

ORIGINAL ARTICLE

## Childhood mortality and Child nutritional status of Bangladesh: A review on Demographic and Health Survey

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### Abstract

**Background:** Childhood mortality and child nutritional status of the developing countries are very much concerning issues of the world. **Objective:** The objective of this study was to evaluate the situation of childhood mortality and child nutritional status of Bangladesh with the comparative analysis and progress of childhood mortality and child nutritional status from 1993 to 2014. **Methodology:** In this regard this paper reviews the Bangladesh Demographic and Health Surveys (BDHS) conducted in 1993-94, 1996-97, 1999-2000, 2004, 2007, 2011 and 2014, which were analyzed on infant, child, under-five mortality and child nutritional status in detail. **Result:** The evidences reflected in BDHSs show that infant, child and under-five mortality in Bangladesh have declined steadily at least over the past years. However, differentials in trends and patterns of childhood mortality and even child nutritional status by the demographic determinants have not been explained elaborately. According to the 1993-1994 and the 2014 surveys found infant mortality two times, child mortality six times and under-five mortality rates three times declined in 2014 than those were in 1993-94. On the contrary, stunting, wasting and underweight are also declined in 2014 comparatively than the last two decades but it is noted that wasting situation is not gradually declined. **Conclusion:** Bangladesh successfully declined the total number of childhood mortalities and nutrition related mortalities and complexities. Many non-government and government funded organizations should run some effective programs to overcome the situation completely in Bangladesh. [*Journal of Current and Advance Medical Research* 2015;2(2):42-46]

**Keywords:** childhood mortality, child nutritional status, demographic health survey, Bangladesh

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## Introduction

Bangladesh is one of the poorest countries of the world with the highest population density but then the country has achieved many health indicators for last few years; In spite of remarkable advances in public health during recent decades, many people throughout the developing world remain vulnerable to food insecurity, under-nutrition, and ill health<sup>1</sup>. Childhood mortality, particularly in the first 5 years of life, is a major global concern and the target of Millennium Development Goal 4. Although the majority of childhood deaths occur in Africa and Asia, it is also very much concerning one of the issues of the whole world<sup>2</sup>. Maternal malnutrition and poor gestational weight gain are the most important causes of low birth weight and high rates of newborn mortality<sup>3</sup>. Under-nutrition in early childhood is associated with poor cognitive development and some changes in behavior<sup>4</sup>. Bangladesh has one of the world's highest rates of low birth weight along with prevalent traditional care practices that leave newborns highly vulnerable to hypothermia, infection, and early death<sup>5</sup>. Bangladesh is similar to many other developing countries where under-nutrition is one of the leading causes of childhood morbidity and mortality. Under-nutrition among children is often caused by the combined effects of improper or insufficient food intake, repeated episodes of infections, and inadequate care during sickness<sup>6</sup>. Additionally, under-nutrition affects somatic growth, impairs the immune system, and increases the risk of infection<sup>7-9</sup>. Moreover, Low birth weight (LBW) is a major child health problem in Bangladesh and continuing to great threat to child health and child survival in Bangladesh. LBW is a silent emergency but crisis is real and its persistence has profound and frightening impact on neonatal mortality<sup>10</sup>. The improvements in nutrition status in Bangladesh, particularly child nutrition outcomes,

have been relatively slow, despite remarkable improvements in the country's food situation as well as in the health sector. At present more than 40% of children under-5 years of age are stunted<sup>11</sup>. The primary objective of this study was to review the situation of childhood mortality and child nutritional status in Bangladesh. The paper was also examined the comparative analysis and progress of childhood mortality and child nutritional status from 1993 to 2014.

## Methodology

The study was on the secondary data collected from Bangladesh Demographic and Health Survey (BDHS) 1993-94, 1996-97, 1999-2000, 2004, 2007, 2011 and 2014. From these seven Survey reports childhood mortality trends-patterns and child nutritional status were calculated to observe their overall situations.

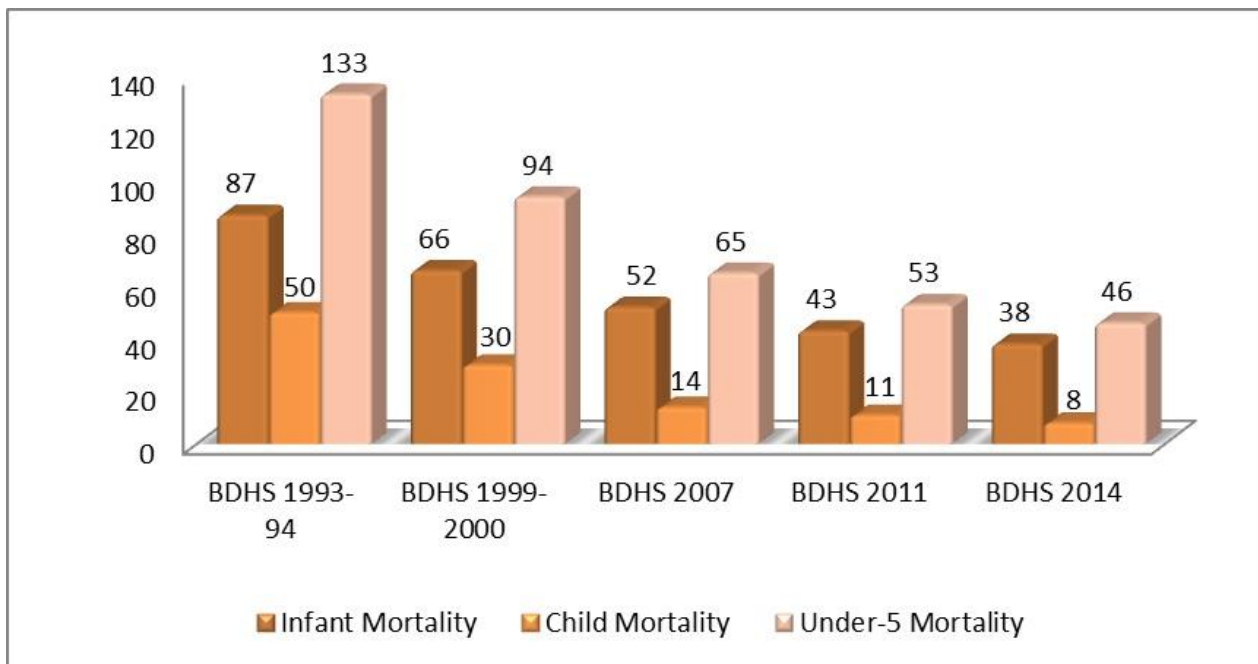
## Results

Since 1993-1994, the Demographic health surveys in Bangladesh showed that it has been successfully reducing childhood mortality rates up to 2014 where the survey reports show neonatal mortality has declined to 28 deaths in 2014 from 52 deaths per 1000 live births and gradually from 1996-97 to 2011 the rates reduced. Postnatal mortality had declined to 10 deaths in 2014 per 1000 live births from 35 deaths of 1993-94. Infant mortality rates were 87 deaths in 1993-94, 65 deaths in 2004, 43 deaths in 2011 and 38 deaths in 2014 per 1000 live births. Child mortality rate declined to 8 deaths in 1000 per live births from 50 deaths in 1993-94. On the contrary, Under-5 mortality rates were 133 deaths in 1993-94, 116 deaths in 1996-97, 94 deaths in 1999-2000, 88 deaths in 2004, 65 deaths in 2007, 53 deaths in 2011 and 46 deaths in 2014 per 1000 live births in Bangladesh [Table 1].

**Table 1: Childhood Mortality Trends in Bangladesh**

Categories	1993-94	1996-97	1999-2000	2004	2007	2011	2014
Neonatal Mortality	52	48	42	41	37	32	28
Postnatal Mortality	35	34	24	24	15	10	10
Infant Mortality	87	82	66	65	52	43	38
Child Mortality	50	37	30	24	14	11	8
Under 5 Mortality	133	116	94	88	65	53	46

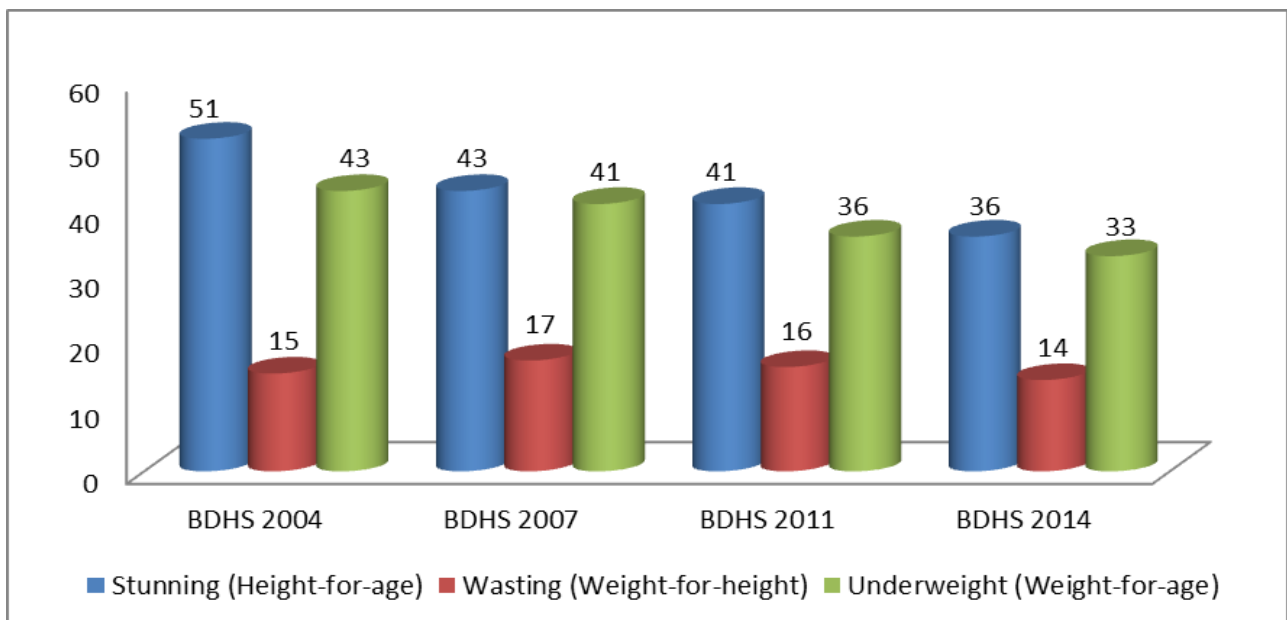
[Data Source: BDHS 1993-94, 1996-97, 1999-2000, 2004, 2007, 2011 and 2014]



**Figure 1: Trends in infant, child and under-5 mortality rates, 1989-2014** [Data Source: BDHS 1993-94, 1999-2000, 2007, 2011 and 2014]

Figure 1 presents the infant, child and under-5 mortality rates per 1000 live births from 1993-2014 where the observation pointed that infant mortality rate was 87 deaths per 1000 live births in 1993-94 and the number declined by 66 in 1999-2000, 52 in 2007, 43 in 2011 and 38 in 2014. Child mortality rates were also declining trends from 1993-2014; 50

deaths were in 1993-94, 30 in 1999-2000, 14 in 2007, 11 in 2011 and 8 in 2014 per 1000 live births. Under-5 mortality rates, on the other hand, were 133 deaths per 1000 live births in 1993-94 but the number declined and reached at 94 in 1999-2000, 65 in 2007, 53 in 2011 and even 46 in 2014.



**Figure 2: Trends in nutritional status of child under age 5, 2004-2014** [Data Source: BDHS 2004, 2007, 2011 and 2014]

Figure 2 shows the information of the nutritional status of child under-5 from 2004 to 2014, there has been some improvement in child nutritional status

over the past decade in Bangladesh than other developing countries of the world. The level of stunting among children under-5 has declined from

51% in 2004 to 36% in 2014. In the last three years it declined by 5% points. Wasting increased to 17% in 2007 from 15% in 2004. It has then gradually declined to 16 percent in 2011 and 14% in 2014. The level of underweight has declined from 43% in 2004 to 33% in 2014 and also it has declined gradually to 41% in 2007 and 36% in 2011.

## Discussion

Higher fertility means higher mortality observed in many developing countries and fertility is still high, although it has begun to decline in some countries. Reductions in fertility have been dramatic in Asia and the Pacific; substantial in Central and South America; and hardly noticeable in Africa. Increasingly, population policies will be considered as an integral part of social and economic development; and family planning will receive increasing attention as a human right, as an element of improved maternal and child health, and also as a means of moderating high rates of population growth<sup>13</sup>. The study reveals that Infant mortality rate has declined in 2014 by 38 than the rate 87 of 1993-94 what is more than half of 1993-94. Bangladesh has successfully reduced child mortality rates what was 50 in 1993-94; now it is only 8 in 2014. On the other hand, Under-5 mortality rate was 133 in 1993-94 but it declined almost half 65 in 2007 and the declining trends of under-5 mortality continuous up to 2014 where the estimation has found three times less than that was in 1993-94 in Bangladesh. On the other hand, the issue of higher female mortality is than male mortality during childhood in developing countries<sup>15</sup>. It was found that women with a combination of high parity and low child mortality most probably represent a group with superior socio-economic and or health conditions which contribute to the lower risk of neo-natal and post-neo-natal death<sup>14</sup>.

Malnutrition is one of the principal causes of child mortality in developing countries including Bangladesh<sup>18</sup>. Maternal malnutrition and poor gestational weight gain are the most important causes of low birth weight and high rates of newborn mortality<sup>19</sup>. Maternal and child under nutrition and micronutrient deficiencies affect approximately half of the world's population. These conditions include intrauterine growth restriction (IUGR), low birth weight, protein-energy malnutrition, chronic energy deficit of women, and micronutrient deficiencies. Although the rates of stunting or chronic protein-energy malnutrition are increasing in Africa, the absolute numbers of stunted children are much higher in Asia. The four

common micronutrient deficiencies include those of iron, iodine, vitamin A, and zinc. All these conditions are responsible directly or indirectly for more than 50% of all under-5 deaths globally<sup>17</sup>. However, The nutritional status of children in the survey population is compared with the World Health Organization (WHO) Child Growth Standards, which are based on an international sample of ethnically, culturally, and genetically diverse healthy children living under optimum conditions that are conducive to achieving a child's full genetic growth potential<sup>12</sup>. Urban children are taller and heavier than their rural counterparts in almost all low-income and middle-income countries. The urban-rural differential is largest in Andean and central Latin America like Peru, Honduras, Bolivia, and Guatemala; in some African countries such as Niger, Burundi, and Burkina Faso; and in Vietnam and China. It is smallest in southern and tropical Latin America (example: Chile and Brazil). Urban children in China, Chile, and Jamaica are the tallest in low-income and middle-income countries, and children in rural areas of Burundi, Guatemala, and Niger the shortest, with the tallest and shortest more than 10 cm apart at age 5 years. The heaviest children live in cities in Georgia, Chile, and China, and the most underweight in rural areas of Timor-Leste, India, Niger, and Bangladesh. Between 1985 and 2011, the urban advantage in height fell in southern and tropical Latin America and south Asia, but changed little or not at all in most other regions. The urban-rural weight differential also decreased in southern and tropical Latin America, but increased in east and Southeast Asia and worldwide, because weight gain of urban children outpaced that of rural children<sup>16</sup>. The nutritional status of under-five children is a sensitive sign of a country's health status as well as economic condition. The main contributing factors for under-five malnutrition were found to be child's age, mother's education, father's education, father's occupation, family wealth index, currently breast-feeding, place of delivery and division<sup>20</sup>.

## Conclusion

Bangladesh is one of the developing countries of the world where many health and nutrition related indicators improved over the past few decades. Bangladesh successfully declined the total number of childhood mortalities and nutrition related mortalities and complexities. Many non-government and government funded organizations should run some effective programs to overcome the situation completely in Bangladesh. Urban development also should take care with providing

proper education and health facilities, which will work as the massive interventions to develop the overall health status in Bangladesh.

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