



Understanding the Maternal Health Situation of Bangladesh in Relation to Other South Asian Countries

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Abstract:

Background: Bringing down the maternal mortality ratio from 569 to 143 was the target for Bangladesh to achieve Millennium Development Goal 5, that is to reduce maternal mortality ratio by three-quarters between the years 1990-2015 but Bangladesh has achieved it up to 176 per 100000 live births by 2015. Though the achievement was good by the time period but the target as per the Millennium Development Goal 5 was not fulfilled yet and remained as a challenge for Bangladesh. For that knowing the causes of it and taking necessary steps for improving maternal health situation in Bangladesh has become essential. And so, in this article it is tried to present, analyze and interrelate recent data in such a way that the barriers could be identified easily for taking actions.

Main Text: This manuscript has prepared considering three objectives: to present the maternal health situation of Bangladesh on the basis of contemporary data, to compare the situation of Bangladesh with other South Asian countries and to identify some scopes for improving the maternal health situation of Bangladesh. A rigorous literature review has been done as a main method of data collection from some renowned journals and research reports of different national and international health organizations published from 2001 to May 2018 and tables and graphs were made according to the objectives. The data analysis explores that in the mothers' age group 35-39, Maternal Mortality Rate and Maternal Mortality Ratio both have increased by 24 and 435 respectively from the year 2001 to 2010 in Bangladesh where the maternal mortality ratio has increased nearly twice which should be a matter of great concern for Bangladesh. Besides, for some cases, maternal health situation of Bangladesh in the national level remains in a struggling situation to improve like Sri-Lanka because of the rural area backwardness, for examples antenatal care visit 1 and 4, place of delivery, presence of skilled birth attendance during delivery and for some case, all countries in South Asia have shown lower participation, take or example postpartum care for mothers.

Conclusion: This paper will be very supportive for the maternal health researchers, medical anthropologist, medical practitioners for further studies and specifically for the health-policy makers and corresponding authorities to take necessary actions for overcoming the obstacles of improving maternal health situation in Bangladesh.

Keywords: Maternal Mortality Ratio, Maternal Health, Maternal Mortality Rate, Antenatal Care, Postnatal Care, Skilled Birth Attendance, Bangladesh, South Asia.

1. INTRODUCTION

Maternal deaths or maternal mortality refers to the death of a women while pregnant or within 42 days of termination of pregnancy and maternal mortality ratio refers to the death of women per 100,000 live births or the complete expulsion or extraction from its mother of a product of conception, irrespective of the duration of the pregnancy, which, after such separation, breaths or shows any other evidence of live (WHO, 2018). It remains a major challenge to health system worldwide. Every day, approximately 830 women die (WHO, Feb 16, 2018) from preventable causes related to pregnancy and child birth. Reliable information about the rates and trends in maternal mortality is essential for

resource mobilization, planning and assessment of progress towards Sustainable Development Goal 3.1 by reducing the global maternal mortality ratio to less than 70 per 100,000 live births by 2030. Despite of wide disparities in socio-economic and health indicators, many countries in South Asia region are unlikely to reach Sustainable Development Goal (SDG 3.1).

In addition, as ensuring safe motherhood is essential to reduce maternal mortality, it is needed to clarify the meaning of it. Safe motherhood depends mainly on delivery by trained or professional personnel, particularly through institutional facilities. Globally, while 86 percent of pregnant women access antenatal care with skilled health personnel at least once, only three in five (62 per cent) receive at least four antenatal visits. Whereas, in South Asia, region with the highest rates of maternal mortality, only 46% women received at least 4 antenatal visits (UNICEF, 2018). Over the past few decades, there has been a growing awareness of the need to improve quality across healthcare delivery, driven by the need to reduce inequalities and effectively translate evidence into practice alongside the changing expectations of patients and care-givers (Mian, et.al, 2018:2). Also, the condition of having skilled birth attendance is as same.

As this article is presenting the overall situation of maternal mortality in Bangladesh in comparison to other South Asian countries, it is obvious to locate the space of it. South Asia represents the southern region of the Asian continent, which comprises the sub-Himalayan SAARC countries. Topographically, it is dominated by the Indian Plate, bounded on the south by the India Ocean and on land (clock-wise, from west) by west Asia, central Asia, East Asia and south-east Asia. South Asia, where 24% of global maternal deaths occurred, is home to 1.6 billion people across eight countries: Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan and Sri Lanka (El-Saharthy, 2015), still face huge public health challenges, particularly in maternal health.

Furthermore, South Asia covers about 5.2 million km² (2 million mi²), which is 11.71% of the Asian continent and 3.5% of the world's land surface area. The population of South Asia is about 1.891 billion, about one-fourth of the world's population, making it both the most populous and the most density populates geographical region in the world. Overall, it accounts for about 39.49% of Asia's population, over 24% of the world population and is home to a vast array of peoples. So, the maternal health of this number of population has a great impact on world population (Desai, 2002). In South Asia, maternal mortality ratio ranges from 29/100 000 live births in Sri Lanka to 400/100,000 in Afghanistan in 2015 (Bhutta, et al., 2004:816).

Bringing down the maternal mortality ratio from 569 to 143 was the target for Bangladesh to achieve Millennium Development Goal 5, that is to reduce maternal mortality ratio by three-quarters between the years 1990-2015 but Bangladesh has achieved it up to 176 per 100000 live births by 2015. Though the achievement was good by the time period but the target as per the Millennium Development Goal 5 was not fulfilled yet and remained as a challenge for Bangladesh. For that knowing the causes of it and taking necessary steps for improving maternal health situation in Bangladesh has become essential. And so, in this article it is tried to present, analyze and interrelate recent data in such a way that the barriers could be identified easily for taking actions

2. METHODS AND OBJECTIVES

This manuscript has written considering three objectives: to present the maternal health situation of Bangladesh on the basis of contemporary data, to compare the situation of Bangladesh with other South Asian countries and to identify some scopes for improving the maternal health situation of Bangladesh. A rigorous literature review has been done as a main method of data collection from Elsevier, Lancet, WHO, UNICEF, BBMS, NIPORT published from 2001 to May 2018 and then the authors have prepared some tables and graphs from those big data to analyze the situation of maternal health in Bangladesh to compare it with in the other South Asian countries.

3. CAUSES OF MATERNAL MORTALITY

In 2013, 289000 maternal deaths took place globally (World Bank 2014). Maternal mortality has declined by 45% since 1990-2013, and while considerable progress has been made particularly in recent years, it is now extremely unlikely that the goal of reducing maternal mortality by 75% will be met. Women face the higher risk of maternal death in South Asia and Sub-Saharan Africa. The most important direct causes are hemorrhage, hypertension, abortion, and sepsis. The most frequent complications are anemia and depression, but prolonged and obstructed labor has the highest burden

of diseases because of disabilities associated with fistulas. The risk of maternal deaths has two components: the risk of getting pregnant, which is a risk related to fertility and its control or lack of control; and the obstetric risk of developing a complication and dying while pregnant or in labour. The obstetric risk is highest at the time of delivery. The acceleration of maternal deaths reduction will require improving quality of care in referral and primary health care facilities (Filippi, Chou, Ronsmans, Graham & Say2016:2)

The causes of maternal mortality are mainly direct and indirect obstetric complications. According to the last two surveys of Bangladesh Maternal Health Service and Maternal Health Survey (BMMS 2001; 27, BMMS 2010;44) during the period of 2001-2010, number of maternal deaths for direct obstetric causes decreased from 225 to 123 per 100,000 maternal deaths, about 50% reduction of the maternal deaths. However, no reduction has been found in case of indirect obstetric complications (49 in 2001 and 68 in 2010). In 2010, about 30% and 20% maternal deaths are found due to the most common direct obstetric complication - Hemorrhage and Eclampsia. A remarkable number of maternal deaths (35%) are due to indirect obstetric complications.

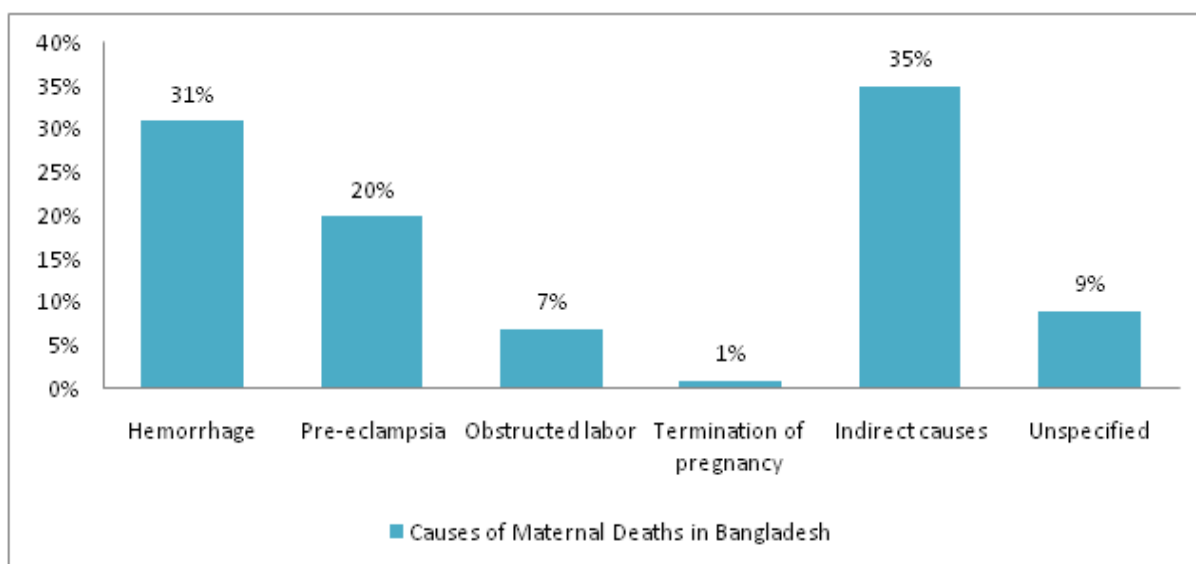


Figure1. Causes of Maternal Deaths in Bangladesh, (MMHS, 2010)

Among the causes of maternal deaths, 31% in Bangladesh occurred due to hemorrhage, 20% due to pre-eclampsia-eclampsia, 7% due to obstructed labor, 1% due to termination of pregnancy, 35% due to indirect maternal deaths and 9% causes are still remaining unidentified (figure 1). So, more study could be done to figure out the indirect causes of maternal deaths in Bangladesh to reduce maternal mortality and also new policies could be adopted for minimizing maternal deaths occurred for hemorrhage.

4. MATERNAL HEALTH CARE SITUATION, BARRIERS AND SCOPES FOR IMPROVEMENTS IN BANGLADESH IN COMPARISON TO OTHER SOUTH ASIAN COUNTRIES

The Peoples Republic of Bangladesh covers an area of 147,570 km² (56,980 mi²). It is the world's eighth most populous country and world's third largest Muslim majority country having a vast population of 162,951,560 (2016), almost 90% of which are Muslim. Bangladesh shared its land borders with India and Myanmar (Barma). The country's maritime territory in the Bay of Bengal is roughly equal to the size of its land area (CIA, 2012). The maternal mortality pattern has been improved during the last decade according to the last survey on maternal mortality and health (BMMS, 2010). The maternal mortality ratio (MMR) has been decreased to 194 per 100,000 live births in 2010 from 322 in 2001. The similar pattern has also been found as expected in maternal mortality rate (MMRate), the rate has been reduced to 170 maternal deaths per 100,000 women of reproductive age in 2010 from 367 in 2001 (BMMS 2001, 25 & BMMS 2010, 33). The percentage change in MMR and MMRate are estimated at about 40% and 57% during the period of 2001-2010. According to World Fact Book (2017) the estimated MMR is 176 per 100,000 live births, which indicates that the target of MMR (143 maternal death per 100,000 live births) has not been yet fulfilled by 2015 though the reduction rate was tremendous during 2001-2010.

4.1. Maternal Mortality Ratio in Bangladesh

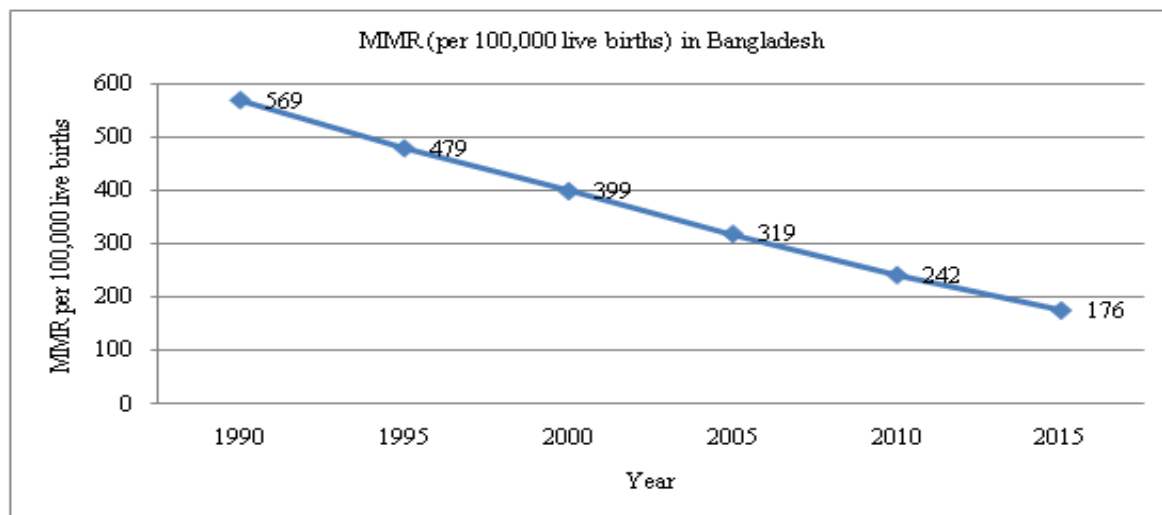


Figure2. MMR in Bangladesh

Source: WHO, UNICEF, UNFPA, World Bank Group and UNPD (MMEIG) - November 2015

It is seen that Bangladesh has shown a great improvement in maternal mortality ratio by reducing maternal mortality to 176 in 2015 from 569 deaths per 100,000 live births in 1990, with an increase of 69% as progress (figure 2).

Table1. Differentials in MMR and MM Rate by background characteristics in Bangladesh

		MM Rate (Per 100,000 women of reproductive age)		MMR (Per 100,000 live births)	
		2001	2010	2001	2010
Residence	Urban	233	143	262	178
	Rural	386	179	326	199
Wealth quintile	Lowest	499	254	343	234
	Second	392	165	302	182
	Middle	527	239	473	278
	Fourth	272	116	268	143
	Highest	177	93	208	123
Mother's age	15-19	228	51	170	49
	20-24	439	209	236	130
	25-29	535	238	358	194
	30-34	499	293	517	402
	35-39	262	286	493	928
	40-44	387	56	1946	561
	45-49	149	42	2436	1798

Source: NIPORT et al, 2001, 2010

MMRate according to women's residence, age and household wealth status. The MMR in rural area reduced at a considerable number from 326 in 2001 to 199 in 2010 compared to urban area where the percentage change has been estimated at about 32% against 39% in rural area. However, the MMR and MMRate in rural area (MMRate: 179 in 2010) are found still higher than those in the urban area (MMR: 178 and MMRate: 143 in 2010) in both 2001 and 2010.

The MMR and MMRate for mother's age group of 30-34 show worse condition than other age groups. Improvement rate for MMR and MMRate for this is 22% and 41%, where the condition of mother's age group 15-19 is better. Both of its MMR and MMRate in 2010 are below 100 and improvement ratio that is the progress between 2001 and 2010 is about 71% and 78%.

From the mothers' age group of 35-39 it is clear that the MMRate and MMR both have increased by 24 and 435 respectively from the year 2001 to 2010 where the maternal mortality ratio has increased nearly twice by that time period and the mothers of this age group definitely requires more concentration to reduce the maternal deaths in Bangladesh.

There is also an impact of wealth status in both MMR and MMRate, so variety has been seen in maternal mortality on the basis of wealth. MMR and MMRate among the women of middle wealth quintile are surprisingly high in both the study year 2001 and 2010 (MMR: 473 per 100,000 live births in 2001 and 278 in 2010; MMRate: 527 per 100,000 women of reproductive age in 2001 and 402 in 2010). The improvement has been observed in MMRate of highest wealth quintile is below 100 and in 2010, the MMR has been decreased 40% than 2001 (208 to 123 per 100,000 maternal deaths). The ratio of improvement in MMR and MMRate of middle wealth quintile is relatively 41% and 55% which indicates to a hope of much improvement. (NIPORT et al, 2001, 2010).

4.2. Maternal Mortality Ratio

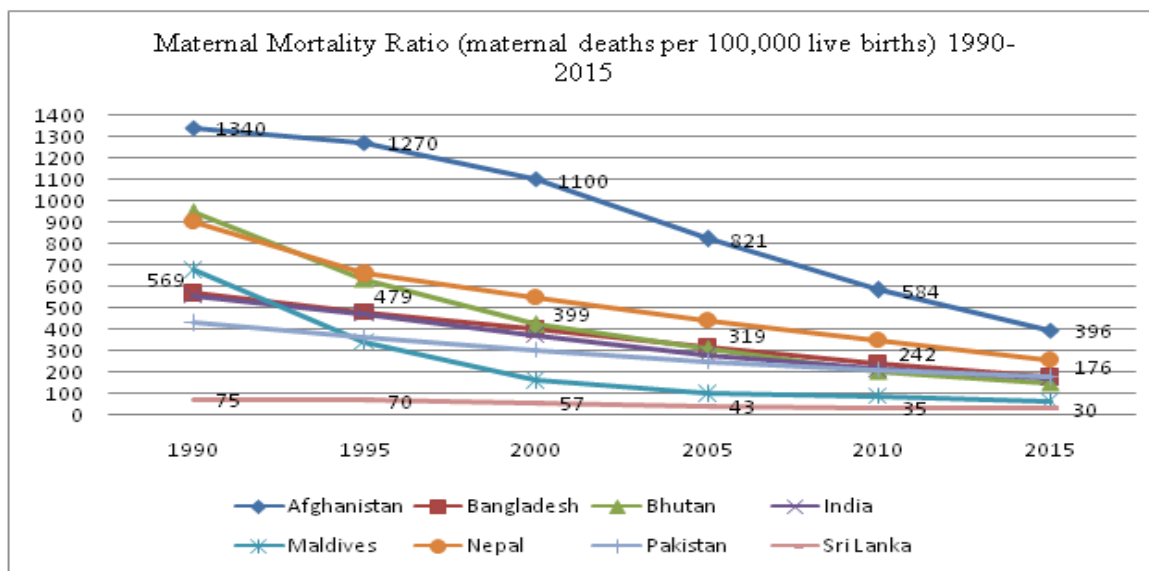


Figure3. Maternal Mortality Ratio in South Asia

Source: WHO, UNICEF, UNFPA, World Bank Group and UNPD (MMEIG) - November 2015

The success in the reduction of MMR at national level among eight South Asian countries can be seen in the figure 3 where in Afghanistan MMR decreased 70% during the 15 years period (MMR: 1340 in 1990 and 396 in 2015) which is still a high rate. The improvement has been observed in Sri Lanka where MMR is significantly below 100 and followed by Maldives. In other countries, the figures have been reduced but not at the expected level. For Bangladesh, over last 25 years MMR has decreased from 569 to 176 which is a very positive sign but still there is a long way to go to achieve success like Sri Lanka.

4.3. Antenatal Care Visit (At Least 1) for Mothers

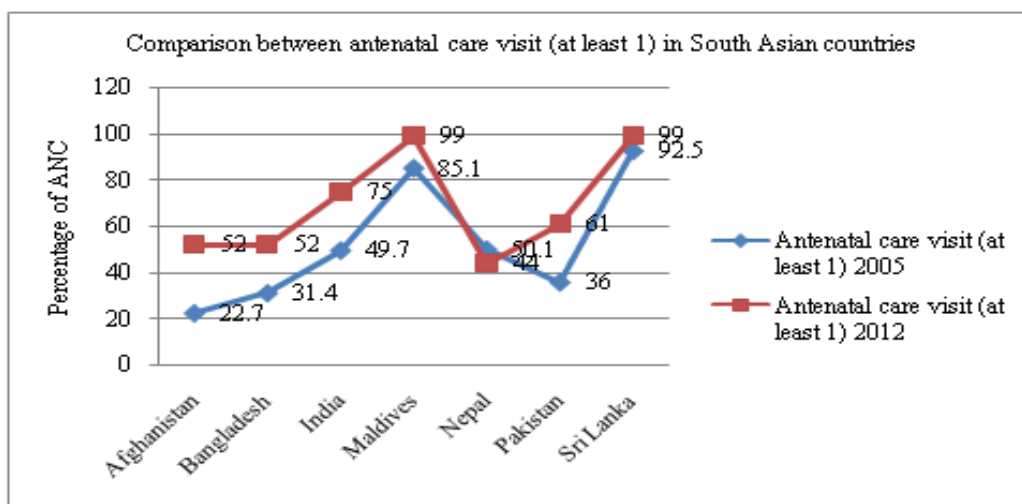


Figure4. Percentage of antenatal care for mothers (at least 1 visit) in South Asian countries

Source: UNICEF-May 2018, * No data available for Bhutan 2012 and so Bhutan is escaped from the graph

The coverage of antenatal care (ANC) at national level of South Asian countries has shown a positive trend (figure 4) during the observed period of 2005-2012. The sharp increase of at least 1 ANC visits reached at 99% in 2012 in Sri Lanka and Maldives from 92.5% and 85.1% in 2005. Again, Afghanistan, Bangladesh, India, and Pakistan has also increased its condition by reaching 52%, 52%, 75% and 61% in 2012 from 22.7%, 31.4%, 49.7% and 36% in 2005, except Nepal. It shows a reduction of ANC (at least 1) visit from 50.1% in 2005 to 44% in 2012. Bhutan was 81.5% in 2005 which was not so bad compared to other countries. The improvements indicate about the proportion of pregnant women received at least 1 time antenatal check-up has increased by 68.86% at regional level, though the current proportion is still very low. So, more studies and field works is needed here to detect the causes of low participation in ANC 1 visits and on the basis of those study findings new policies and steps could be taken to increase the participation of ANC 1 visits by mothers in Bangladesh (52% in 2012) where Sri Lanka (99%) and Maldives (99%) could be the role model for improvement.

At the national level, Bangladesh, the percentage of antenatal care (at least 1) visit has increased 59.38% over last 20 years (26% in 1994; 64% in 2014) and also both urban and rural area shows improvement (figure 5) though rural area is still behind urban area (59% and 79% respectfully in 2014).

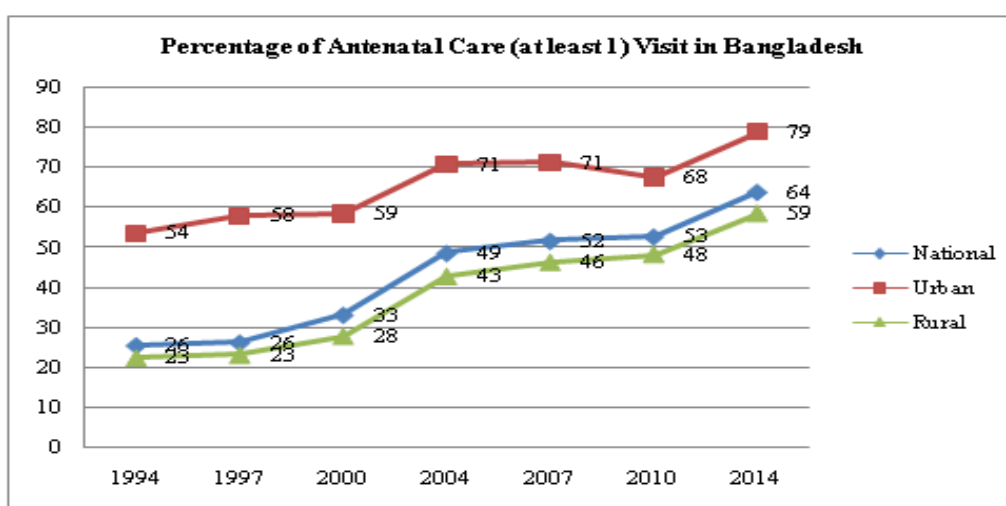


Figure5. Percentage of Antenatal Care (at least 1) Visit in Bangladesh, Source: UNICEF –May 2018

So, more emphasis could be given to improve the percentage of women’s antenatal care (at least 1) visit, specifically in rural areas of Bangladesh.

4.4. Percentage of women’s visit for antenatal care (at least 4)

The coverage of antenatal care (ANC) at national level in Bangladesh has shown a positive trend with a sharp increase of at least 4 ANC visits reached at only 31% in 2014 from very poor condition (only 6%) in 1994 (figure 6). The improvements indicate about the proportion of pregnant women received at least 4 times antenatal check-ups has increased by 81% at national level, though the current proportion is still very low.

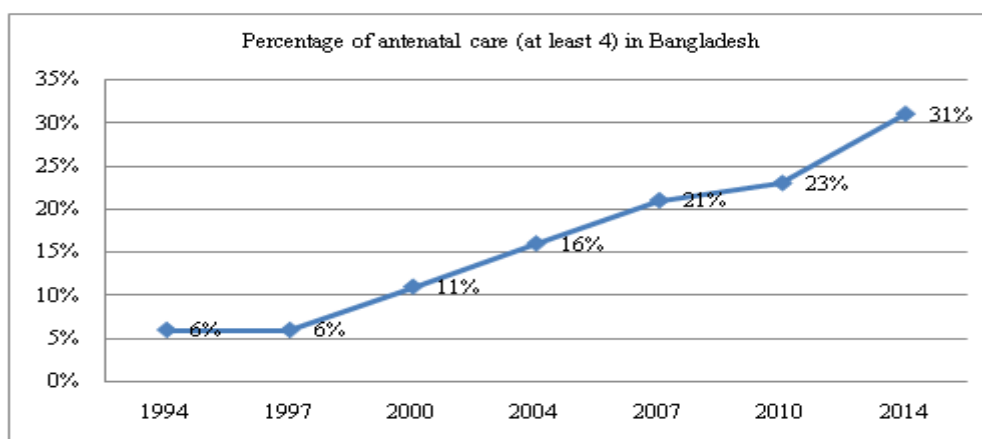


Figure6. Percentage of Antenatal Care Visit for Mothers (at least 4) in Bangladesh, Source: UNICEF-May 2018

Last updated data extracted from UNICEF 2018 shows that, antenatal check-ups for mothers (at least 4) in Afghanistan, Bhutan, India, Maldives, Nepal, Pakistan and Sri Lanka respectively 18% (in 2015), 85% (in 2015), 51% (in 2016), 85% (in 2009), 69% (in 2016), 37% (in 2013) and 93% (in 2007). And this comparison represents that the lower participation in ANC 4 (31% in 2014) visit in Bangladesh might be one of the leading indirect causes of maternal mortality ratio (176 in 2015) of Bangladesh which is found significantly lower in Sri Lanka (MMRatio 30% in 2015) which has ensured 93% ANC 4 in 2007.

The coverage of antenatal care (ANC) at national level has a positive trend during the observed period of 2004-2014 (figure 7). The sharp increase of at least 4 ANC visits reached at only 31% in 2014 from very poor condition (only 16%) in 2004. The improvements indicate about the proportion of pregnant women received at least 4 times antenatal check-ups has increased by 48.39% at national level, though the current proportion is still very low.

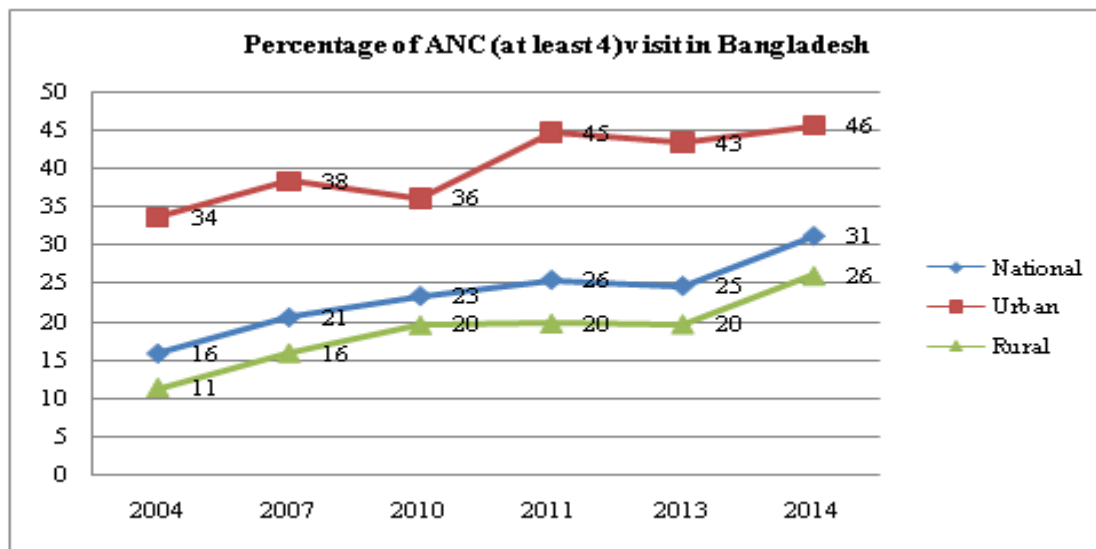


Figure7. Percentage of women’s visit for antenatal care (at least 4) in Bangladesh, Source: UNICEF-May 2018

The improvement in antenatal care of at least 4 antenatal check-ups fulfills the Sustainable Development Goals (SDG 3.1) which has increased up to 50%. The situation in urban and rural area is also not improved as national level. Rural area increased to 26% in 2014 from 11% in 2004 and urban area increased to 46% in 2014 from 34% in 2004. So, more concentration could be given to increase the percentage of women’s visit for antenatal care (at least 4) where both urban and rural areas should take under more care but significantly the rural areas should have more priority.

4.5. Access of Women to the Health Facility Centers for Delivery Services at National Level in Bangladesh

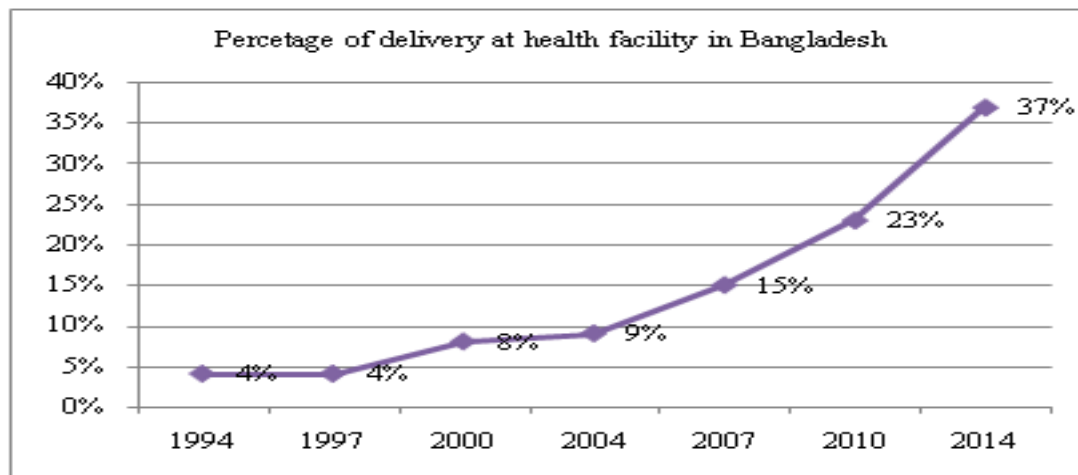


Figure8. Percentage of delivery at health facility at National Level in Bangladesh in 1994-2014, Source: UNICEF-May 2018

At the national level, percentage of facility delivery shows a great improvement (increased by 89%) from 4% in 1994 to 37% in 2014.

Data from UNICEF 2018 shows that, the percentage of delivery at health facility in Afghanistan, Bhutan, India, Maldives, Nepal, Pakistan and Sri Lanka are respectively 48% (in 2015), 74% (in 2012), 79% (in 2016), 95% (in 2009), 57% (in 2016), 48% (in 2013) and 100% (in 2014), among which Sri Lanka reached at highest pick of success followed by Maldives and the other countries are still far away than these two countries. So, again, ensuring delivery at health facility is another concerning area for Bangladesh which is found only 37% in 2014 and is amazingly found 100% in Sri Lanka in the same year.

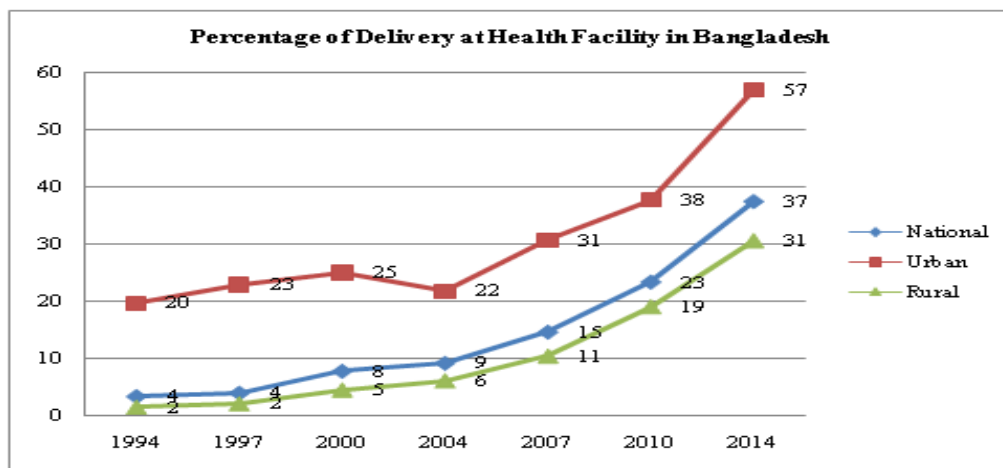


Figure9. Percentage of women received delivery service at health facility, Source: UNICEF-May 2018

At the national level, percentage of facility delivery shows a great improvement (increased proportion is 89%) of 33% from 4% in 1994 to 37% in 2014. The dramatic improvement has been observed mainly after 2004 not only at national but also at division level (figure 9). On the basis of area, urban area has improved its percentage from only 20% in 1994 to 57% in 2014 and rural area improved from only 2% in 1994 to 31% in 2014, with a proportion of increase of 64.9% and 93.5%. But the percentage is still very poor. So, the percentage of delivery at health facility in both national and sub-national levels of Bangladesh should be taken under consideration, especially in the rural areas.

4.6. Presence of Skilled Birth Attendance during Delivery

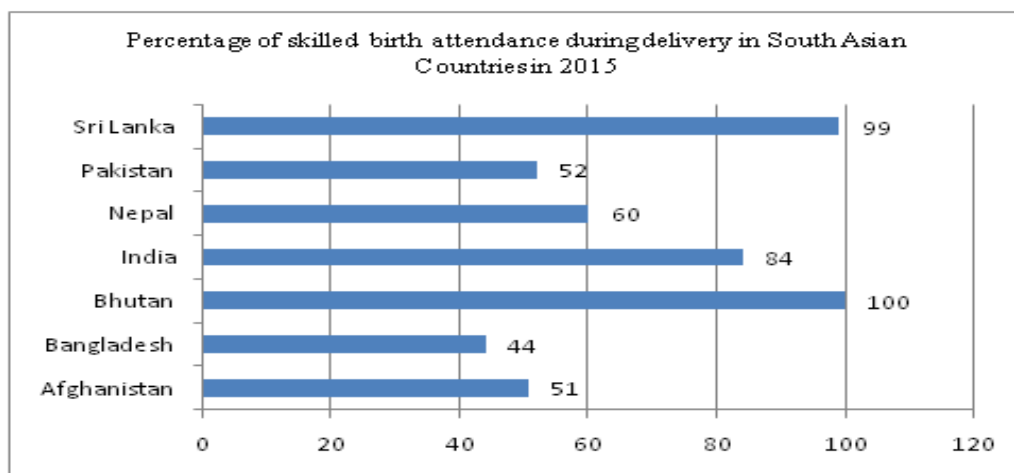


Figure10. Percentage of skilled birth attendance in South Asian countries in 2015, Source: UNICEF-May 2018

From the distribution of skilled birth attendance at national level (figure 10) of eight South Asian countries, it is seen that Bangladesh has the worse situation with 44% where Bhutan has achieved 100% SBA in 2015 and followed by Sri Lanka (99%). It increases the percentage of skilled birth attendance at regional level to 72.37% in 2015. So, the presence of skilled birth attendance during delivery should be taken under serious consideration by the corresponding authority with great care for ensuring safe motherhood in Bangladesh.

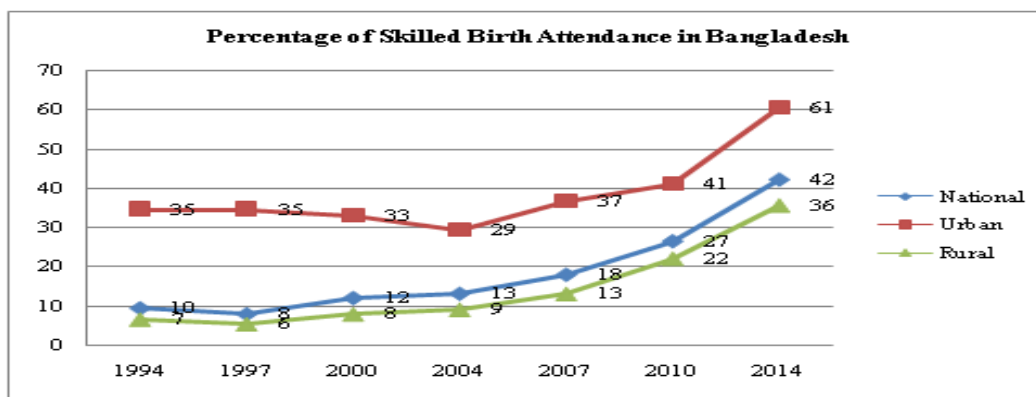


Figure11. Percentage of delivery with the presence skilled health personnel, Source: UNICEF-May

Figure 11 presents the distribution pattern of skilled birth attendance at both national and sub-national levels of Bangladesh over last 20 years (1994-2014). At national level, percentage of skilled birth attendance has improved to 42% in 2014 from 10% in 1994, where the proportion of increase is about 77%. Again, the proportion of change in the percentage of urban area is 42.6% (35% in 1994; 61% in 2014) and rural area is 76% (7% in 1994; 36% in 2014). So, here it is clear that this progress is not satisfactory and this requires more care through training, recruitment and ensuring the presence of skilled attendance during delivery both in the urban areas and more importantly in rural areas to improve the national level outcomes as this factor is directly related with the causes of maternal and neonatal deaths.

4.7. Last update on Postnatal Care for Mothers:

Table2. Postnatal Care for Mothers in South Asia, Source: UNICEF May 2018

Countries	Year	Percentage of Postnatal Care for Mothers
Afghanistan	2015	40%
Bangladesh	2014	36%
Bhutan	2010	41%
India	2016	62%
Nepal	2016	57%
Pakistan	2013	60%

The last update from the UNICEF 2018 presents the percentage (table 2) about the coverage of postnatal care for mothers at national level in six South Asian countries where the achievement for Afghanistan, Bangladesh, Bhutan, India, Nepal and Pakistan are respectively 40% (in 2015), 36% (in 2014), 41% (in 2010), 62% (in 2016), 57% (in 2016) and 60% (2013). Data suggests that these countries are gradually improving their condition in postnatal care for mothers and up to the year 2014, the coverage of Bangladesh is found 36%. And it is clear that the health management authority of Bangladesh also needs to improve the rate of postnatal care coverage to reduce the maternal mortality in the country.

A positive trend is seen in the coverage of postnatal care for women at national levels, Bangladesh (figure 12).

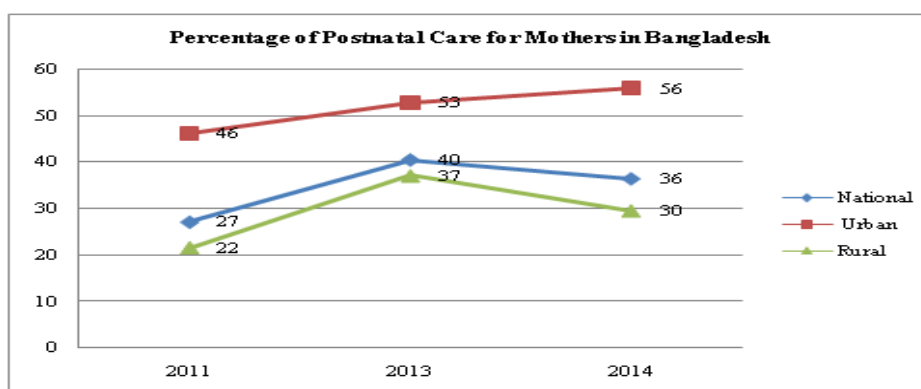


Figure12. Percentage of women who received postnatal care, Source: UNICEF-May 2018

The sharp increase of postnatal care for the national level reached at 36% in 2014 from 27% in 2011 for women. In 2014, it is seen only 30% or rural areas and 56% for urban areas. These statistics suggest about 17.8% and 26.6% improvement in PNC for women's during the period 2011-2014 at urban and rural area.

4.8. The Unmet Need for Family Planning

The unmet need for family planning is another area to take under consideration while we think about maternal health and about reducing maternal mortality. Basically women's who are in the reproductive age group (15- 49 years) and are sexually active would prefer to use FP methods for avoiding unwanted pregnancy but are unable to or not using any method of contraception, are considered to have an "unmet need" for FP (Casterline & Sinding, 2000: 701). This concept highlights towards the existing gaps between reproductive intentions of the women's and their current behaviour regarding the use of contraceptive. This standard formula also include all fecund women who are married, living in union and sexually active, wants spacing (want to postpone their next birth for at least two more years) or limiting (who either do not want to have any more children) the birth of child but are not using any methods of FP. The unmet need group also includes all pregnant married women whose pregnancies are mistimed or unwanted (Islam, Islam & Rahman, 2013:38).

The percentage of unmet need for family planning in Bangladesh is 16.8% which is 12.8% in India and only 7.3% in Sri-Lanka, Nepal 24.6%, Pakistan 24.9%, Bhutan NA (WHO, 2012: 98-104). So, Bangladesh needs to take it down below 10% if the progress is expected like Sri Lanka.

5. CONCLUSION

Research has shown that approximately 80% of maternal deaths could be averted if women had access to essential maternity and basic health care services. The extent of maternal mortality is an indicator of disparity and inequity in access to appropriate healthcare and nutrition services throughout a lifetime, and particularly during pregnancy and childbirth. Maternal deaths not only question our health infrastructure but also point on the social and literacy status of females in any country.

Antenatal care can help women prepare for delivery and understand warning signs during pregnancy and childbirth. It can be a source of micronutrient supplementation, treatment of hypertension to prevent eclampsia, immunization against tetanus, HIV testing, etc.

The geographical position, population and overall conditions of all the South Asian countries are different and so as maternal health. For Bangladesh, a question that what would be the major factor which mostly influencing its maternal health or maternal mortality ratio; this article is simply highlighting some points where most care could be given, take for example antenatal care visits, delivery at facility centers, presence of skilled birth attendance, post natal care for mothers and to fulfill the unmet needs for family planning. Among those ANC 4 visits, delivery at health facility centers and the presence of skilled birth attendance during delivery have found to be more severe and vulnerable in position which might have detrimental effects on maternal health and may be they are indirectly linked with the maternal mortality ratio of Bangladesh. Besides, along with all other factors, rural area mothers should be given more emphasis to improve the overall health situation of Bangladesh at the national level.

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