls who marry young typically give birth at younger ages. Giving birth at a young age increases the risk of intra-uterine growth retardation (poor growth of a baby while in the womb), leading to stunting at birth. Child marriage leads to girls dropping out of education and restricts their social development. It perpetuates an unequal society, enhancing female vulnerability. Child marriage, early pregnancy and stunting at birth are critical points for malnutrition across the lifecycle.

RECOMMENDATIONS

The recommendations of the study are as follows:

- 1) High-level political commitment and leadership and the integration of nutrition across a multi-sector environment is essential.
- 2) Governance for paediatric nutrition in Bangladesh should be improved.
- 3) The development of paediatric nutrition-sensitive social protection requires a collaborative effort.
- 4) There must be continued development of multi-sector mechanisms to allow civil society to provide effective technical assistance to support the strengthening and expansion of social protection for paediatric nutrition.
- 5) To reflect nutrition-sensitive priorities and to embed nutrition-sensitive social protection, national paediatric nutrition forums and mechanisms need to be extended to include social protection specialists. This is particularly important for the Scaling Up paediatric Nutrition (SUN) movement.
- 6) Leadership should be demonstrated by turning the many commitments made on nutrition into practice, specifically by following through on the Nutrition for Growth commitment to review national safety net programmes to ensure they are paediatric nutrition-sensitive and deliver improved paediatric nutrition outcomes.
- 7) Paediatric nutrition kept high on the development agenda with a focus on empowering women and targeting adolescent girls.

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