

## CHAPTER 6

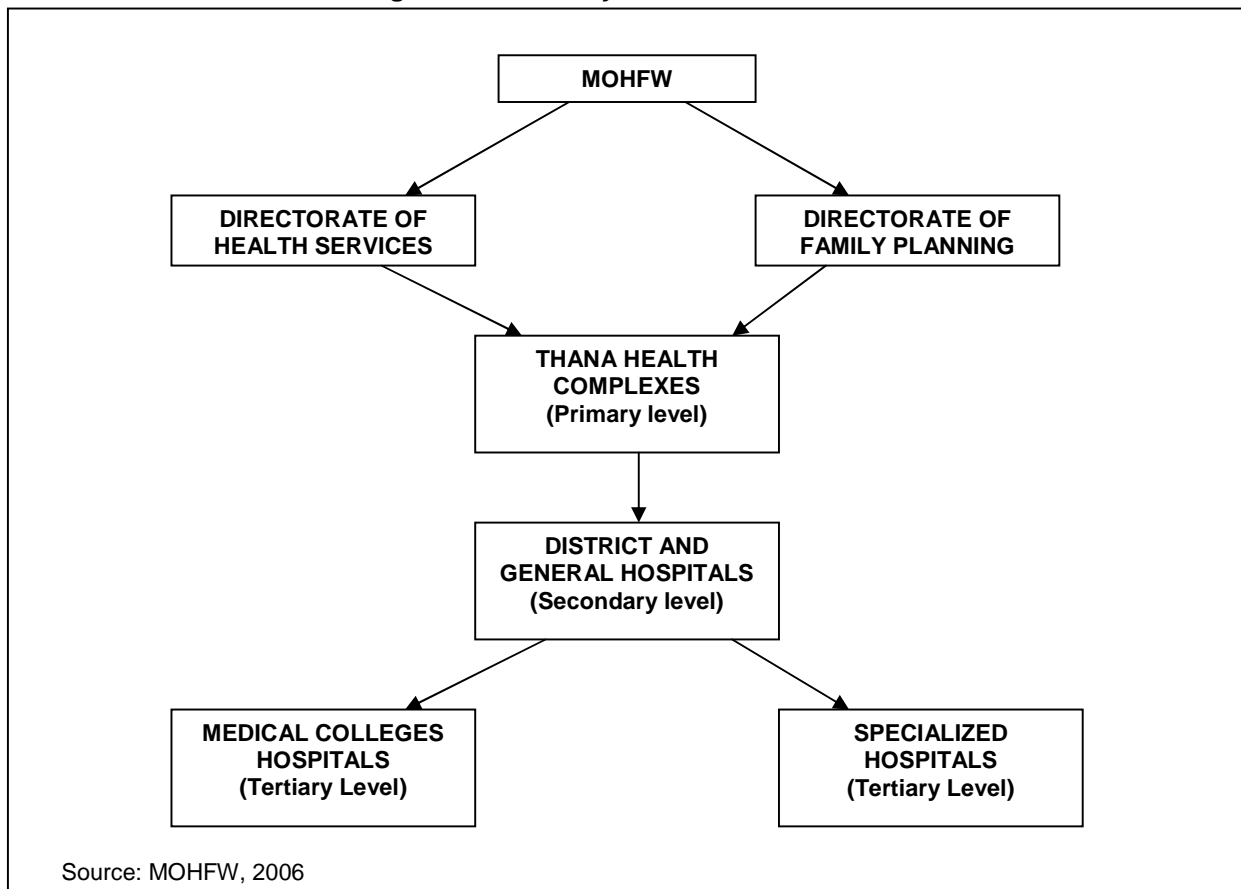
### HEALTH AND NUTRITION

#### A. Health Care System

The government agency in charge of delivering health services is the Ministry of Health and Family Welfare (MOHFW). It is responsible for developing, co-ordinating and implementing the national health and mother-and-child health care programs. It also has the authority over population control and related issues. The government's policy objectives in the health care sector are to provide a minimum level of health care services for all, primarily through the construction of health facilities in rural areas and the training of health care workers. The strategy of universal health care by the year 2000 had become accepted and government efforts toward infrastructure development included widespread construction of rural hospitals, dispensaries and clinics for outpatient care. Program implementation, however, was limited by severe financial constraints, insufficient program management and supervision, personnel shortages, inadequate staff performance and inadequate numbers of buildings, equipment and supplies.<sup>163</sup>

The MOHFW is further divided into two separate directorates for health and family welfare, each of which is headed by a director general, who is responsible to the minister. The Directorate of Health Services, which employs more than 75,000 health personnel, is responsible for curative care and some aspects of public health, such as immunization. On the other hand, the Directorate of Family Planning is responsible for family planning services and some maternal and child health services such as prenatal care (Figure 15).<sup>164</sup>

Figure 15. Hierarchy of Medical Services



## 1. Public Health Providers

Public health care services are delivered through a hierarchy of government hospitals and other facilities, which are categorized into four primary groups<sup>165</sup>:

- *thana* health complexes;
- district and general hospitals
- medical college hospitals; and
- specialized hospitals.

### a. Thana health complexes (THCs)

These facilities exist at the *thana* level and considered as primary-level facilities. They provide basic medical facilities and operations. *Thana* health complexes were established in the 1980's and 400 were equipped with theatres, X-ray, pharmacy, basic laboratories, dental suites and delivery suites, each having a 31-bed ward. These facilities are usually staffed by five doctors, six nurses and 31 other staff members. On average, one facility provides 50,000 outpatient visits, 2,300 inpatient admissions and 200 operations per year. There are about 402 of these facilities in the country. A large proportion includes units that provide maternal and child health services.<sup>166</sup>

Skilled doctors do not desire to work in these postings and they see it as a 'punishment'. As a result, THCs are no longer seen as credible and efficient in providing quality health services. The hesitation of skilled doctors to work in THCs is ascribed to the low pay received in state health facilities. In theory, these facilities should provide an essential package of services (ESP) that consists of reproductive health care, child health care, communicable disease control and limited curative care.<sup>167</sup>

### b. District and General Hospitals<sup>168</sup>

District and general hospitals are secondary-level facilities at the *zila* level. Like THCs, they provide basic medical services; they have more inpatient facilities and staff, and are equipped with more sophisticated basic equipment (e.g. X-ray machines) and perform major surgery. District and general hospitals typically have a bed size of 50 or 100. A 100-bed district hospital is typically staffed by 10 doctors, 26 nurses, and 33 other staff and provides an average of 68,000 outpatient visits, 7,000 inpatient admissions and 1,200 operations per year. There are about 59 district hospitals in the country.

### c. Medical College Hospitals

Medical college hospitals have larger inpatient medical facilities that offer sophisticated and differentiated services than lower-level facilities. Their bed sizes ranges from 540 to 1,100 and each is staffed by 40 to 90 doctors and 140 to 370 nurses.<sup>169</sup>

In addition, these institutions provide the necessary education and training for those who want to be medical professionals. In the mid-1980s, there were ten medical colleges and eight postgraduate specialized medical institutes. A dental college was available along with 21 nursing schools, eight medical assistant training schools and two paramedical institutes. The quality of medical education can be considered satisfactory.<sup>170</sup>

### d. Specialized Hospitals

In the mid-1980s, specialized hospitals were considered in the secondary level of health care. However, the government reformed its system to make services more accessible especially for those at a disadvantaged position. The present scenario of health care in Bangladesh includes facilities that focus on the provision of maternal and child health and family planning services. At the *zila* and *thana* levels, maternal and child welfare centers provide birth spacing methods, prenatal health care to mothers, menstrual regulation services and primary health care to children under age five. There are about 96 of these facilities.<sup>171</sup>

**Box 6. Success Story of the Urban Primary Health Care Project:  
A Reform Agenda At Work – Bangladesh**

While efforts are made to improve provision of health care to rural areas, strangely enough, urban areas in many cities in our Region lack similar health care. In Bangladesh too, while there are several health care providers in both the public and private sectors in urban areas, lack of co-ordination often leads to a duplication of service providers and an overlap of service, creating inefficiency and inequity. One might think that as there are several agencies serving the same area, there would be a degree of competition which would help boost the quality of service and efficiency of management. Unfortunately this is not so.

It was seen that despite a heavy presence of the private sector in the urban areas in Bangladesh the overall achievements in the health sector were unsatisfactory, e.g. the rate of fully immunized children by 12 months of age in urban areas in Bangladesh ranged from 56 percent to 67 percent in the four biggest metropolitan cities. In Dhaka City Corporation slums only 39 percent of the children were fully immunized by their first birthday; the OPV 1 dose administration rate was 91 percent whereas OPV 3 was only 59 percent among these children; which shows that despite accessibility there is a big drop out apparently due to lack of motivation. Vaccination card retention was 54 percent to 64 percent in the four cities. Card retention rate was 41 percent in DCC slums.

To improve the health performance in urban areas of Bangladesh, a pilot project was undertaken. This is based on the premise that reform of the health sector could be based on the pulse of the free market economy – with the conundrum that competition improves quality of product/service and efficiency of management. This project is based on the strategy of a public-private partnership where the public sector plays a regulatory and stewardship role and the actual services are provided by the private sector. The Urban Primary Health Care Project, undertaken by the Ministry of Local Government, Rural Development & Cooperatives, Government of Bangladesh is demonstrating the viability of a public-private partnership particularly to respond to the needs of the poor.

Source: WHO. n.d. "Success Story of the Urban Primary Health Care Project: A Reform Agenda At Work – Bangladesh. Retrieved from [http://www.searo.who.int/LinkFiles/Public\\_Information\\_&\\_Events\\_Vol3-2\\_bangladesh.pdf](http://www.searo.who.int/LinkFiles/Public_Information_&_Events_Vol3-2_bangladesh.pdf) on August 16, 2006.

## **2. Private Sector in the Health System<sup>172</sup>**

The health care services in Bangladesh are not only provided by the government. There is a strong presence and influence of the private sector in the delivery of health services. It was estimated that the average size of private facilities is one-fifth that of public hospitals. Private health providers are more diverse in terms of the services offered, training of the medical staff, their legal organization, and system for medicine prescriptions. A large number of the private health providers are NGOs that offer family planning services.

In 1997, there were 158 private hospitals registered by the MOHFW, wherein 126 were registered and 32 were not registered. In comparison with the government, the number of beds of private medical institutions is lesser. There were also 455 nursing homes owned privately with 5,158 beds. It is the private sector that only provides such services due to the absence of public nursing homes. Furthermore, private medical facilities have an advantage in terms of the number of laboratories (Table 13).

**Table 13. Estimated Number of Government and Private Health Facilities, 1997**

	Government	Private		
		Total	Registered	Unregistered
Hospitals	645	158	126	32
Hospital Beds	29,106	6,213	-	-
Nursing Homes	0	455	314	140
Nursing Home Beds	-	5,158	-	-
Total Inpatient Facilities	645	613	440	172
Laboratories	N.A.	1,042	582	172

Source: PSA 2003 on the basis of BBS, 1998

Tertiary and advanced services are offered by both private and public providers. The private sector is known for their trained medical personnel and specialized equipment. However, a problem that exists in the health care system is the regulation of private health care providers. There is a lack of a comprehensive regulatory framework for registration and control of informal private practice. They often operate out of homes, pharmacies or small unregistered clinics. The inability of the government to monitor the number of private health care providers compounds the situation. Information on private facilities is neither updated nor reliable. Many of the facilities, particularly the unregistered doctor's offices, are difficult to check, monitor and even regulate.

### 3. Health Facilities

The government operates and maintains a large number of health facilities at every administrative level – from the ward to the national headquarters (Table 14).<sup>173</sup> The Medical College hospitals had 6,496 beds. There were 1,362 Union subcenters.

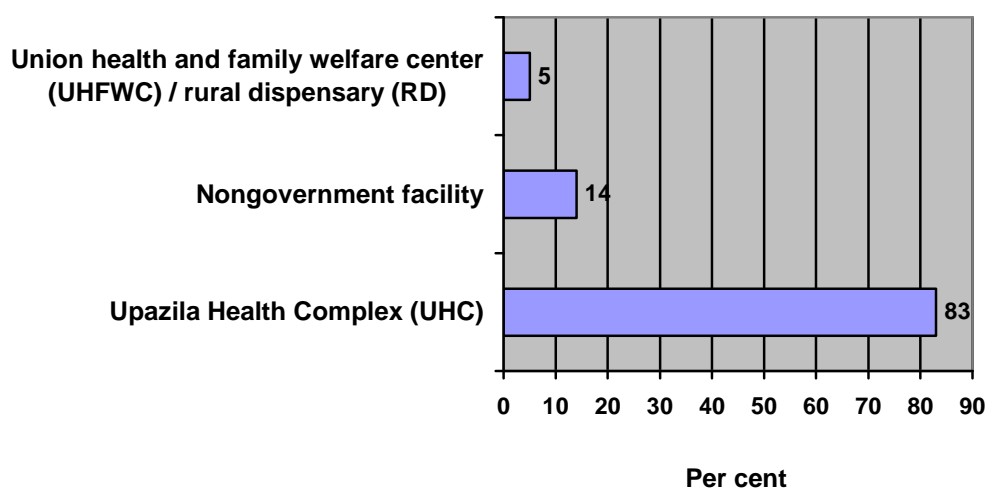
**Table 14. Health Facilities under The Directorate of Health Services, 1997**

<b>Name and Type of Facilities</b>	<b>Number</b>
<b>Thana and Below</b>	
Union Sub-Center	1,362
Rural Health Center	14
Thana Health Complex	397
Health Complex	2
Thana Health and Family Planning Officer	460
<b>District</b>	
Civil Surgeons	64
<b>General Hospital</b>	
Hospitals	65
Beds	5,150
<b>Medical College Hospitals</b>	
Hospitals	11
Beds	6,496
<b>Specialized Hospital</b>	
Post Graduate Institute Hospital	5
Leprosy Hospital	3
Infectious Disease Hospital	5
TB Hospital	4
TB Segregation Hospital	8
Dental Hospital, Dhaka	1
Mental Hospital, Pabna	1
Cancer Hospital, Dhaka	1

Source: MOHFW, 1997

Based on Table 14, there were numerous health facilities in Bangladesh with adequate numbers of beds. However, the 1999-2000 Bangladesh Service Provision Assessment Survey reported that the capacity of health facilities in the country varied widely. More than 80 percent of the *Upazila* Health Complexes (UHCs) offered inpatient care. About 14 percent of NGO health centers and only 5 percent of Union Health and Family Welfare Center/Rural Dispensary (UHFWCs/RD) were prepared to handle inpatient care. In this case, the ability to provide inpatient care was based on the number of beds present in a facility. *Upazila* health centers are considered to be the largest facilities in the *Upazila* and has the most number of beds compared to their NGO counterparts (Figure 15).<sup>174</sup>

Figure 16. Percentage of Facilities with beds for inpatients, 1999-2000



Source: Bangladesh Service Provision Assessment Survey, 1999-2000

In terms of the equipment and supplies available in the facility, the study showed that blood pressure measuring devices and stethoscopes were available in most facilities including UHFWCs and NGO health centers. More than eight in ten facilities had an operational adult weighing scale, while 68 percent had a baby scale. Majority of facilities had supplies of disposable needles. Less than half of them had cold chain equipment.<sup>175</sup> (Table 15)

**Table 15. Availability of General Purpose Equipment and Medical Kits,  
By Type of Facility, 1999-2000**

	Percentage of facilities having working equipment								Percentage of facilities with			Number of facilities
	Blood Pressure Machine	Adult scale	Baby scale	Disposable needles	Stethoscope	Auto-claves	Cold chain	All equipment	Safe delivery kit	MCH kit	Sterilization kit (FP)	
<b>Type of facility</b>												
Upazila health complex (UHC)	97.1	91.9	82.9	93.7	96.9	93.0	95.8	79.5	69.1	62.7	66.0	254
Union health and family welfare center (UHFWC)/rural dispensary (RD)	87.0	70.5	67.6	86.3	93.1	63.2	10.5	4.7	39.3	37.5	10.2	296
NGO health facility	97.1	89.6	55.0	84.9	97.3	75.7	34.5	26.2	27.7	27.0	15.8	262

Source: Bangladesh Service Provision Assessment Survey, 1999-2000

The table presented above showed that, by facility type, the proportion with all the general-purpose equipment ranged from 5 percent in UHFWCs/RDs to 80 percent in UHCs. About one-quarter of NGO facilities had all of the equipment. Meanwhile, four in ten facilities had safe delivery and MCH kits, while less than one-third had kits for performing sterilization. As expected, at least six in ten UHCs had all three of these kits available.<sup>176</sup>

The availability of medical personnel was also sought in the survey. Almost all (97%) UHCs had at least one doctor, and about eight in ten NGO health centers had a doctor providing MCH services. The UHCs were more likely to have a medical assistant and nurse than were UHFWCs and NGO health centers. Nurses or paramedics were available at more NGO facilities than were medical assistants. Overall, only one-third of the facilities had a pharmacist on duty. However, more than seven in ten UHCs had a pharmacist on duty. (Table 16).<sup>177</sup>

**Table 16. Staffing Patterns by Type of Facility, 1999-2000**

	Percentage of facilities with at least one				Median number of medical staff	Number of facilities
	Doctor	Medical assistant	Nurse/FWV/paramedic	Pharmacist		
<b>Type of facility</b>						
Upazila health complex (UHC)	97.0	76.6	84.9	73.1	18	254
Union health and family welfare center (UHFWC)/rural dispensary (RD)	20.9	68.5	82.0	28.7	2	296
NGO health facility	77.9	12.2	81.6	3.1	3	262

Source: Bangladesh Service Provision Assessment Survey, 1999-2000

#### 4. Health Financing<sup>178</sup>

The total expenditure for health in Bangladesh represented approximately 3.2 percent of the GDP or USD12 per capita in year 2003. Financing for health care came mainly from three sources: government budget, donor contributions and household out-of-pocket payments. According to the National Health Accounts, public health expenditure represented roughly 44 percent of total health expenditure, which was 8.7 percent of the total government budget. Donor contributions represented about 13 percent, while the remaining 64 percent were financed with household out-of-pocket payments (Table 17).

**Table 17. Selected Indicators of Health Financing, 2003**

<b>Indicator</b>	<b>Value</b>
Total expenditure on health as percent of GDP	3.2
Total per capita spending in average exchange rate	US\$ 12
Public health spending as percent of total	44.2
Public health spending as percent of total government budget	8.7
External resources as percent of total of public health expenditure	13.3
Private health spending as percent of total	55.8
Out-of-pocket expenses as percent of total private spending.	93.2

Source: NHA, 2003; WHO, 2001

Private health care providers obtained their financing almost exclusively from user fees. On the other hand, NGOs received their funds from a mix of sources, including the government (12%), donor agencies (78%) and NGOs' own sources. (10%)

## B. Health Status

Since gaining independence, health and education have improved remarkably and poverty declined but there is still limited access to health services, sanitation and safe water. With nearly half of the population living below the poverty line, Bangladesh has the highest incidence of poverty in South Asia and the third highest number of poor people living in a single country after India and China. It is unable to achieve sustainable development without continued efforts to curb population growth.<sup>179</sup> (Table 18)

**Table 18. General Health Indicators, Selected Years**

Indicators	Data	Year
Crude Birth Rate (per 1,000 population)	27	2004
Crude Death Rate (per 1,000 population)	8	2004
Life Expectancy At Birth (years)	63	2004
Infant Mortality Rate (per 1,000 live births)	65	2004
Under-five Mortality Rate (per 1,000 live births)	88	2004
Maternal Mortality Ratio (per 100,000 live births)	382	2001
Adolescent Fertility Rate (births per 1,000 women aged 15-19 years)	3	2004
Total Fertility Rate	3.3	2004
<b>Immunization Coverage for infants (%)</b>		
BCG	95	2004
DPT3	85	2004
Polio 3	85	2004
Measles	77	2004
<b>MCH Coverage (pregnancies, deliveries, infant care) (%)</b>		
Births attended by skilled health staff	13	2004
Pregnant women attended by trained personnel during pregnancy (first ANC visit)	49	2004
Pregnant women immunized with tetanus toxoid (two or more shots)	64	2004
Contraceptive Prevalence Rate (modern methods)	53.8	2000
Physician per 10,000 population	2.29	2000
<b>Child Health (%)</b>		
Children with symptoms of Acute Respiratory Infection (ARI)	21	2004
Children with symptoms of ARI and fever (sought treatment from a health facility or provider)	20	2004

Source: BDHS, 2004; UNICEF, 2006 [http://www.unicef.org/infobycountry/bangladesh\\_bangladesh\\_statistics.html](http://www.unicef.org/infobycountry/bangladesh_bangladesh_statistics.html)

Mortality and morbidity rates for women and children are quite high. Amidst improvements in the health service system, the maternal status of Bangladeshi women remains poor. Based on the 2004 BDHS, the country suffers from 382 maternal deaths per 100,000 live births. (Table 18) This is directly related to the high infant mortality rate. The estimated lifetime risk of dying from pregnancy and childbirth-related causes is around 100 times higher than in developed countries. A consequence of maternal deaths is that about 75 percent of the babies born to these women also die within the first week of their lives.<sup>180</sup>

The major causes of maternal deaths are postpartum haemorrhage, eclampsia and complications of unsafe abortion, obstructed labor, postpartum sepsis and violence and injuries. According to a study on the safe motherhood program in Bangladesh, women's low status in society, quality of maternity care services, lack of trained providers, and low uptake of services by women as well as infrastructure and administrative difficulties – all contribute to the high rates of maternal deaths.<sup>181</sup>

Life expectancy in Bangladesh has increased through the years as a result of the improvements in its health care system. In the past, it was evident that the life expectancy for both sexes increased from 56.1 years in 1991 to 60.8 years in 1998, male life expectancy being 60.7 years and female life expectancy 60.5 years. The 2004 BDHS statistics showed that it has further increased to 63 due to improvements in the health care system and change in the lifestyle of the people. An important factor considered in improving the life expectancy rate is the decline in infant and child mortality as a result of an efficient immunization program and disease control programs. The gap between sexes is narrowing in the rural and urban areas.<sup>182</sup>

The crude death rate (CDR) has declined. Between 1991 and 1998, the CDR declined from 11.2 to 4.8 per 1000 population. The rate is on a downward trend. The infant mortality rate (IMR) declined from 92 in 1991 to 57 in 1998 and 2004 data showed that there has been an increase to 65. Though some of the indicators have declined in the past, they are still high compared to other developing countries. There has been a fluctuation in the rates due to lack of resources and implementation.<sup>183</sup>

The causes of morbidity are difficult to determine due to insufficient data and information. However, it was pointed out that the main causes of deaths in the country are infectious, parasitic and vector-borne diseases<sup>184</sup>. Maternal deaths occur as a consequence of complications in pregnancy or childbirth. These complications may be experienced during pregnancy or delivery itself or may occur up to 42 days following childbirth.<sup>185</sup>

## **C. Nutrition**

The prevalence of malnutrition in Bangladesh is among the highest in the world. Millions of children and women suffer from one or more forms of malnutrition, including: low birth weight (LBW), stunting, underweight, vitamin A deficiency, iodine deficiency disorders and anaemia. Malnutrition passes from one generation to another because malnourished mothers give birth to infants who struggle to thrive or grow well. This problem contributes to about one half of all child deaths, often by weakening immunity. Survivors are left vulnerable to illness, stunted growth and mental impairment.<sup>186</sup>

The 2004 BDHS assessed the extent of malnutrition in the country. The report acknowledged that numerous sociological and cultural factors influence patterns of feeding and nutritional status. The government initiated a program that requires the children to start receiving Vitamin A supplements by the age 9-11 months. This is given simultaneously with the measles vaccination while those age 12-59 months receive vitamin A supplementation once every six months.<sup>187</sup>

### **1. Children's Nutritional Status<sup>188</sup>**

Results indicated that 82 percent of the children received vitamin A supplementation in the six months before the survey. Children living in Sylhet were not only least likely to consume fruits and vegetables rich in vitamin A (60%), they did not receive Vitamin A supplements (73%). Similarly, children in Barisal were most likely to receive vitamin A supplementation (74%). A dichotomy was noted between children living in wealthy households and those living in the poorest households. Eighty-eight percent of those in the upper classes of society were more likely to receive vitamin supplements compared to the 77 percent from the poorest households. (Table 19)

**Table 19. Percentage of Children Under Age Three Living with the Mother who Consumed Fruits and Vegetables Rich in Vitamin A, By Background Characteristics, 2004**

Background Characteristics	Consumed fruits and vegetables rich in vitamin A	Number of children under three years	Consumed fruits and vegetables rich in vitamin A	Number of children under age 9-59 months
<b>Division</b>				
Barisal	65.5	218	73.7	319
Chittagong	66.8	788	83.8	1,185
Dhaka	69.7	1,102	83.9	1,682
Khulna	66.2	406	83.5	581
Rajshahi	74.2	796	81.5	1,251
Sylhet	60.0	288	72.9	461
<b>Wealth Index</b>				
Lowest	68.5	883	77.2	1,410
Second	68.5	724	82.1	1,149
Middle	67.3	732	81.2	1,045
Fourth	67.4	645	83.2	979
Highest	71.5	614	87.6	895

Source: BDHS, 2004

**a. Stunting<sup>189</sup>**

Height-for-age is an important indicator of linear growth. A child who is below  $-2$  Standard Deviation (SD) from the median of the population in terms of height-for-age is considered short for his or her age or “stunted”, a condition reflecting chronic malnutrition. If the child is below  $-3$  SD from the reference median, then the child is considered to be severely stunted. A child between  $-2$  SD and  $-3$  SD is classified as moderately stunted.

In 2004, 43 percent of children under five were stunted while 17 percent were severely stunted. The survey noted that stunting increased with age from 10 percent of children under six months to 51 percent of children age 12-23 months, and after dropping at age 24-35 months, it again rose to the highest level among four year old children (Table 20).

**Table 20. Percentage of Children Under Five Years Classified as Stunted, By Background Characteristics, 2004**

Background Characteristic	Height-for-age	
	Percentage below -3 SD	Percentage below -2 SD
<b>Child's Age</b>		
<6 months	1.5	10.4
6-9 months	6.5	23.5
10-11 months	5.0	28.3
12-23 months	20.4	50.9
24-35 months	16.0	44.7
36-47 months	21.0	49.2
48-59 months	22.5	51.2
<b>Residence</b>		
Urban	13.6	37.6
Rural	17.7	44.3
<b>Division</b>		
Barisal	20.2	48.9
Chittagong	19.4	46.2
Dhaka	18.5	44.7
Khulna	8.6	31.7
Rajshahi	14.5	40.3
Sylhet	20.1	46.2

Source: BDHS, 2004

Table 20 shows that children living in urban areas were less likely to be stunted than those in rural areas (38% and 44% respectively). At the divisional level, Barisal (49%) had the highest proportion of stunted children while Khulna had the lowest (32%).

## b. Wasting<sup>190</sup>

A child below  $-2$  SD from the reference median for weight-for-height is considered to be too thin for his or her height. In other words, the child is wasted and his or her condition reflects acute malnutrition. Wasting represents the failure to receive adequate nutrition as a result of insufficient food intake or recent episode of illness causing loss of weight and the onset of malnutrition.

In Bangladesh, 13 percent of the children were wasted and the proportion of the severely wasted is one percent. Wasting was at its peak at age 12-23 months (24%) and lowest in children under six months of age (3%). Looking at the divisional level, the children in Barisal were most likely to be stunted but they were least likely to be wasted (Table 21).

**Table 21. Percentage of Children Under Five Classified as Wasted, By Background Characteristics, 2004**

Background Characteristic	Weight-for-height	
	Percentage Below $-3$ SD	Percentage Below $-2$ SD
<b>Child's Age</b>		
<6 months	0.6	3.1
6-9 months	1.3	8.3
10-11 months	1.3	12.9
12-23 months	2.8	24.0
24-35 months	1.9	13.4
36-47 months	0.4	10.6
48-59 months	0.4	10.0
<b>Division</b>		
Barisal	0.4	7.2
Chittagong	1.5	14.1
Dhaka	1.1	11.7
Khulna	1.9	14.2
Rajshahi	1.3	14.2
Sylhet	1.0	12.2

Source: BDHS, 2004

**c. Underweight<sup>191</sup>**

A child can be classified as underweight due to stunting, wasting or both. Children whose weight-for-age is below –2 SD from the median of the reference population are categorized as underweight and those who fall below –3 SD are severely underweight.

**Table 22. Percentage of children under five classified as underweight, By Background Characteristics, 2004**

Background Characteristic	Weight-for-age	
	Percentage Below –3 SD	Percentage Below –2 SD
<b>Child's Age</b>		
<6 months	0.9	8.3
6-9 months	7.1	29.4
10-11 months	13.3	42.9
12-23 months	17.8	58.5
24-35 months	16.8	54.6
36-47 months	13.4	51.1
48-59 months	10.8	51.1
<b>Residence</b>		
Urban	12.0	42.2
Rural	13.0	48.8
<b>Division</b>		
Barisal	12.4	46.3
Chittagong	16.2	49.9
Dhaka	12.6	47.6
Khulna	8.3	40.3
Rajshahi	12.0	48.1
Sylhet	13.1	49.8

Source: BDHS, 2004

The data on Table 22 revealed that 49 percent of children in rural areas were underweight while 13 percent were severely underweight. Compared to those in the urban areas, the proportion of children underweight was higher by 7 percentage points. At the division level, the highest prevalence of underweight was in Chittagong (50%) and Sylhet (50%). Meanwhile, the lowest proportion of underweight children was in Khulna (40%). The highest number of severely underweight children was also observed in Chittagong.

## 2. Women's Nutritional Status<sup>192</sup>

The survey data also showed that 15 percent of the women in their postpartum period received a dose of vitamin A. However, this proportion varied with residence, division and educational attainment. Women in the urban areas (21%) were more likely to receive vitamin A supplements than those in rural areas (13%). At the divisional level, the percentage of women who reported receiving the postpartum vitamin A dose was highest in Sylhet and Chittagong. (22% and 21% respectively) and was fairly high in Barisal (17%). Only 11 to 12 percent of women in the other three divisions received vitamin A in the postpartum period. (Table 23)

**Table 23. Percentage of Women who Received vitamin A Supplement in the First Two Months After Delivery, By Background Characteristics, 2004**

Background Characteristic	Received vitamin A dose postpartum	Night blindness		Number of women
		Reported	Adjusted	
<b>Residence</b>				
Urban	20.9	4.2	1.8	1,123
Rural	12.9	7.1	3.5	4,293
<b>Division</b>				
Barisal	17.2	8.5	3.7	333
Chittagong	20.5	5.1	1.7	1,115
Dhaka	12.0	5.5	2.7	1,677
Khulna	10.9	7.1	4.1	607
Rajshahi	11.5	6.7	2.8	1,285
Sylhet	21.6	11.2	7.5	400
<b>Education</b>				
No education	10.2	9.9	4.6	1,998
Primary incomplete	11.5	6.6	2.9	1,138
Primary complete	15.1	4.7	2.6	504
Secondary incomplete	18.2	3.5	2.1	1,371
Secondary complete or higher	31.4	1.1	0.3	406

Source: BDHS, 2004

Education plays an important role in influencing the decision or pattern of vitamin A supplement intake. The higher the education, the more likely the woman will take vitamin A supplements. In addition, it also affects the ability of the women to report vitamin A deficiencies such as night blindness.

The survey collected data on the height and weight of ever-married women aged 10-49 years. A woman's height is significant in determining the risk of having difficulty in pregnancy. The risk of giving birth to low-weight babies is higher among women of small stature. The cut-off point at which mothers can be considered at risk because of short stature was normally taken to be between 140 and 150 centimeters. On the other hand, the BMI determines her thinness or obesity. A cut-off point of 18.5 was used to define thinness or acute undernutrition while a BMI of 25 or above usually indicates overweight or obesity, and 30 or above indicates obesity.

Table 24 presents nutritional indicators for women by various background characteristics. At the national level, the mean height for women was 150.5 centimetres, with 16 percent of women falling below the cut-off of 145 centimeters. Urban women and those from Barisal and Khulna divisions were less likely to be short than other women. Education and wealth showed a negative relationship to women being short. For example, 20 percent of the poorest women and 19 percent of uneducated women were below 145 centimetres, compared with only 11 percent of women in the wealthiest households and six percent of women who have completed secondary or higher education.

**Table 24. Nutritional Status of Women, By Background Characteristics, 2004**

Background Characteristic	Height			BMI		
	Mean Height in cm	Percentage below 145 cm	Number of women	Mean BMI	18.5-24.9 (normal)	≥ 25.0 (overweight or obese)
<b>Age</b>						
10-14	149.1	17.2	148	19.0	60.2	0.0
15-19	150.4	15.8	1,573	19.2	58.6	1.8
20-24	150.4	16.1	2,187	19.8	58.2	5.7
25-29	150.9	13.9	1,999	20.3	60.6	8.5
30-34	150.4	16.4	1,771	20.5	57.4	11.2
35-39	150.7	14.1	1,443	20.7	56.5	13.3
40-44	150.3	16.6	1,144	20.5	52.8	12.8
45-49	150.0	17.5	1,051	20.1	48.6	11.3
<b>Residence</b>						
Urban	150.7	13.4	2,552	21.5	55.4	19.5
Rural	150.4	16.3	8,765	19.8	57.2	5.8
<b>Division</b>						
Barisal	150.6	13.0	711	19.9	55.2	7.0
Chittagong	150.4	15.2	2,007	20.2	57.3	9.7
Dhaka	150.3	16.3	3,536	20.4	54.8	11.3
Khulna	151.1	12.9	1,391	20.5	60.6	10.3
Rajshahi	150.5	16.9	2,969	19.9	60.1	5.7
Sylhet	150.3	16.6	704	19.3	45.3	7.1
<b>Education</b>						
No Education	149.9	18.7	4,645	19.5	55.2	4.8
Primary Incomplete	150.2	17.0	2,321	19.9	56.6	7.2
Primary Complete	150.6	13.6	1,002	20.4	58.6	9.7
Secondary Incomplete	151.1	12.6	2,530	20.8	59.7	12.4
Secondary Complete or Higher	152.5	6.3	818	22.4	55.9	26.8
<b>Wealth Index</b>						
Lowest	149.7	20.3	2,244	18.9	50.8	2.1
Second	150.4	16.5	2,255	19.3	56.6	2.9
Middle	150.3	15.8	2,251	19.7	59.4	5.0
Fourth	150.6	14.5	2,293	20.4	59.2	9.5
Highest	151.3	11.2	2,274	22.3	58.0	24.8

Source: BDHS, 2004

The mean BMI for women aged 10-49 years was 20.2. Only 57 percent were normal or had a BMI between 18.5 and 24.9. Nine percent were overweight or obese (BMI ≥ 25). Thus, 34 percent of women were thin (BMI ≤ 18.5). Analysis by background characteristics showed that although the proportion of women with a normal BMI was almost the same in urban and rural areas, women in the normal range of BMI differed dramatically by residence. The proportion considered thin in rural areas was 37 percent – 50 percent higher than in urban areas (25%).

On the other hand, urban women were more than three times likely to be overweight or obese compared to rural women. Among divisions, Sylhet had the highest proportion of women who were thin (48%) and Khulna had the least (29%). Differentials by education and wealth index for BMI were similar to differentials in these variables for women's height. The proportion of overweight or obese women was low among women under 30 years and varied little among older women (11 to 13%). Overweight and obese women were more likely to be in urban areas, among those highly educated, and among those in the highest quintile of the wealth index.

### 3. Adolescents' Nutritional Status<sup>193</sup>

A large number of adolescent girls suffer from malnutrition. Moreover, the prevalence of malnutrition was found to be markedly higher among female children compared with the males. Short maternal height has been found to account for a sizable number of low birthweight babies (2.5 kilograms) who were subsequently more susceptible to infections and death in infancy. Those who survived grew up as undernourished adults, giving rise to an intergenerational cycle of undernourishment. Additionally, small pelvic size may cause obstructed labor due to cephalo-pelvic disproportion. The consequences for women range from ill health (from chronic morbidity due to infections of the reproductive system and conditions such as vesico-vaginal fistulae) to death during and after child birth.

Over one-half of adolescent girls were stunted and more than one-third of adolescent girls in rural areas were wasted. Adolescent girls suffered from iron, iodine and vitamin A deficiencies. Forty-three percent of adolescent girls suffered from iron-deficiency anemia.

Knowledge of nutrition among adolescents was poor and they were generally unaware of the need to eat sufficient quantities of foods such as fish, meat, eggs, milk, vegetables and fruits during pregnancy and lactation. One study in Bangladesh evaluated adolescents' understanding about food required for pregnant and lactating mothers: 40 percent mentioned fish, 27.5 percent mentioned meat, 38 percent mentioned eggs and 34.7 percent mentioned milk. Similar proportions of adolescents mentioned food requirements like meat, fish, eggs and milk for themselves.

The study also asked the mothers of adolescents their opinions on whether adolescent girls or boys need to increase their food intake. Nearly half, 43.1 percent, indicated that boys require more food than girls, 19.4 percent answered that female adolescents need more food and 37 percent mentioned that the requirement was the same for male and female adolescents. Perceived reasons for boys needing more food included their greater physical activity/manual labor (52.5%); their being earning members of the family (32.1%); the need for good health/strength (6.2%); and the need for them to develop good brains/studies (3.4%).

The reasons for giving more food to girls included the fact that they will go to their husband's house and will stay with their own parents for less time (50%); the wear and tear on the body due to pregnancy, childbirth and blood loss during menstruation (2.3%); more physical activity/housework (8.2%); the need for good health/nutrition (8.2%) and having more health problems than men (4.1%).

The findings of the Bangladesh National Nutrition Survey of 1998 revealed high levels of both stunting and wasting among adolescent girls. Over one-half of girls ages 10-12 years (54%) and 13-17 years (56%) were found to be stunted, with generally higher rates in rural compared with urban areas. A slightly lower percentage of adolescent boys were stunted; 47 and 50 percent for the two age groups, respectively.

The 1998 survey showed comparative data on energy intake of male and female adolescents. Girls consumed fewer calories than boys. They consumed eight percent fewer at ages 10-12 years, 18 percent fewer at ages 13-17 years. In the 10-12 year-old age group there was a shortage among both boys and girls. Deficiencies in calorie intake were greater among urban compared with rural girls. An anemia survey conducted by Helen Keller International (HKI), Bangladesh in rural areas reported that 43 percent of the 200 adolescent girls aged 11-16 years were anaemic.

An indication of the prevalence of iodine deficiency disorders (IDD) among male and female adolescents was obtained from a cross-sectional survey in Upazilla of Bangladesh. The survey reported that 3 percent of adolescents had a visible goiter (i.e., an enlarged thyroid). A visible goiter was nearly twice as common among adolescent girls compared with adolescent boys.

A study of approximately 1,000 male and female adolescents in a rural area of Bangladesh found that 1.6 percent were suffering from night blindness and 2.1 percent had physical signs of vitamin A deficiency. A sub-sample of 189 adolescent girls from a large-scale vitamin A survey reported that sub-clinical vitamin A deficiency was found among 12 percent of the adolescent girls ages 12-16 years.

#### **D. Traditional Healing/Medicine**

The traditional form of healing or medicine is Ayurvedic and Unani. Since the country has been influenced by the Hindu religion and culture, these are used by those in the rural areas and those who do not have access to modern medical services. Both use material and non-material components. The former includes animal organs, minerals and other natural substances while the latter constitutes religious and spiritual medicines such as charms, magic, incantations, religious verses and ritual like sacrifices.<sup>194</sup>

Ayurvedic and unani medicine uses elements from plant materials in the form of powder, semi-solid preparations, decoctions and distillates. They also apply inorganic chemical substances, minerals and animal products. Both medical systems are still prevalent in the country and they play a significant role in the primary health care level. Seventy to seventy-five percent of the people in the country continue to patronize traditional medicine for the management of their health problems.<sup>195</sup>

#### **E. Adolescent Lifestyle**

##### **1. Smoking**

Smoking is one of the unhealthy lifestyles practiced by adolescents. A report by the World Health Organization indicated that the smoking prevalence for males was 48.3 percent and 20.9 percent for females. It was noted that youths (age 10-14 years) had a smoking prevalence of 1.6 percent.<sup>196</sup> Despite efforts by the government to curb smoking and tobacco usage in its population, it still has a long way to go to restrict the habit and promote good health. Adolescents are considered to be vulnerable to the fancy advertisements on roadside billboards and swanky magazines showing celebrities holding cigarettes.<sup>197</sup>

A study conducted in 2005 showed that smoking is one of the leading causes of death. The researchers asserted that the killer diseases prevalent in society can be prevented through appropriate lifestyle. Key findings indicated that smoking prevalence is higher in men than women. Although men tend to smoke more they have a smoking prevalence of 42 percent. This figure is alarming due to its gradual increase over the years. In addition, nine percent of those aged 30 years and above suffered from eight tobacco-related diseases such as ischemic heart disease, lung cancer, stroke, oral cancer, cancer larynx, chronic obstructive pulmonary disease, pulmonary tuberculosis and Buerger's disease. It was estimated that these diseases comprised nine percent of all deaths in the country.<sup>198</sup>

By the age of 30 years, most of the smokers in the country had tobacco-related diseases. One can conclude that they could have started smoking at an early age. Another study conducted in 2001 revealed that male smokers had the tendency to pick up the habit in their late teenage years. On the other hand, females deferred it until their early twenties. This indicates that adolescents are at risk in adapting this kind of lifestyle.<sup>199</sup>

## 2. Alcohol Consumption

In Bangladesh, the consumption of alcohol is strictly prohibited both as a social function and as a religious rite. Yet, the problem of alcoholism is a threat. Information obtained from law enforcement authorities, treatment providers and other sources indicated that problems of alcohol abuse have become common. Although it is more serious in urban areas, there are indications that it is emerging at an increasing rate in rural areas. Local alcoholic beverages called *cholai* and *tari* are consumed by lower socio-economic classes, while workers drink another distilled beverage called *Bangla Mad*.<sup>200</sup>

Alcohol consumption is one of the risk behaviors that adolescents engage in. Drinking alcohol and liquor products is becoming prevalent. Drinking patterns increased over time and the change was significant among the boys. The mean age at which the boys started drinking alcohol was 16 years.<sup>201</sup>

An NGO in Dhaka found that 13.7 percent of males and 3.1 percent were alcoholics. At least 90 Bangladeshis died in 1998 after consuming illegal homemade alcohol. Adolescents tends to follow their parents, relatives and friends who drink alcohol. Proper regulation and effective policies to curb and prevent adolescents from abusing alcohol are needed.<sup>202</sup>

## 3. Substance Abuse<sup>203</sup>

Drugs and illegal substances were available in Bangladesh in the post-war era. The number of drug addicts was estimated to be two million located mainly in the city of Dhaka. A concern of the experts is its spread among adolescents. Since adolescence is the stage in life where one is interested in exploring and trying new things, adolescents are vulnerable to drug experimental that can result in their untimely death, STIs, needle-borne infections, and accidental injuries. The main reasons for taking drugs are: high socio-economic status, lack of academic achievement, disenfranchisement from mainstream activities, 'boredom', peer pressure, marginalized status, disabling family environment and personal characteristics (e.g. high curiosity, tolerance for risk, low self-esteem, etc.).

There was a fair level of knowledge on different aspects of substance/drug abuse in both sexes, including the harmful effects on the body and society. Mass media and textbooks played an important role in providing this information. In addition, the role of the family and peer networks in the causation, management and prevention of substance/drug abuse are emphasized.

**Table 25. Knowledge on Addicting Substances/Drugs (%), By Sex, 2006**

	<b>Boys (n=1,890)</b>	<b>Girls (n=2,145)</b>	<b>Both Sexes (n=4,035)</b>
<b>Knows that the following are addictive</b>			
Tobacco	77.0	81.4	79.4
Alcohol	81.8	85.3	83.6
Ganja	92.2	89.5	90.8
Heroin	88.2	86.0	87.0
Codein (phensidyl syrup)	78.5	67.9	72.9
Opium	62.3	56.5	59.2
Tari	50.5	48.8	49.6
Cocaine	46.9	35.8	41.0
<b>Harmful effects of addictive substances/drugs*</b>			
Drowsiness	63.8	74.1	69.3
Euphoria	18.7	19.0	18.9
Disorientation	35.0	37.6	36.4
Abnormal behaviour	56.9	69.7	63.7
Quarrelsome	22.1	26.8	24.6
Loss of control over movement	61.0	65.9	63.6
Others	2.4	2.2	2.3
Don't Know	26.2	14.1	19.8

\*multiple responses considered

Source: Ahmed, S.M. et al, 2006.

Table 25 shows that adolescents are aware that drugs such as cocaine, codeine, heroin, ganja, opium and tari are addictive. Sixty-nine percent considered drowsiness to be the main side effect of illegal substances/drugs. This was followed by other effects such as abnormal behavior, loss of control over movement and disorientation. The data showed that girls were more aware in the harmful effects of addictive substances/drugs than boys.

**Table 26. Place of Availability and Route of Intake (%), By Sex, 2006**

	<b>Boys (n=1,890)</b>	<b>Girls (n=2,145)</b>	<b>Both Sexes (n=4,035)</b>
<b>Places where addictive drugs are known to be available</b>			
Slums	54.2	61.5	58.1
Shops selling cigarettes/betel leaves	30.7	32.5	31.7
Some specific couriers	38.9	46.3	42.8
Shops selling traditional medicine	6.7	6.6	6.6
Pharmacies	16.9	15.0	15.9
Others	3.5	1.9	2.7
Don't Know	33.7	25.3	29.2
<b>Routes of Intake</b>			
Sniffing	36.0	38.2	37.2
With cigarettes	54.7	58.1	56.5
Cigar-like sticks	39.4	42.6	41.1
Chewing	15.8	17.9	16.9
Swallowing	29.3	30.0	29.7
Injecting	57.9	68.5	63.5
Don't Know	29.5	18.4	23.6

Source: Ahmed, S.M. et al, 2006.

Fifty-eight percent of the respondents were aware that drugs are available in slums. This is followed by some specific couriers (43%), shops selling cigarettes/betel leaves (32%) and pharmacies (16%). Both sexes were aware that drugs were taken by injecting (64%), with cigarettes (57%) and cigar-like sticks (41%).

## References

- <sup>163</sup> Mongabay. 2006. *Bangladesh – Society*. Retrieved from [http://www.mongabay.com/reference/country\\_studies/bangladesh/SOCIETY.html](http://www.mongabay.com/reference/country_studies/bangladesh/SOCIETY.html) on 14 June 2007
- <sup>164</sup> Center for Reproductive Rights. 2004. *Women of the World: Laws and Policies Affecting Their Reproductive Lives*. Retrieved from [http://www.reproductiverights.org/pdf/pdf\\_wowsa\\_bangladesh.pdf](http://www.reproductiverights.org/pdf/pdf_wowsa_bangladesh.pdf) on 14 June 2007
- <sup>165</sup> Ibid.
- <sup>166</sup> Center for Reproductive Rights. 2004. *Women of the World: Laws and Policies Affecting Their Reproductive Lives*. Retrieved from [http://www.reproductiverights.org/pdf/pdf\\_wowsa\\_bangladesh.pdf](http://www.reproductiverights.org/pdf/pdf_wowsa_bangladesh.pdf) on 14 June 2007
- <sup>167</sup> Department for International Development Health Systems Resource Centre. 1999. *Bangladesh: Health Briefing Paper*. Retrieved from [http://www.dfidhealthrc.org/shared/publications/Country\\_health/Bangladesh.pdf](http://www.dfidhealthrc.org/shared/publications/Country_health/Bangladesh.pdf) on 14 June 2007
- <sup>168</sup> Centre for Reproductive Rights. 2004. *Women of the World: Laws and Policies Affecting Their Reproductive Lives*. Retrieved from [http://www.reproductiverights.org/pdf/pdf\\_wowsa\\_bangladesh.pdf](http://www.reproductiverights.org/pdf/pdf_wowsa_bangladesh.pdf) on 14 June 2007
- <sup>169</sup> Ibid.
- <sup>170</sup> Mongabay. 2006. *Bangladesh – Society*. Retrieved from [http://www.mongabay.com/reference/country\\_studies/bangladesh/SOCIETY.html](http://www.mongabay.com/reference/country_studies/bangladesh/SOCIETY.html) on 14 June 2007
- <sup>171</sup> Centre for Reproductive Rights. 2004. *Women of the World: Laws and Policies Affecting Their Reproductive Lives*. Retrieved from [http://www.reproductiverights.org/pdf/pdf\\_wowsa\\_bangladesh.pdf](http://www.reproductiverights.org/pdf/pdf_wowsa_bangladesh.pdf) on 14 June 2007
- <sup>172</sup> World Bank. 2005. *Comparative Advantages of Public and Private Health Care in Bangladesh*. Retrieved from <http://siteresourcesqa.worldbank.org/BANGLADESHEXTN/Resources/FINAL-printversion-Paper-4.pdf> on August 16, 2006
- <sup>173</sup> Ministry of Health and Family Welfare. 1997. *Health Facility*. Retrieved from <http://www.mohfw.gov.bd/facility.htm> on 14 June 2007
- <sup>174</sup> NIPORT et al. 2002. *Bangladesh Service Provision Assessment Survey 1999-2000*. Retrieved from <http://www.measuredhs.com/pubs/pdf/OD24/BangladeshSPA.pdf> on 15 June 2007
- <sup>175</sup> NIPORT et al. 2002. *Bangladesh Service Provision Assessment Survey 1999-2000*. Retrieved from <http://www.measuredhs.com/pubs/pdf/OD24/BangladeshSPA.pdf> on 15 June 2007
- <sup>176</sup> NIPORT et al. 2002. *Bangladesh Service Provision Assessment Survey 1999-2000*. Retrieved from <http://www.measuredhs.com/pubs/pdf/OD24/BangladeshSPA.pdf> on 15 June 2007
- <sup>177</sup> NIPORT et al. 2002. *Bangladesh Service Provision Assessment Survey 1999-2000*. Retrieved from <http://www.measuredhs.com/pubs/pdf/OD24/BangladeshSPA.pdf> on 15 June 2007
- <sup>178</sup> World Bank. 2005. *Comparative Advantages of Public and Private Health Care in Bangladesh*. Retrieved from <http://siteresources.worldbank.org/BANGLADESHEXTN/Resources/FINAL-printversion-Paper-4.pdf> on August 16, 2006.
- <sup>179</sup> WHO. 2004. *Bangladesh and Family Planning: An Overview*. Retrieved from [http://w3.who.org/LinkFiles/Family\\_Planning\\_Fact\\_Sheets\\_bangladesh.pdf](http://w3.who.org/LinkFiles/Family_Planning_Fact_Sheets_bangladesh.pdf) on August 16, 2006.
- <sup>180</sup> UNPAN. 2003. *Bangladesh*. Retrieved from <http://unpan1.un.org/intradoc/groups/public/documents/APCITY/UNPAN022523.pdf> on 15 June 2007
- <sup>181</sup> Ibid.
- <sup>182</sup> SEARO. 2004. *Trends in Health Status: Bangladesh*. Retrieved from [http://www.searo.who.int/EN/Section313/Section1515\\_6919.htm](http://www.searo.who.int/EN/Section313/Section1515_6919.htm) on 15 June 2007

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- <sup>183</sup> Ibid.
- <sup>184</sup> Ibid.
- <sup>185</sup> POLICY Project. 2000. *Maternal and Neonatal Program Effort Index: Bangladesh*. Retrieved from [http://www.policyproject.com/pubs/MNPI/Bangladesh\\_MNPI.pdf](http://www.policyproject.com/pubs/MNPI/Bangladesh_MNPI.pdf) on 15 June 2007
- <sup>186</sup> UNICEF. 2006. *Child and Maternal Nutrition in Bangladesh*. Retrieved from [http://www.unicef.org/bangladesh/Child\\_and\\_Maternal\\_Nutrition.pdf](http://www.unicef.org/bangladesh/Child_and_Maternal_Nutrition.pdf) on 15 June 2007
- <sup>187</sup> National Institute of Population Research and Training (NIPORT). 2005. *Bangladesh Demographic and Health Survey 2004*. Retrieved from [http://www.measuredhs.com/pubs/pub\\_details.cfm?ID=526&ctry\\_id=1&SrchTp=ctry](http://www.measuredhs.com/pubs/pub_details.cfm?ID=526&ctry_id=1&SrchTp=ctry) on 15 June 2007
- <sup>188</sup> Ibid.
- <sup>189</sup> Ibid.
- <sup>190</sup> Ibid.
- <sup>191</sup> Ibid.
- <sup>192</sup> Ibid.
- <sup>193</sup> Barkat, Abul and Murtaza Majid. 2003. *Adolescent Reproductive Health in Bangladesh: Status, Policies, Programs and Issues*. Retrieved from [http://www.policyproject.com/pubs/countryreports/ARH\\_Bangladesh.pdf](http://www.policyproject.com/pubs/countryreports/ARH_Bangladesh.pdf) on 15 June 2007
- <sup>194</sup> Ghani, Abdul and Mostafa Kamal Pasha. n.d. *Traditional Medicine*. Retrieved from [http://banglapedia.search.com.bd/HT/T\\_0207.htm](http://banglapedia.search.com.bd/HT/T_0207.htm) on 15 June 2007
- <sup>195</sup> WHO. 2001. *Legal Status of Traditional Medicine & Complementary/Alternative Medicine: A Worldwide Review*. Retrieved from [http://www.paho.org/Spanish/AD/THS/EV/PM-WHOTraditional\\_medicines\\_legal\\_status.pdf](http://www.paho.org/Spanish/AD/THS/EV/PM-WHOTraditional_medicines_legal_status.pdf) on September 8, 2006.
- <sup>196</sup> WHO. 2003. *Bangladesh*. Retrieved from <http://w3.whosea.org/en/section1174/section1462/pdfs/surv/Bangladesh.pdf> on September 15, 2006.
- <sup>197</sup> Wahid, Shahnoor. 2004. *Study Confirms That Tobacco Kills*. Retrieved from <http://www.newagebd.com/2005/sep/19/pulse.html> on September 15, 2006.
- <sup>198</sup> Ibid.
- <sup>199</sup> Yunus, Mohammad. 2001. *Craving for Nicotine: A Study on Tobacco Prevalence in Bangladesh*. Retrieved from <http://w3.whosea.org/en/Section1174/Section1462/pdfs/surv/SentinelBangladesh.pdf> on September 15, 2006.
- <sup>200</sup> WHO. 2004. *WHO Global Status Report on Alcohol 2004*. Geneva: World Health Organization. Retrieved from [http://www.who.int/substance\\_abuse/publications/en/1\\_all\\_profiles\\_searo.pdf](http://www.who.int/substance_abuse/publications/en/1_all_profiles_searo.pdf) on October 23 2006
- <sup>201</sup> Bhuiya, I et al. 2004. *Improving Adolescent Reproductive Health in Bangladesh*. Retrieved from [http://www.popcouncil.org/pdfs/FRONTIERS/FR\\_FinalReports/Bangladesh\\_Youth.pdf](http://www.popcouncil.org/pdfs/FRONTIERS/FR_FinalReports/Bangladesh_Youth.pdf) on 15 June 2007
- <sup>202</sup> WHO. 2004. *WHO Global Status Report on Alcohol 2004*. Geneva: World Health Organization. Retrieved from [http://www.who.int/substance\\_abuse/publications/en/1\\_all\\_profiles\\_searo.pdf](http://www.who.int/substance_abuse/publications/en/1_all_profiles_searo.pdf) on October 23 2006.
- <sup>203</sup> Ahmed, S. M. et al. 2006. *Substance and Drug Abuse: Knowledge, Attitude and Perception of Schoolgoing Adolescents in Bangladesh*. Regional Health Forum (RHF) Volume 6, Number 2. Retrieved from [http://www.searo.who.int/EN/Section1243/Section1310/Section1343/Section1344/Section1356\\_5328.htm](http://www.searo.who.int/EN/Section1243/Section1310/Section1343/Section1344/Section1356_5328.htm) on 15 June 2007