Available online at www.rajournals.in

International Journal of Management and Economics Invention

ISSN: 2395-7220

DOI: 10.33826/ijmei/v5i9.01

Volume: 05 Issue: 09 September 2019

International Open Access

ICV: 72.76

Impact Factor: 6.378(SJIF), 0.532(GIF)

Page no.-2096-2107

Current Workforce of Health Sector and Its Development in Bangladesh

Tania Sultana

Assistant Professor, Department of Economics, University of Rajshahi

ARTICLE INFO

Publication Online: 19 September 2019

Corresponding Author: **Tania Sultana**

ABSTRACT

Bangladesh is one of the countries with severe shortages of health workers. This study tries to describe and evaluate and the current situations of health workforce and human resource development in Bangladesh. Here non-empirical study will apply and the analysis will be made from the data and contents collected from various articles and journals published by various authors and released through various sources. This study revealed that there is a huge disparity in health care service and distributions between rural and urban areas. People are also suffering due to lack of medical expertise, medicines and health care facilities. Bangladesh cannot provide minimal health care service to the all people due to insufficient number of doctors, health care professionals and medical services. Approaches to improving the quality of care provided by this sector, including improved monitoring and regulation, are needed.

KEYWORDS: Health workforce, health worker density, Sustainable Development Goals (SDGs), DGHS, DGFP, Bangladesh, WHO.

1. INTRODUCTION

Bangladesh, adhering to its remarkable performances in achieving the Millennium Development Goals (MDGs) way ahead of neighbouring countries, has also expressed its willingness to do the same with regard to achieving the Sustainable Development Goals (SDGs) as well. As part of the nation's commitment to achieving the SDGs, the current government took the agenda of healthcare development with utmost importance and has adopted relevant policies to improve the national health indicators (Murshed, 2017). An integral part of the government's 'Vision 2021' engulfs the national goal of ensuring a healthy population through widespread access to healthcare facilities. More recently, e-Health is being given special emphasis due to the Digital Bangladesh campaign of the present government, which gives special preference to delivery of health services to citizens through ICT (Hoque et.al, 2014). Government has made partnership with development partners, private organizations, and NGOs to improve the quality, efficiency and safety of e-Health services in Bangladesh (WHO, 2012).

1.1 Background

Over the last 48 years since independence Bangladesh has made lot of progress in the health Sector. Visibly there is a large number in health infrastructures - medical colleges, medical university, private medical colleges, private clinics, private hospitals, district hospital, rural health centers and community clinics. Many NGOs and welfare organisation are also engaged and contributing toward health care delivery system. Noticeable progress has been made in the pharmaceutical sector providing adorable and contemptible medicine, intravenous fluids, anti cancer drugs etc. There is also increased awareness in the general public on different health issues. Many national and private level campaigns are ongoing to promote mental and child health, maternal health, vaccination programmes, mass deworming programmes, use of safe drinking water and hygiene latrines, hand washing etc (Hossain, 2015).

A reasonable level of progress has also been made in family planning. The population growth rate has been brought down. A huge and successful network of private physicians expanded and spread to all over the country is trying to meet the needs of day to day medical and health problems. There have been significant gains in terms of polio & small pox eradication. Extensive vaccination, case isolation has resulted in diminishing number of diarrhea, diphtheria and tetanus. With improvement of overall hygiene and sanitation standard there is a noticeable reduction in cholera, typhoid and dysenteries. A great no of tuberculosis satellite clinics now offer free treatment with contribution from NGO's. HIV & AIDS are at a low level of prevalence but remains a threat because of international migration and employment. As a dengue-like disease, Chikungunya fever, Zika Virus, Filaruasis, Kala-azar are emerging alarmingly in the country in recent years (Hossain, 2015).

Bangladesh is one of the countries with severe shortages of health workers (WHO, 2006). However, there is a lack of comprehensive data on human resources for health (HRH) in the formal and informal sectors in Bangladesh. Given the shortage of supply of qualified health care providers in Bangladesh, patients, especially the poor and the disadvantaged, mostly seek health care from the nonqualified providers in the informal sector (Ahmed et al., 2011).On the demand side, due to lack of health awareness, the overall health service consumption in Bangladesh is low compared to other developing countries, as is level of need (Mercer et al., 2005).

Human Resources for Health (HRH), the backbone of the health care delivery system, are in a crisis situation in Bangladesh with a critical shortage of health workers, although health workers command three-fourths of the national health budget (Mahmud, 2013). Worker numbers and quality are positively associated with gains in health. The density of workers in a population is closely associated with some of the key health MDG indicators. Huge shortages of qualified providers and presence of a huge body of unqualified providers with unknown quality are major issues. Other challenges relate to the capacity and distribution of qualified health care providers; this limits access to skilled care and particularly in rural areas (Alam et al., 2015). Bangladesh is one of 58 countries that face an acute shortage of human resources for health (WHR, 2006). According to the WHO, the density of qualified health care personnel in Bangladesh is substantially lower than other South Asian countries (Health Bulletin, MOHFW, 2015).

1.2 Objectives of the study

The main objective of this study is to describe and evaluate and the current situations of health workforce and human resource development in Bangladesh. The issues of health workforce have achieved an important issue in Bangladesh, especially when Bangladesh has made significant changes within health related MDGs like infant or child mortality rate and maternal mortality rate than many other developing countries and now on the new track of SDG. This study also makes a comparative analysis of health personnel among some Asian countries including Bangladesh. The study also examines the important components of human resource development between health and human resource development.

1.3 Data sources

The study will be referring several other literatures on current health workforce situation in Bangladesh published by various sources. In this study non-empirical study will apply and the analysis will be made from the data and contents collected from various articles and journals published by various authors and released through various sources. The references of those will be given in reference part.

The paper is organized as follows. The recent health status of Bangladesh is presented in section 2. Section 3 explains health workforce situation in Bangladesh, while section 4 elaborately discuss the physical and human resources of health sector in Bangladesh. We present a comparative statistics of the health workforce in Asian countries including Bangladesh in section 5. In section 6, we have future priorities and challenges. Finally, conclusion of this work is presented in section 7.

2. HEALTH STATUS OF BANGLADESH

Bangladesh has a population of about 158 million, and is the eighth most populous country in the world (Bangladesh Demographics Profile, 2018), with annual Population growth rate of 1.04%. Male: female ratio is 97/100.0. Most people are living in the rural area (63%) and the urban population is 62,561,286 in 2019. Crude birth rate is 18.8 per 1,000 population and crude death rate is 5.4 per 1,000 population with net reproduction rate (NRR) per woman (15-49 year) is 1.02 in 2015 (UNDESA, 2015). Life-expectancy at birth (year) is 71.6 for both sexes: 70.3 for male and 72.9 for female.

Table 1: Bangladesh-basic statistics

Area (sq. km)	130,170
Total population	167,501,989 (March 3, 2019 est.)
Population density (per sq. km)	1291
Crude birth rate (per 1000 population)	18.8
Crude death rate (per 1000 population)	5.4
Life expectancy at birth m/f (2017)	70.3 /72.9
Total fertility rate	2.17 children born/woman (2017 est.)
Under 5 mortality rate	35/1000 live births
Fully immunized children	84%
Contraceptive prevalence rate	62.3 (SVRS, 2016)

Source: http://www.worldometers.info/world-population/bangladesh-population/; Bangladesh Demographics Profile, 2018, Health Bulletin, 2017

The life expectancy at birth has surged by more than 73% over the last 50 years revealing significant development in healthcare facilities and awareness over time. According to the World Health Organisation (WHO), Bangladesh is

forward of most of its neighbouring nations when it comes to its national life expectancy at birth. For instance, the life expectancy at birth in the country is 72 years on average which is more than by a couple of years compared to that of India and Pakistan having life expectancy at birth figures of 69 and 66 years respectively. Not only that, percentage of children immunized against various communicable diseases, family planning method and the literacy rate for young women are higher in Bangladesh than in Pakistan and in India (Kuruvilla, 2014). In the three decades between 1990 and 2017, under-five mortality has fallen by more than 75%, while infant mortality and neonatal mortality have declined by around half.

Moreover, the country displayed remarkable performance in protection and improving maternal and infant lives. The maternal mortality rate in Bangladesh has also experienced a declining trend as the rate was restricted by more than 70% over the last 30 years. The MMR in Bangladesh declined between 2001 and 2010 but has now stalled. At present, maternal mortality rate in the country is estimated from the BMMS 2016 to be around 196 per 100,000 live births. Between BMMS 2001 and BMMS 2010, MMR declined significantly: from 322 to 194 maternal deaths per 100,000 live births. This decline was evidence of remarkable progress linked to fertility reduction; access to qualified maternal health care; increased use of maternal health services in the antenatal, delivery, and postpartum periods; and socioeconomic and infrastructural improvements (Arifeen, et. al, 2014).The country has also taken effective initiatives in ensuring infant and neonatal health safety as reflected by sharp declines in the associated death rates. Infant mortality rate in the country has gone down by almost 75% over the last three decades or so. At present, infant mortality rate in Bangladesh drift around 34 deaths per 1000 live births as compared to India, Pakistan and Sri Lanka having corresponding rates of 43, 78 and 9 per 1000 live births respectively (World Health Statistics, 2018). According to UNICEF, the current neonatal death rate in Bangladesh is around 23 deaths per 1000 live births which are 50% and 17.86% less compared to that in Pakistan and India respectively. Furthermore, death rate due to communicable diseases and maternal, prenatal and nutrition conditions has also reduced in the country by more than 33% in between 2000 and 2012. However, Bangladesh despite being slightly better off in this matter compared to Pakistan, the country ways behind than India and Sri Lanka (Murshed, 2017).

Bangladesh is one of few countries in the world where public hospitals offer free medical services to the citizen at the community level. Currently, there are 607 government hospitals, 477 upazila and union levels hospitals and 130 secondary & tertiary levels hospitals in Bangladesh. Furthermore, 5,023 private hospitals and 10,675 private diagnostic centers are continuously working to ensure the better health services in Bangladesh (Health Bulletin, 2017). However, Bangladesh has been identified as one of 57 countries in the world with a critical shortage in health workforce (doctors, nurses and midwives number below 2.28 per 1000 population) and number of bed (6 per 10,000) in hospitals (World Health Statistics, 2014). In addition, providing affordable and adequate health care is a challenge due to poor healthcare infrastructure and high population density (Mostafa et.al, 2010). In the light of these problems, the government has started a new era in the health sector by introducing Information and Communication Technology (ICT) for health service delivery (Hoque et al., 2014).

3. HEALTH WORKFORCE IN BANGLADESH

For any health system, health workers are the most critical driving force. They are the ultimate resource for promoting health, preventing disease, and curing sickness. WHO defines health workers as "all people engaged in actions whose primary intent is to enhance health" (WHO, 2006). In addition, a new more operational framework has been recently proposed (Dal Poz et. al 2009), which divides health workers into three categories:

A. Those with health education and training working in the health sector;

B. Those with training in a non-health field (or with no formal training) working in the health sector;

C. Those with health training who are either working in a non-health-care-related industry, or who are currently unemployed or not active in the labour market.

The sum of the three elements (A, B, and C) yields the total potential health workforce available. In this way, this framework can be a useful tool for identifying and calculating potential data sources and gaps for health workforce analysis. Population censuses, demographic and health survey, labour force surveys can also provide information on all three elements, while health facility assessments and other administrative records provide data only for the active health workforce.

WHO estimates a shortage of more than 4 million doctors, nurses, midwives and others. In absolute terms, the greatest shortage occurs in South-East Asia, dominated by the needs of Bangladesh, India and Indonesia. Bangladesh has a critical shortage of health workers compared with the WHO recommended level of 23 per 10,000 qualified health workers required to achieve the MDGs (WHO,2010). Table 2 provides estimated workforce density ratios for the main health cadres in Bangladesh.

Table 2: Health workforce ratios per 10,000 populations in Bangladesh, 2001–2016

	2001	2004	2005	2016
Physicians	2.3	2.6	3.0	4.90
Nurses/midwives		1.4	1.8	2.90
Dentists		0.2	0.2	5.37
Pharmacists		0.6		0.13
Laboratory workers		0.3	0.1	0.37
Public health workers		0.4	0.4	
Community health workers		3.1	1.5	4.04
Other health workers		0.4	0.5	2.94

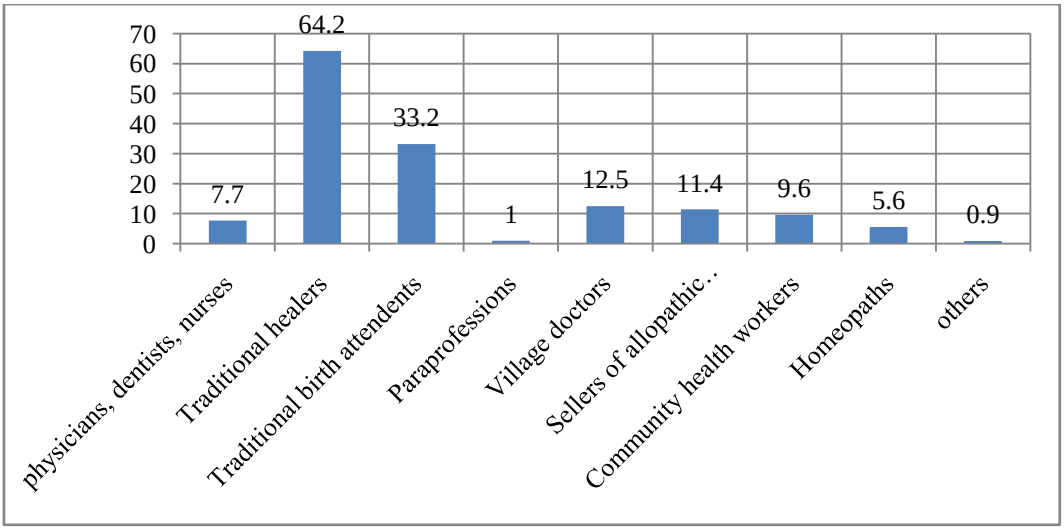
Source: WHO 2008, Health Bulletin, 2016

In Bangladesh, similar to other low-income countries, estimating workforce numbers and the gap is challenging as the quality of information on the health workforce is not widespread in scope and not updated routinely. MOHFW does not routinely generate health workforce estimates; the available information is inconsistent and not well correlated. The BHW 2007 provides estimates of the workforce based on a national survey completed in 2007. It estimates a health workforce density of 146 per 10,000 population, with a ratio of 7.7 per 10,000 qualified health care providers including physicians, dentists and nurses (Bangladesh Health watch, 2007).

3.1. Density: In its World Health Report 2006, the WHO recommended a density target for all countries: a minimum of 2.3 physicians, nurses, and midwives per 1,000 people. This goal was set based on the ISCO-1988 to "attain adequate coverage of some essential health interventions and core MDG (Millennium Development Goals)-related health services". This point suggests that the 2.3 per 1000 target is not set with a view to horizontal universal coverage (Jimba et.al, 2010). In September 2015, the new Sustainable Development Agenda 'Transforming Our World: the 2030 agenda for sustainable development' was adopted by the UN General Assembly (UN, 2015). It recognizes an 'unfinished MDG agenda'; it responds to new health priorities and increasing concerns about health security, and the health impact of migration and climate change. Health is centrally placed in the 2030 Agenda. The health goal (SDG3) is comprehensive: 'to ensure healthy lives and promote well-being for all at all ages' and the goal of health worker density (per 10 000 population) in 2016 was 7.4 (WHO, 2016).

Bangladesh also has a shortage of skilled health workers (figure-1).

Figure 1: Density of health-care providers per 10 000 populations (%)



Source: Bangladesh Health Bulletins 1997, 2007, 2012

Note: Traditional healers include *kabiraj*, *totka*, herbalists, and faith healers. Traditional birth attendants are trained and untrained. Para-professionals include medical assistants, sub-assistant community medical officers, family welfare visitors, and laboratory technicians.

4. PHYSICAL AND HUMAN RESOURCES OF HEALTH SECTOR IN BANGLADESH

Bangladesh suffers from both a shortage of and geographic mal-distribution of human resource for health (HRH). There are an estimated 4.90 physicians per 10,000 population and

3.90 nurses per 10,000 population (estimates based on MoHFW Health Bulletin, 2016). There is a severe gap between sanctioned and filled health worker positions: 36% vacancy in sanctioned health worker positions and only 32% of facilities have 75% or more of the sanctioned staff working in the facilities (World Bank, 2009). 28% of treatment provided in government health facilities is through alternative medicine (Ayurveda, Unani, and Homeopathy), yet as of June 2011, there was a 50% vacancy rate for alternative medicine providers (MoHFW, 2011).

Health workers are concentrated in urban secondary and tertiary hospitals, although 70% of the population lives in rural areas (Country Case study (GHWA, 2008). Major challenges include: an overly- centralized health system, weak governance structure and regulatory framework, weak management and institutional capacity in the Ministry of Health and Family Welfare (MOHFW), fragmented public service delivery, inefficient allocation of public resources, lack of regulation of the private sector – which employs 58% of all physicians, shortage of HRH, high turnover and absenteeism of health workers, and poor maintenance of health facilities and medical equipment. (WHO, 2018)

Table 3: Indicators of the Health and Family Planning Sector

Health Services Provision	Number	Source
Government hospitals under DGHS	607	DGHS 2017
Government hospitals of secondary and tertiary Level Under the DGHS	130	DGHS 2017
Government hospitals at Upazila and Union	477	DGHS 2017
No, of Private registered hospitals and clinics under the DGHS	5,023	DGHS 2017
No. of private registered diagnostic center	10,675	DGHS 2017
Number of Hospital beds under DGFP :	1,593	DGHS 2015
No. of hospital beds under DGHS (functional) :	49,414	DGHS 2017
No, of hospital beds in private sector (in private hospitals registered by DGHS)	87,610	DGHS 2017
Population per hospital bed (total beds in the DGHS DGFP and registered private hospitals against estimated population of 3 December 2017) :	1,169	DGHS 2017
No, of postgraduate medical teaching institutions: 33; Government: 23 Private: 10		DGHS 2015
No, of medical colleges: Total 100; Government: 36; (Non by DGHS: 30 and Bangladesh Armed Force: 6) Private: 64		DGHS 2015
No, of Dental colleges: Total 33; Government: 9; Private: 24		DGHS 2015
No. of degree/diploma collages for alternative medicine: Total 64: Government: 3; Private 61		DGHS 2015
No. of nursing College offering basic d&C Nursing Course: Total 39; Government:14; Private: 24		DGHS 2013
No. of institutions providing Junior midwifery training:	45	DGHS 2015
No. of training institutions for community skilled birth attendants:	47	DGHS 2015
No. of medical assistants training schools: Total 176; Government: 8; Private: 168		DGHS 2015
No. of institutes of health technology (IHT) Total 116; Government: 8; Private: 104; Government-Private: 4		DGHS 2015
Bachelor of Homeopathic Medicine College:	50	Health Bulletin-2015
Number of Nursing Institutions: Total 13, Government 57, Private 68		Health Bulletin-2015
Medical Assistant	6,821	Health Bulletin-2014
Medical technologist	14,255	Health Bulletin-2014
No. of sanctioned posts Under DGHS	1,24,216	DGHS 2014
No. of registered Physicians	85,633	Health Bulletin, 2017
No. of registered dental surgeons	8130	Health Bulletin, 2017
Distribution of doctors MOHFW 35%, Other ministries 3% private 62%		MOHFW 2013 HRM unit, MOHFW 2013
No. of doctors under DGHS (existing)	20,603	Health Bulletin, 2017
Doctors under DGFP	727	Health Bulletin, 2017
Total No. of doctors in DGHS and DGFP	21,330	Health Bulletin, 2017
Estimated number of doctors available in the country	53,929	MOHFW 2013
No. of registered diploma nurses	48,001	Health Bulletin, 2017

Nureses Currently available Under MoHFW	18,366	DNS 2014
No. of nurse mid-wives in public sector	596	DGHS 2013
No. of trained skilled birth attendants	7,265	DNC 2013
No. of family planning officers	356	DGFP 2014
No. of sanitary inspectors	436	DGHS 2014
No. of dental technologists	501	DGHS 2014
No. of laboratory technologists	1,498	DGHS 2014
No. of pharmacy technologists	2,126	DGHS 2014
No. of radiographers	629	DGHS 2014
No. of physical therapists	144	DGHS 2014
No. of community healthcare providers to work at community clinics	13,240	HRM unit, MOHFW 2013
No. of domiciliary workers under DGHS	22,045	DGHS 2014
No. of facility –based workers under DGFP	5,358	DGFP 2013
Doctors working under MOHFW per 10000 people	4.90	Health Bulletin, 2016
Population per physician	2,894	Health Bulletin-2014
Population per MOHFW's nurse	8,497	Health Bulletin-2014
Population per MOHFW's medical technologist	29,034	Health Bulletin-2014
No. of MOHFW's medical technologists per 10000 population	0.3	Health Bulletin-2014
Population per MOHFW's community health worker	2,603	Health Bulletin-2014
No. of MOHFW's community health workers per 10000 population	3.8	Health Bulletin-2014

Source: DG of Health Service, Health Bulletin, 2014.2017 & BBS.

4.1. Domiciliary health services in rural Bangladesh

There are domiciliary workers—one for every 5 to 6 thousand people at the ward or village level. Under the DGHS, there are 26,538 sanctioned posts of domiciliary workers, of which 20,908 are for health assistants (HA), 4,220 for assistant health inspectors (AHI), and 1,410 for health inspectors (HI).As of now, 78.54% posts were filled up. Like the DGHS, the DGFP also has domiciliary workers to work at the ward or village level. These staff members are called family planning inspectors (FPI) and family welfare assistants (FWA); 88% of the posts of FPIs and 83% posts of FWAs are filled up (Health Bulletin, 2017).

4.2. Infrastructure

Bangladesh has an extensive public sector health infrastructure spanning the country and consisting of primary, secondary and tertiary health care facilities. PHC facilities are the first level of care at the community level while the secondary and tertiary facilities are those where more advanced and specialty care is provided.

4.3. Primary Health Care level health facilities

The core of the PHC facilities is the community clinics, a flagship programme of the current government. With one for every 6000-8000 people, a community clinic brings family planning, preventive, and limited curative services closer to the population, usually within 30 minutes' walking distance. Each clinic consists of two rooms with drinking water and lavatory facilities, and a covered waiting area. To boost this sense, each community was required to set up a group to support and assist with their management, although the staff and supplies are provided by the Government. As of 2017, there were 13,500 functional community clinics in the country (Ministry of Health and Family Welfare, 2018). They are staffed by one Health Assistant (DGHS), one Family Welfare Assistant (DGFP) and one Community Health-care Provider (CHCP) from the project. All provide similar services. When one is preoccupied with domiciliary services, the other staff takes the responsibility for providing services at the facility. Community clinic is a one-stop service outlet on health, family planning and nutrition and it is certainly a pro-people health initiative led by the Government. It is expected that community clinics will ensure provision of quality healthcare for the mass people of rural Bangladesh, particularly the poor, vulnerable, and the underprivileged people.

Table 4: Primary healthcare centers run by the DGHS at the Upazila level and below, 2017

Level	Type of facility	Type of service	Total no. of facilities	Total beds
Upazila	Upazila Health complex (50-bed)	Hospital	297	14,850
	Upazila health complex (31-bed)	Hospital	112	3,472
	Upazila health complex (10-bed)	Hospital	11	110
	Upazila health complex (0-bed)*	OPD	4	-
	Sub-Total of Upazila Health Complex		424	18,432
	Upazila Health Office	OPD	60	-

	31-Bed Hospital		4	124
	30-Bed Hospital	Hospital	2	55
	Subtotal of hospitals outside health complexes		66	179
	Total of upazila-level hospitals		490	18,611
Union	20-bed hospital	Hospital	32	640
	10-bed hospital	Hospital	19	190
	Subtotal of union-level hospitals		51	830
	Union subcenter and Union Health and Family welfare center	OPD	1,399	…
Ward	Community clinic	Functional at present (OPD)	13,442	-
	Total of Primary Care hospitals (upazila and below)		477	19,441
	Grand total of Primary health facilities		15,382	19,441
*Hospital not yet started				

Source: DG of Health Service, Health Bulletin, 2017, MOHFW

Besides community clinics, the primary infrastructure includes 477 hospitals at upazila-level and below with a bed capacity of 19,441. Counting together the hospitals and outdoor-only centers, there are 15,382 public health facilities at these levels. (Table above) (Health Bulletin, MOHFW, 2017). Besides these, there are ninteen 10-bed (in number) and thirty two 20-bed hospitals at the union level under the DGHS. DGFP runs 3924 Union Health and Family Welfare Centers, of which 1500 have been upgraded to provide primary and outdoor care (HRH data, MOHFW, 2014). At the union level, there are 51 primary-care hospitals with 830 beds and 1,399 health facilities for outpatient services only. So, at the union level, there are 1,450 primary-care health facilities in the country. Moreover, there are 5 trauma centers at this level; these are included in the list of secondary and tertiary-care centers. At the ward level, there are 13,442 community clinics in operation. Moreover, primary healthcare includes domiciliary healthcare, essential service delivery, along with urban primary healthcare, maternal healthcare, child healthcare, school health program, and adolescent health program. In Bangladesh, the 4th Health, Population and Nutrition Sector Program (HPNSP) is under implementation for a period from January 2017 to June 2022. Operational Plan of the Community-based Healthcare (CBHC) will contribute substantially in achieving the targets of SDGs, like the MDGs.

Table 5: Distribution of beds in the public sector at upazila (sub-district) level and below

Type of facility	**2007**		**2010**		**2013**		**2017**	
	hosp	**bed**	**hosp**	**bed**	**hosp**	**bed**	**hosp**	**bed**
Upazila Health Complex	413	15,741	424	15,877	436	18,290	490	18,611
50 bed hospital	153	7,650	156	7,800	268	13,400	297	14,850
30/31 bed hospital	260	8,091	254	7,874	151	4670	182	3,651
10 bed hospital	-	-	11	110	11	110	11	110
Union hospital	17	340	27	410	31	490	51	830
20 bed hospital	35	700	14	280	18	360	32	640
10 bed hospital	-	-	13	130	13	130	19	190
Total	430	16,781	451	16,287	467	18,780	541	19,441
Trauma Centre (20 bed)	-	-	5	100	5	100	5	100

Source: Bangladesh Health Bulletins 2007, 2010, 2013, 2017

4.4. Secondary and tertiary level facilities

This category of hospitals comprises general hospitals, district hospitals, medical college hospitals, specialized hospitals, and other hospitals. At the district level, DGHS operates 53 district hospitals, nine general hospitals, three leprosy hospitals, five communicable disease hospitals, 13 chest disease/TB hospitals, 43 chest/TB clinics and 23 school health clinics (Health Bulletin, 2017). The district and general hospitals offer primary and secondary care through outdoors, indoors (outpatient and inpatient services) and emergencies. Leprosy, communicable diseases and chest disease/TB hospitals provide specialized services through outdoors and indoors. Chest/TB and school health clinics provide outdoor services only. The DGFP at the district level operates 97 Maternal and child health center (MCWCs) (HRH data, MOHFW, 2014).

Table 6: Secondary and tertiary hospitals/ health centers under DGHS, with the number of functional beds

Types of Hospital/ Health Center	No. of Facilities	No. of Functional Beds
A. Hospitals		
Chest Hospital	13	816
100-bed hospital	1	100
Dental College Hospital	1	200
District/General Hospital	64	10,450
Hospital of Alternative Medicines	2	200
Infectious Diseases Hospital	5	180
Leprosy Hospital	3	130
Medical college Hospital	17	13,713
Specialized Hospital	5	1,050
Specilalty post graduate institute and Hospital	11	3,034
Trauma Center	5	100
Total (Hospital)	127	29,973
B. Other facilities (Specialized health centers)		
Chittagong Skin & Hygiene Treatment Center	1	Not applicable
Tejgaon Health Complex	1	Not applicable
National Center for Control of Rheumatic Fever & Heart Disease	1	Not applicable
Total hospitals and other facilities	130	29,973

Source: DG of Health Service, Health Bulletin, 2017

At the national level, DGHS has 17 medical college hospitals under its jurisdiction; these hospitals also offer dental (20 beds), homeopathic and ayurvedic services (each with 100 beds) (Health Bulletin, 2017). In addition, DGHS operates eight super-specialized teaching hospitals covering chest diseases, traumatology, CVDs, ophthalmology, cancer, kidney/urology, neuromedicine and mental health. All of these facilities are located in Dhaka, with the exception of the mental health hospital in Pabna. The DGFP operates two 100-bed hospitals, both in Dhaka, providing outdoor and indoor services.

The Bangabandhu Sheikh Mujib Medical University (BSMMU) has been the leading postgraduate medical institution in Bangladesh since 1998; it was later made autonomous by the Ministry of Health and Family Welfare (Bangladesh Health Sector Profile, 2010). The hospital has 1,500 beds, including 752 free beds. The hospital has 48 clinical departments, 167 cabins, and 18 operation theaters (Health Bulletin, 2017). Later, two other specialized hospitals of the Ministry – Institute for Child and Maternal Health (ICMH) and National Institute for Kidney Diseases and Urology (NIKDU) –also received autonomy.

The distribution of beds in the respective secondary- and tertiary-level hospitals by year is shown in Table 7. As can be seen, there has been a steady increase in both number of hospitals and total number of beds. In the process, there have been realignments, upgrading and opening of new specialized hospitals such as trauma centres at the upazila level and specialized centres for COPD/bronchial asthma and burn at the secondary/tertiary level.

Table 7: Distribution of beds in the secondary and tertiary hospitals by year

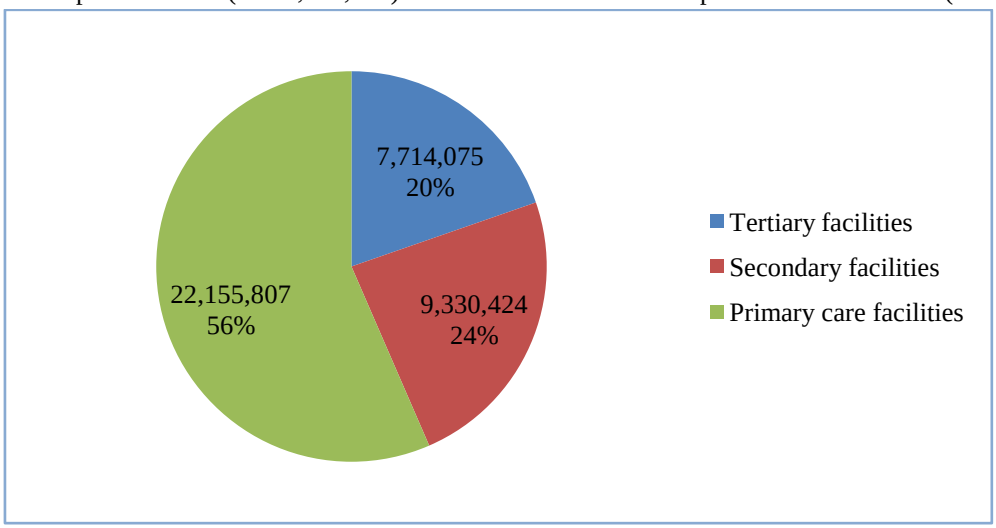
Type of facility	2007		2010		2013		2017	
	hosp	bed	hosp	bed	hosp	bed	hosp	bed
District hospital	49	4950	53	7650	53	7850	53	8900
General hospital	13	2950	9	1250	11	1350	11	1550
Infectious disease hospital	5	180	5	180	5	180	5	180
Medical/dental /alternative medicine college hospital	16	8280	17	10 005	22	11 960	20	14113
Specialized hospital affiliated with post-graduate institutes	7	1914	7	2114	7	2300	11	3034
Specialized hospital (other)	1	500	2	500	2	750	5	1050
Chest disease/TB hospital	11	550	12	546	13	816	13	816
Leprosy hospital	3	130	3	130	3	130	3	130
Specialized centres	---	---	3	150	3	200	5	100

Other hospital	3	525	6	305	6	305	1	100
Proposed new hospital			4	0	2	0		
Total	108	19 979	121	22830	126	26841	127	29973

Source: Bangladesh Health Bulletins 2007, 2010, 2013, 2017

As of June 2016, the DGHS provided registration to 14,488 private hospitals, clinics, and diagnostic centers in Bangladesh. The number of registered private hospitals and clinics is 5,622 and that of registered private diagnostic centers is 9,123. The total number of beds in these registered private hospitals and clinics is 48,725.

Figure 2: Distribution of patient- visits (N=39,200,310) in 2016 in different tiers of public health facilities (total facilities=514)



Source: District Health Information Software 2 Central Database, DGHS

4.5. Health workforce situation at the DGHS

The health workforce situation at the DGHS is summarized in Table 8. Out of 1,02,976 sanctioned posts under the DGHS, more than one-third (39.88%) are of Class III category; physicians (Class I) comprise 19.05%, Class II 21.44%, and Class IV employees comprise the rest 19.27% . Of the available 75,105 health personnel, 39.66% are of Class III, 21.49% are doctors (Class I), 20.82% are of Class II, and 17.82% are of Class IV. The Class I non-doctors comprise 0.36% of the sanctioned posts and 0.21% of the available staff. Table 8 also shows that 27,871 sanctioned posts remained vacant as of 2017, which constituted 26.9% of the total sanctioned posts.

Table 8: No. of sanctioned, filled-up and vacant posts (Rev. & Dev.) under the DGHS

Category of post		Sanctioned post	Filled -up post	Vacant
Class I	Doctors	24,989	20,602	4,387
	Non-Doctors	466	201	265
Class II		28,122	19,960	8,162
Class III		52,304	38,029	14,275
Class IV		25,277	17,085	8,192
Total		131,158	95,877	35,281

Source: Health Bulletin, 2017 MOHFW

Like most developing countries this crisis in health workforce poses major barriers to achieving health-related goals and objectives in Bangladesh. There are only 0.58 health workers in Bangladesh for every 1000 people, only 0.3 nurses and midwives for every 1,000 people. There is not yet a cadre of qualified midwives working in Bangladesh. The doctor to population ratio is 1 per 1,500 people in urban areas, whereas it is 1 per 15,000 in rural areas. These figures made Bangladesh included on a WHO list of 57 countries facing an acute health human resources (HHR) crisis (Islam et.al, 2014).

Vacancies exist in health workforce in secondary and tertiary facilities as well. 54% positions of doctors are vacant under family planning directorate, while this vacancy is 28% under health services directorate. 41% positions of nurses and 21% positions of medical technologists are now fallen vacant (Islam et.al, 2014). Table 9 shows the present workforce situation of our health service department.

Table 9: Statistics of workforce in Health Care Department

Name of authorities	Sanctioned Post	Filled-up post	Vacant Post	Retention temporary post yearly)
MOHFW	324	154	170	-
Directorate General of Health Services (DGHS)	1,02,490	75,384	27,106	23,501
Directorate General of Drug Administration (DGDA)	430	340	90	101
Health Engineering Department (HED)	619	491	128	195
Directorate General of Nursing and Midwifery (DGNM)	34,599	26,998	7,601	15,905
National Electro-medical Equipment Maintenance Workshop and Training Center (NEMEW & TC)	95	63	32	10
Transport Equipment Maintenance Organization (TEMO) personnel	75	50	25	-
Health Economics Unit (HEU)	29	24	5	14
Total	**1,38,661**	**1,03,504**	**35,157**	**39,726**

Source: Annual report, 2017-18, MOHFW

5. HEALTH WORKFORCE STATISTICS IN SOME ASIAN COUNTRIES

In the community, community health workers density is 13.6 workers per 10,000 populations in rural Bangladesh; 4.3 health workers are from government and 9.3 are from NGOs. The average proportion of community health workers trained in essential newborn care is 5.2 per 10,000 population; among them government and NGO ratio is 1.2:3.9 (Islam et.al, 2014). Table 10 shows a brief statistics of health personnel among some Asian countries including Bangladesh in 2014.

Table 10: Health Personnel per 10,000 population, 2014

Country	Physicians	Nurses & Midwives	Physicians, nurses and midwives	Doctor: Nurse ratio
DPR Korea	27.6	40.7	68.3	1.5
Maldives	14.2	50.4	64.6	3.5
Thailand	3.9	20.8	24.7	5.3
India	7.0	17.1	24.1	2.4
Srilanka	6.8	16.4	23.2	2.4
Myanmar	6.1	10.0	16.1	1.6
Indonesia	2.0	13.8	15.8	6.9
Bhutan	0.7	9.8	12.4	3.8
Nepal	1.7	5.0	6.7	2.9
Bangladesh	3.6	2.2	5.8	0.6

Source: WHO, 2014

Bangladesh is facing a critical health workforce crisis. In 2011, there was less than 1 health worker (doctors, nurses and midwives) per 1000 population. The figure recommended by the WHO to achieve 80% coverage for key essential interventions is 23 per 1000. There is a significant opportunity to increase access to quality health services by strengthening the number and capacity of doctors, nurses and midwives. There is a growing unqualified private sector, which is the first line of care for the majority of the rural population. Approaches to improving the quality of care provided by this sector, including improved monitoring and regulation, are needed.

6. CONCLUSION

Bangladesh is one of the most densely populated developing countries where most of the people are living in rural areas. There is a huge disparity in health care service and distributions between rural and urban areas. People are also suffering due to lack of medical expertise, medicines and health care facilities. Bangladesh cannot provide minimal health care service to the all people due to insufficient number of doctors, health care professionals and medical services. Although there are many clinics and hospitals are found in the rural and suburban areas but they are often ill-equipped. The inadequate infrastructure makes it more difficult to provide health care in rural and remote areas at the right time.

Thus, in order to achieve the SDGs and also to comply with the commitments of the current government for ensuring improved quality and access to healthcare facilities in the country, it is high time to get over the existing inefficiencies and irregularities engulfing the health care sector of Bangladesh. Moreover, the disparity in the urban-rural health services on offer should also be mitigated in order to

enhance the overall health standards. This desperate situation demands immediate attention from policy makers.

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