

Universal Health Coverage (UHC)



Universal Health
Coverage

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Definition of health

- ❑ The World Health Organization's definition of health is “a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity.”
- ❑ Governments have a responsibility for the health of their peoples which can be fulfilled only by the provision of adequate health and social measures
- ❑ To be completely healthy, **we must be healthy in four dimensions-**
 - ✓ **Material (physical) body**
 - ✓ **Emotional and Mental**
 - ✓ **Spiritual**
 - ✓ **Social**



Health and Development

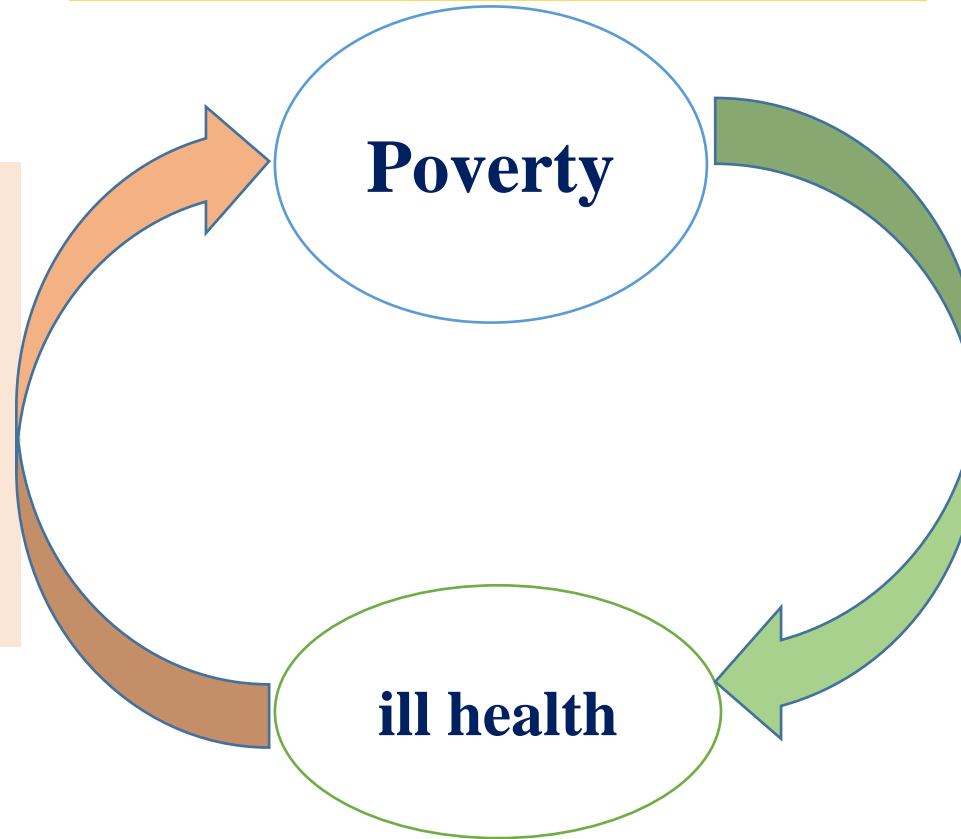
- ❑ Better health is central to human happiness, well-being and productivity
- ❑ Better health makes an important contribution to economic progress
- ❑ Good health boosts labor productivity, educational attainment and income, and so reduces poverty.
- ❑ Better health enhances reducing sickness absence, and decreasing morbidity or increasing longevity, resulting in a longer career
- ❑ Ill health or injured reduces households income, reduces consumption and increases health care costs

Poverty and ill Health: The vicious cycle

The vicious cycle

- Ill health leads to poverty
- Poverty leads to ill-health

- Diminished quality of life
- Loss of wage
- Reduced productivity
- Diminished household savings
- Reduction in household assets
- Greater vulnerability to catastrophic illness



- Increased personal and environmental risk
- Increased malnutrition
- Less access to knowledge information
- Diminished ability to access care

Source: Bloom DE et al (2008)

Sustainable Development Goals (SDGs)

- ❑ The Sustainable Development Goals (SDGs), are the blueprint to achieve **a better and more sustainable future for all.**
- ❑ The **Sustainable Development Goals** also known as the Global **Goals**, were adopted by all **United Nations Member States in 2015** as a universal call to action to end poverty, protect the planet and ensure that all people enjoy peace and prosperity by 2030.
- ❑ At its heart are the **17 Sustainable Development Goals (SDGs)**, which are an urgent call for action by all countries - developed and developing - in a global partnership
- ❑ More info: <https://www.un.org/sustainabledevelopment/sustainable-development-goals/>



Sustainable development goals (SDGs)



3 GOOD HEALTH AND WELL-BEING

Ensure healthy lives and promote well-being for all at all ages

One of core targets of SDG3 is to achieve universal health coverage (UHC)- a priority objective of World Health Organization



Universal Health Coverage

According to **World Health Organization,**

Universal Health Coverage (UHC) means that everyone in the population has access to appropriate promotive, preventive, curative and rehabilitative health care when they need it and at an affordable price.

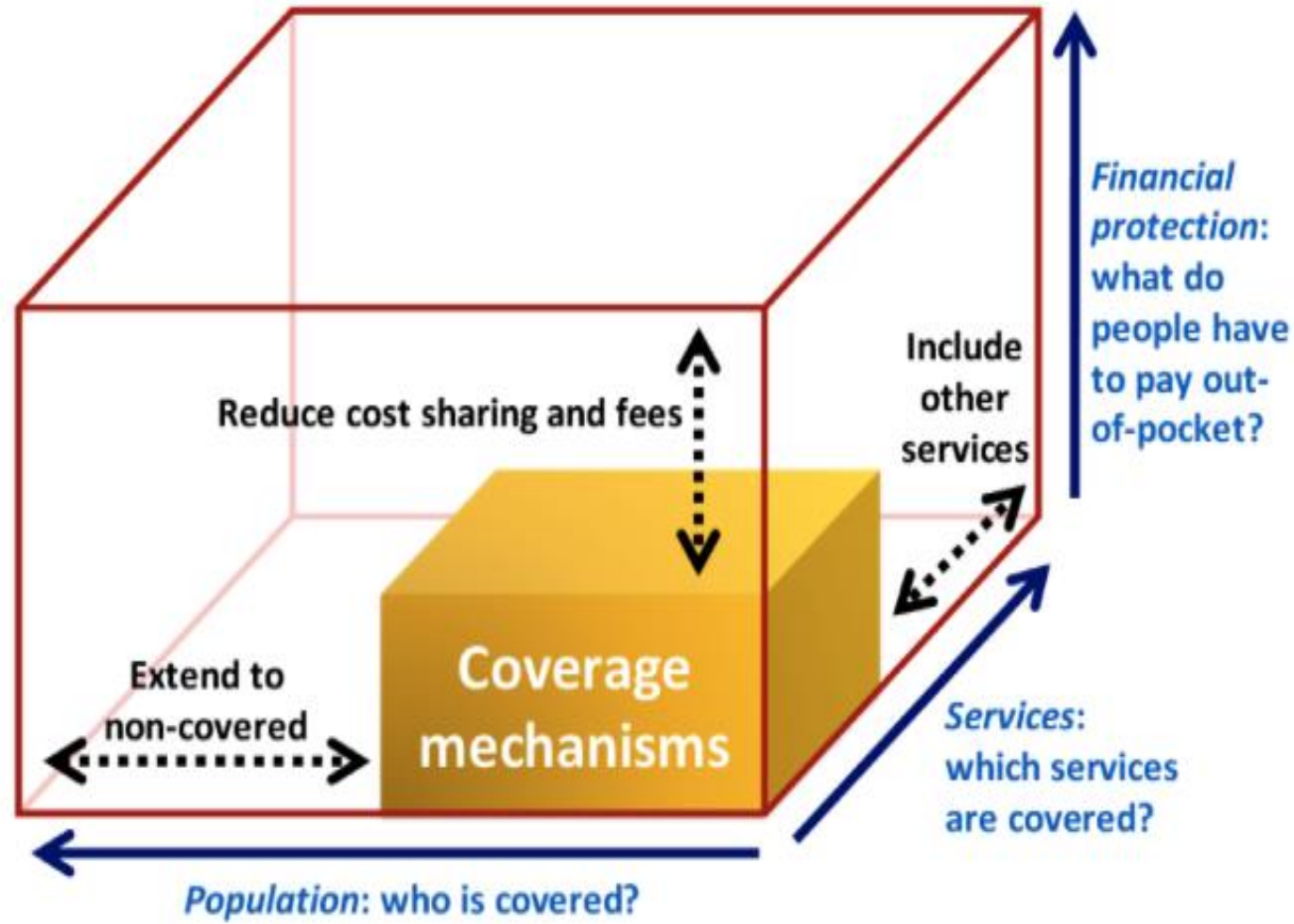


Universal Health Coverage (UHC)



Universal health coverage is defined as ensuring that **all people have access to needed health services** (including prevention, promotion, treatment, rehabilitation and palliation) of sufficient quality without being exposed to **financial hardship**

Towards universal coverage



Universal health coverage is defined as ensuring that **all people** have **access to needed health services** (including prevention, promotion, treatment, rehabilitation and palliation) of sufficient quality without being exposed to **financial hardship**

Achievement of UHC

- **No single formula –**
- Depends on the country context
- Requires multiple policies on financing and other areas of health system;
- Building effective service delivery capacity is critical;
- More than health financing, depends how health system functions.



Three UHC related objectives

- ❑ Equity in access to health services - those who need the services should get them, not only those who can pay for them;
- ❑ The quality of health services is good enough to improve the health of those receiving services; and
- ❑ Financial-risk protection - ensuring that the cost of using care does not put people at risk of financial hardship.



Funding healthcare – Who & How?

Issues →	Who are to be funded?	Access of care, How	How to be funded?
Target ↓			
POPULATION 168.82 MILLION (2022)	Poor Below Poverty Line 24.3%		
	Informal sector 55-60%		
	Formal sector 13-15%%		

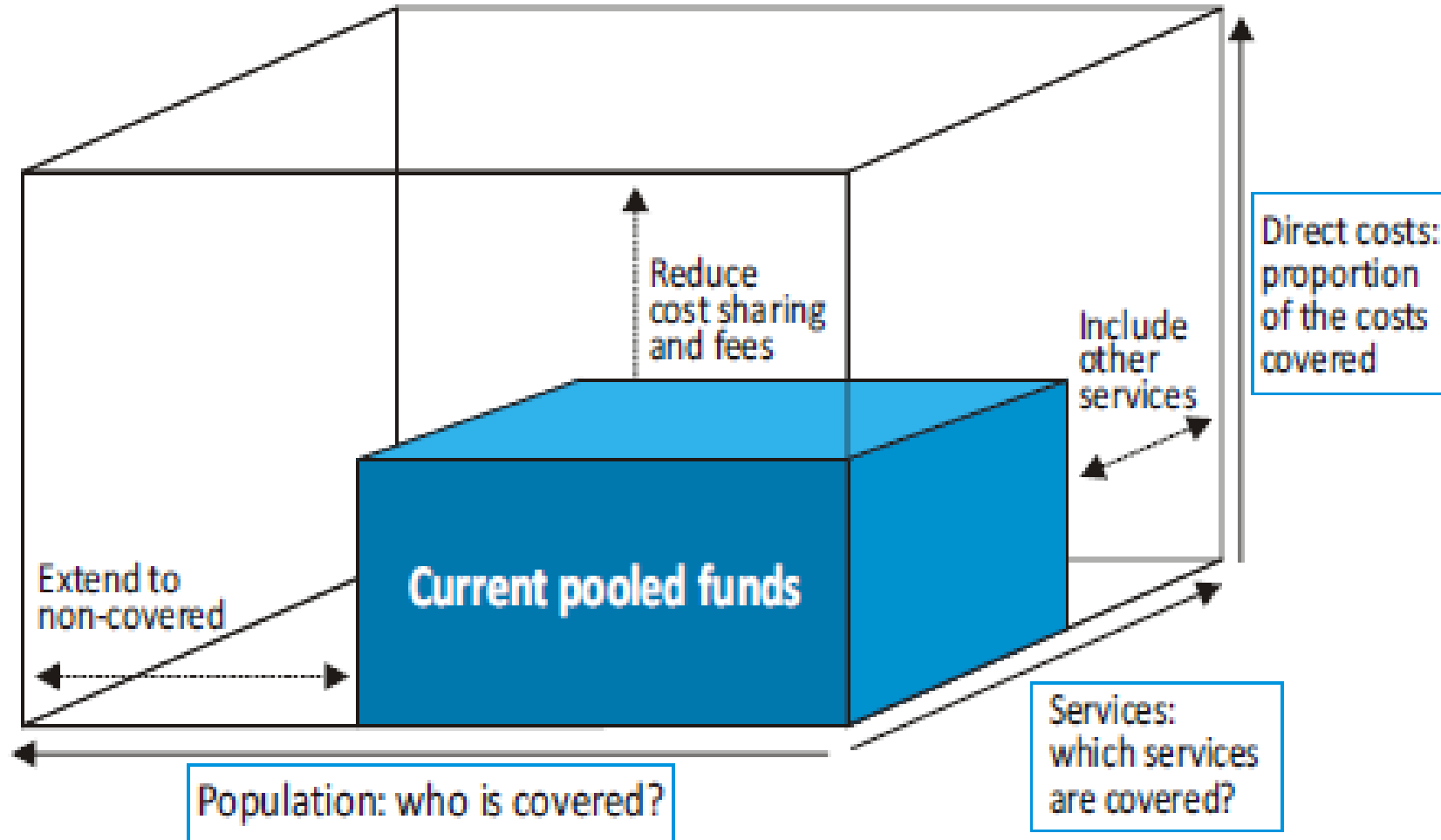
What will be funded?

- Promotive care
- Preventive care
- Curative care
- Rehabilitative care



Universal Health Coverage (UHC) BOX

Three Dimensions of Coverage Expansion



Health System in Bangladesh

- ❑ A health system consists of all organizations, people and actions whose primary intent is to promote, restore or maintain health.
- ❑ There are **six building blocks** for strengthening of the health system in a country (*e.g., health service delivery, workforce, information, products, financing and stewardship*)
- ❑ Current status and future challenges of the health system in Bangladesh can be conceptualized within the gamut of the six building blocks

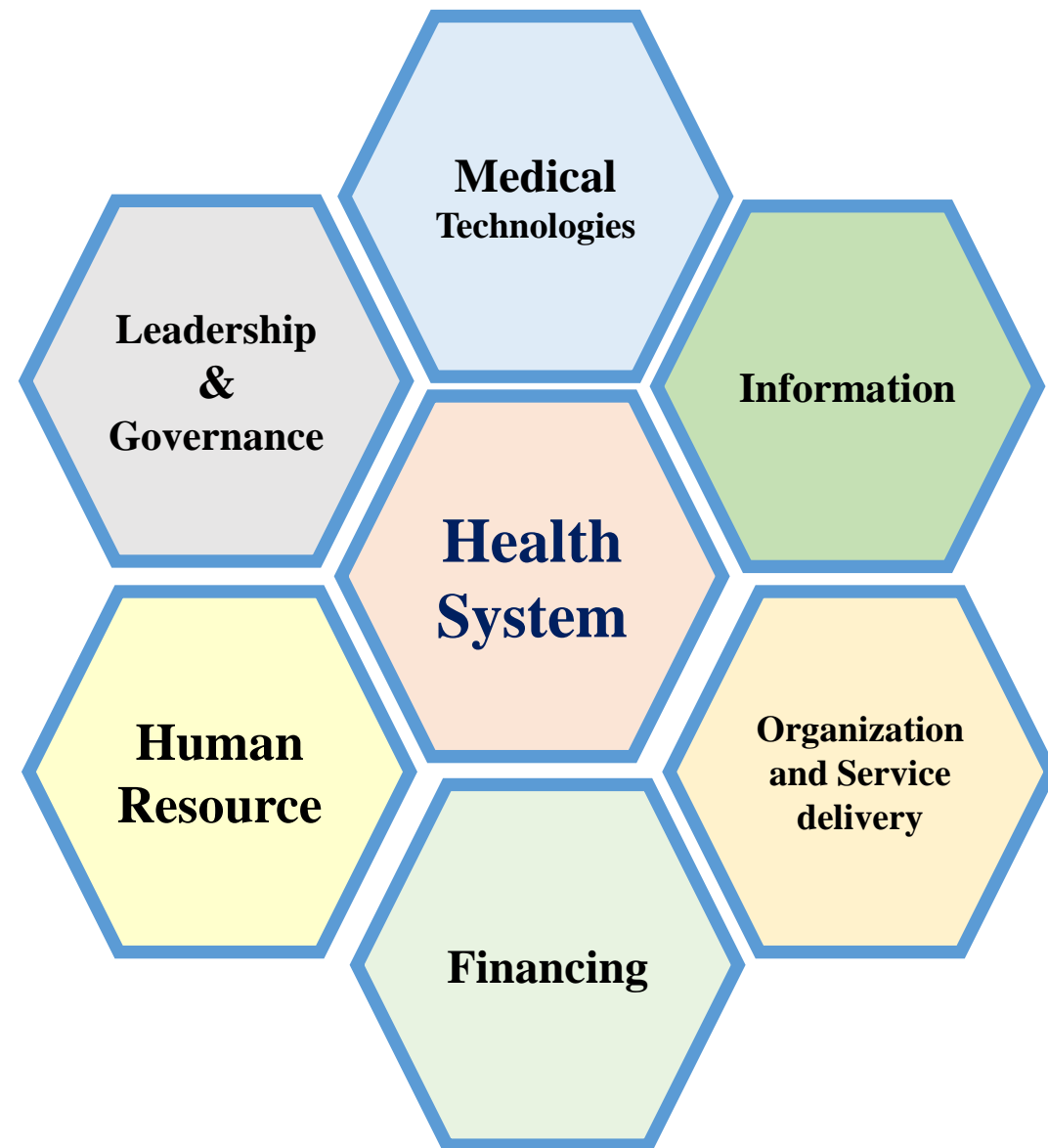


Figure: Health System Building Blocks (Source: WHO)

Pluralistic Health System in Bangladesh

- ❑ The health system in Bangladesh is described as **pluralistic** in that community-level and facility-based services are delivered by the government, non-governmental organisations (NGOs), and private for-profit providers.
- ❑ This **pluralism** is thought to have contributed to Bangladesh's successes in **improving health outcomes**
- ❑ The pluralistic character of the health system can be captured by service **utilization** data
- ❑ The private health care sector is an important component of the national health care system of Bangladesh, providing services to those sections of **the population who can afford the services and are ready to pay for them**

Table 9: THE by Financing Schemes 1997-2020 (million Taka)

Year	Government schemes	Voluntary health insurance schemes	Non-profit institution/NGO financing schemes	Corporations, autonomous bodies and private companies	Out-of-pocket expenditure excluding cost-sharing	Rest of the World Voluntary Schemes	Total Health Expenditure (THE)
1997	16,887	22	468	578	26,118	2,690	46,763
1998	17,856	25	537	687	29,089	2,715	50,909
1999	18,807	28	692	719	32,548	4,034	56,829
2000	20,626	30	770	1,156	35,893	4,534	63,008
2001	23,485	69	1,131	557	40,696	6,079	72,017
2002	25,926	75	1,411	1,043	45,828	7,276	81,559
2003	25,672	82	1,524	1,125	51,572	7,907	87,882
2004	30,310	92	1,825	1,137	57,899	9,192	100,456
2005	30,779	100	2,599	3,099	68,865	9,957	115,399
2006	39,572	113	3,257	4,376	79,889	9,908	137,114
2007	42,227	135	3,194	4,863	95,035	11,525	156,977
2008	45,887	165	3,333	10,838	108,236	13,317	181,775
2009	51,655	200	3,523	9,690	125,286	17,317	207,671
2010	62,974	247	3,707	10,922	148,549	19,641	246,040
2011	71,782	271	5,311	18,522	176,829	22,314	295,028
2012	75,386	305	5,656	16,402	203,151	27,144	328,045
2013	84,124	407	5,127	6,608	229,555	29,701	355,523
2014	93,453	441	5,933	6,116	259,581	30,614	396,137
2015	102,420	566	6,918	6,866	299,857	32,113	448,741
2016	126,638	641	8,642	9,556	354,610	30,567	530,653
2017	153,697	704	10,642	10,629	385,641	33,289	594,602
2018	188,632	787	11,263	11,261	432,067	35,646	679,657
2019	189,614	929	12,787	10,983	480,086	37,068	731,468
2020	179,742	1,097	13,427	11,420	532,740	38,922	777,347
Row %	23.1%	0.1%	1.7%	1.5%	68.5%	5.0%	100%

Table 2: Comparison of Selected Key Indicators Amongst the SAARC Nations in 2018

Countries	Current Health Expenditure (CHE) as % Gross Domestic Product (GDP)	Current Health Expenditure (CHE) per Capita in US\$	Domestic General Government Health Expenditure (GGHE-D) as % Current Health Expenditure (CHE)	Out-of-pocket (OOPS) as % of Current Health Expenditure (CHE)
Bangladesh	2.3%	\$42	17%	74%
BNHA-CHE	2.7%	\$45	21%	71%
BNHA-THE	3.0%	\$50	22%	64%
Afghanistan	9.4%	\$50	5%	78%
Bhutan	3.1%	\$103	80%	13%
India	3.5%	\$73	27%	63%
Maldives	9.4%	\$974	71%	21%
Nepal	5.8%	\$58	25%	51%
Pakistan	3.2%	\$43	36%	56%
Sri Lanka	3.8%	\$157	41%	51%

Source: Global Health Expenditure Database, WHO website, BNHA-6-CHE estimates 2018

Table 8: Public and Private THE and its Share in GDP 1997-2020

Year	THE Million Taka	Public Million Taka	Private Million Taka	THE as % of GDP	Public as % of GDP	Private as % of GDP
1997	46,763	16,887	29,876	2.3	0.82	1.45
1998	50,909	17,856	33,053	2.2	0.79	1.46
1999	56,829	18,807	38,021	2.3	0.76	1.54
2000	63,008	20,626	42,382	2.3	0.77	1.58
2001	72,017	23,485	48,532	2.5	0.81	1.67
2002	81,559	25,926	55,633	2.6	0.82	1.77
2003	87,882	25,672	62,210	2.5	0.74	1.79
2004	100,456	30,310	70,145	2.6	0.79	1.83
2005	115,399	30,779	84,620	2.7	0.72	1.98
2006	137,114	39,572	97,543	2.8	0.82	2.02
2007	156,977	42,227	114,751	2.9	0.77	2.09
2008	181,775	45,887	135,888	2.9	0.73	2.16
2009	207,671	51,655	156,016	2.9	0.73	2.21
2010	246,040	62,974	183,066	3.1	0.79	2.30
2011	295,028	71,782	223,247	3.2	0.78	2.44
2012	328,045	75,386	252,659	3.1	0.71	2.39
2013	355,522	84,124	271,398	3.0	0.70	2.26
2014	396,137	93,453	302,685	2.9	0.70	2.25
2015	448,741	102,420	346,321	3.0	0.68	2.28
2016	530,653	126,638	404,016	3.1	0.73	2.33
2017	594,602	153,697	440,905	3.0	0.78	2.23
2018	679,657	188,632	491,024	3.0	0.84	2.18
2019	731,468	189,614	541,854	2.9	0.75	2.14
2020	777,347	179,742	597,605	2.8	0.66	2.18

Figure 19: THE and Per-Capita THE by Division 2020

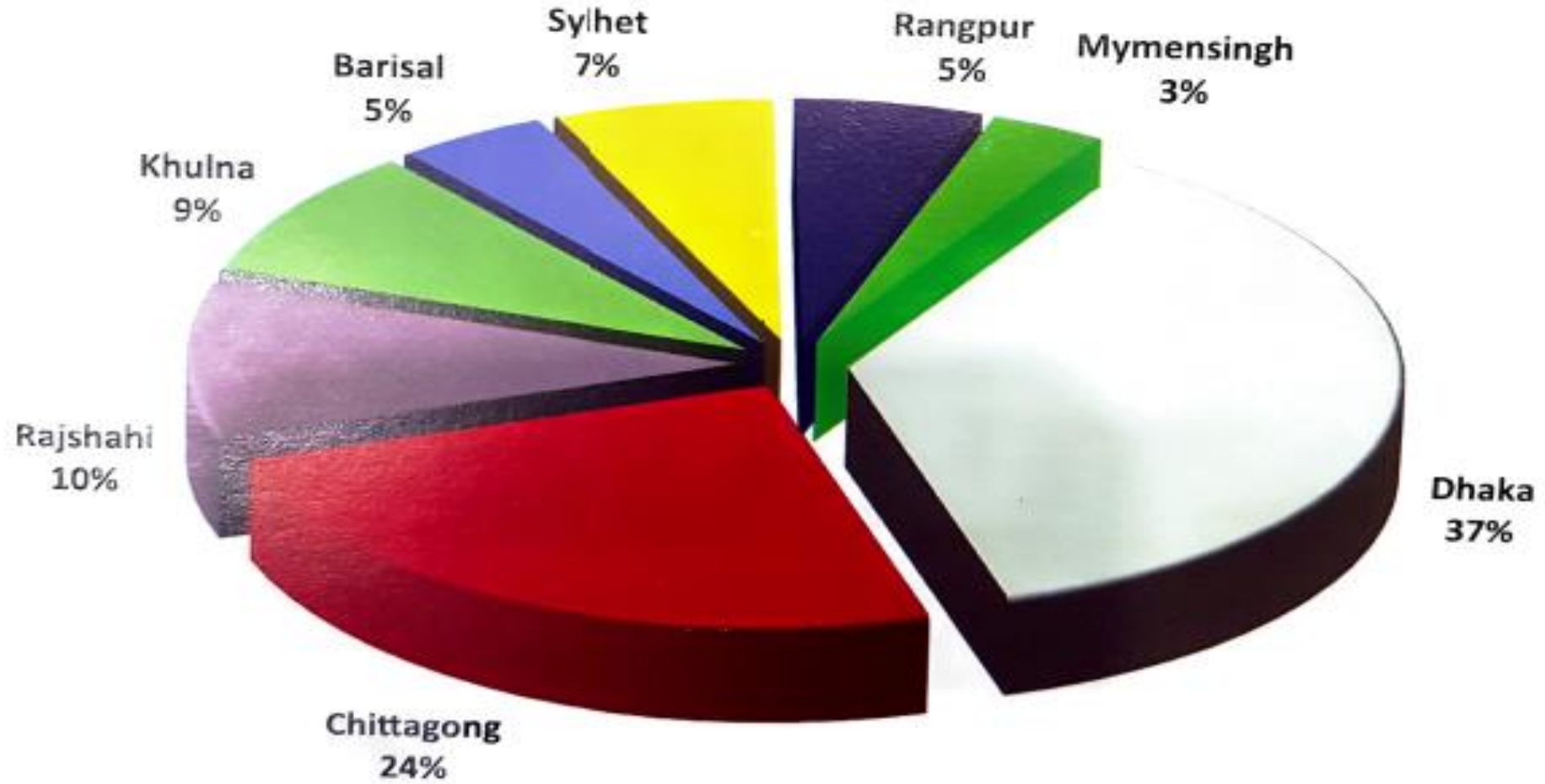
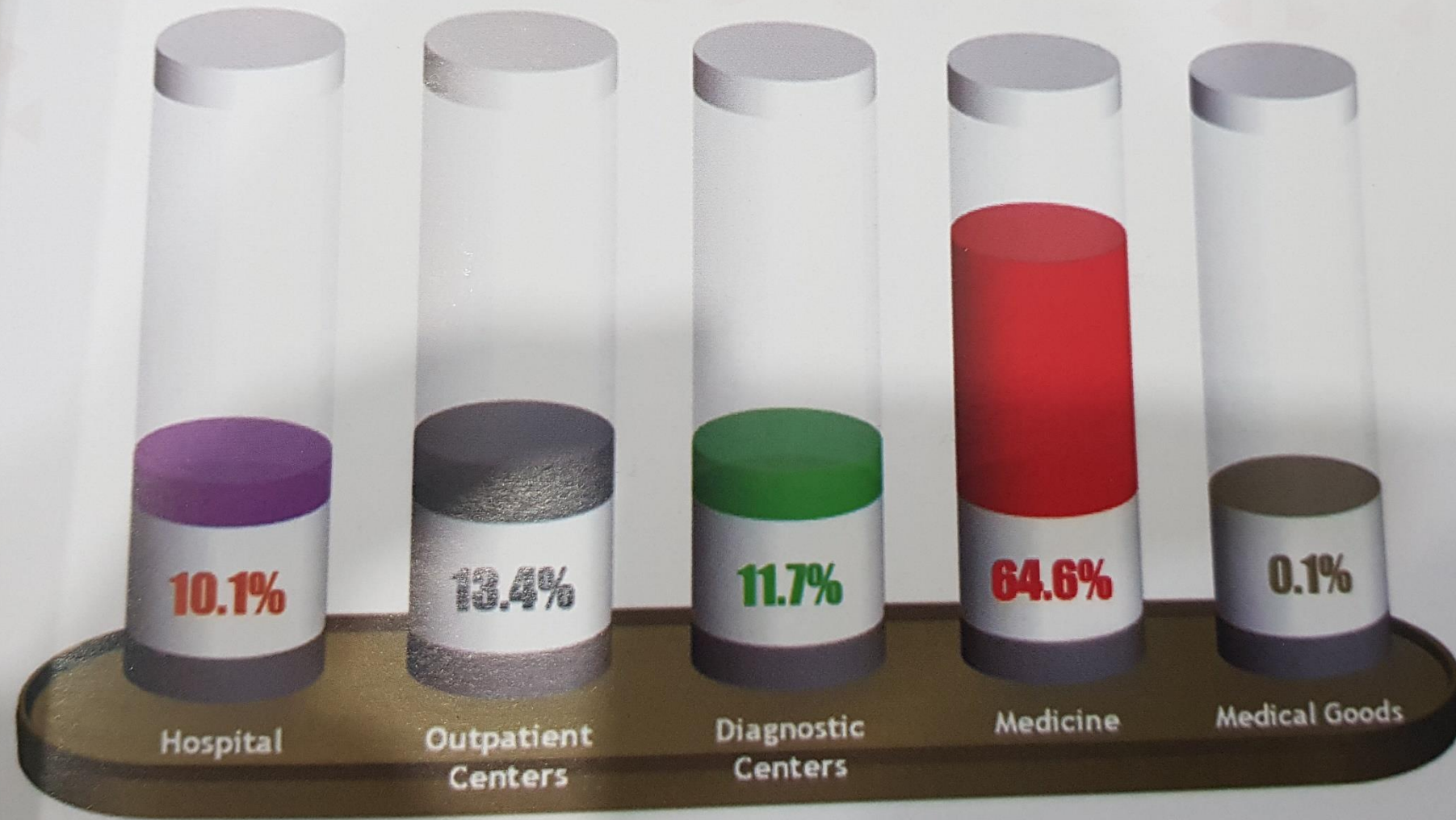


Figure 13: Out-of-Pocket Expenditure by Providers 2020



RESEARCH ARTICLE

Out-of-pocket payment for healthcare among urban citizens in Dhaka, Bangladesh

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Abstract

Objectives

Out-of-pocket (OOP) payment is the major payment strategy for healthcare in Bangladesh, and the share of OOP expenditure has increased alarmingly. Dhaka is recognised as one of the fastest-growing megacities in the world. The objective of this study is to capture the self-reported illnesses among urban citizens and to identify whether and to what extent socio-economic, demographic and behavioural factors of the population influence OOP healthcare expenditures.

Subject and methods

This study utilises cross-sectional survey data collected from May to August 2019 in urban Dhaka, Bangladesh. A total of 3,100 households were randomly selected. Simple descriptive statistics including frequencies, percentage, mean (95% CI), median and inter-quartile range were presented. Bivariate analysis and multivariate regression models were employed.

Results

We observed that acute illnesses (e.g., fever, flu/cough) were dominant among participants. Among the chronic illnesses, approximately 9.6% of people had diabetes, while 5.3% had high/low blood pressure. The richest quintile only spent 5.2% of their household income on healthcare, while the poorest households spent approximately six times more than the richest households. We noted that various factors such as marital status, religion, source of care, access to safe water, income quintile and even the location of households had a significant relationship with OOP expenditure.

Conclusions

Our findings can serve as important source of data in terms of disease-specific symptoms and out-of-pocket cost among urban citizens in Dhaka. The people belonging to wealthier households tended to choose better healthcare facilities and spend more. A pro-poor policy initiative and even an urban health protection scheme may be necessary to ensure that

- Approximately 9.6% of people had diabetes, while 5.3% had high/low blood pressure.
- The richest quintile only spent 5.2% of their household income on healthcare, while the poorest households spent approximately six times more than the richest households

OPEN ACCESS

Citation: Sarker AR, Ali SMZ, Ahmed M, Chowdhury SMZI, Ali N (2022) Out-of-pocket payment for healthcare among urban citizens in Dhaka, Bangladesh. PLoS ONE 17(1): e0262900. <https://doi.org/10.1371/journal.pone.0262900>

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Data Availability Statement: Data is publicly available at BIDS website (<https://bids.org.bd/page/data-bank/>). Interested researchers may contact secretary, BIDS (secretary@bids.org.bd) with further in queries related to data access.

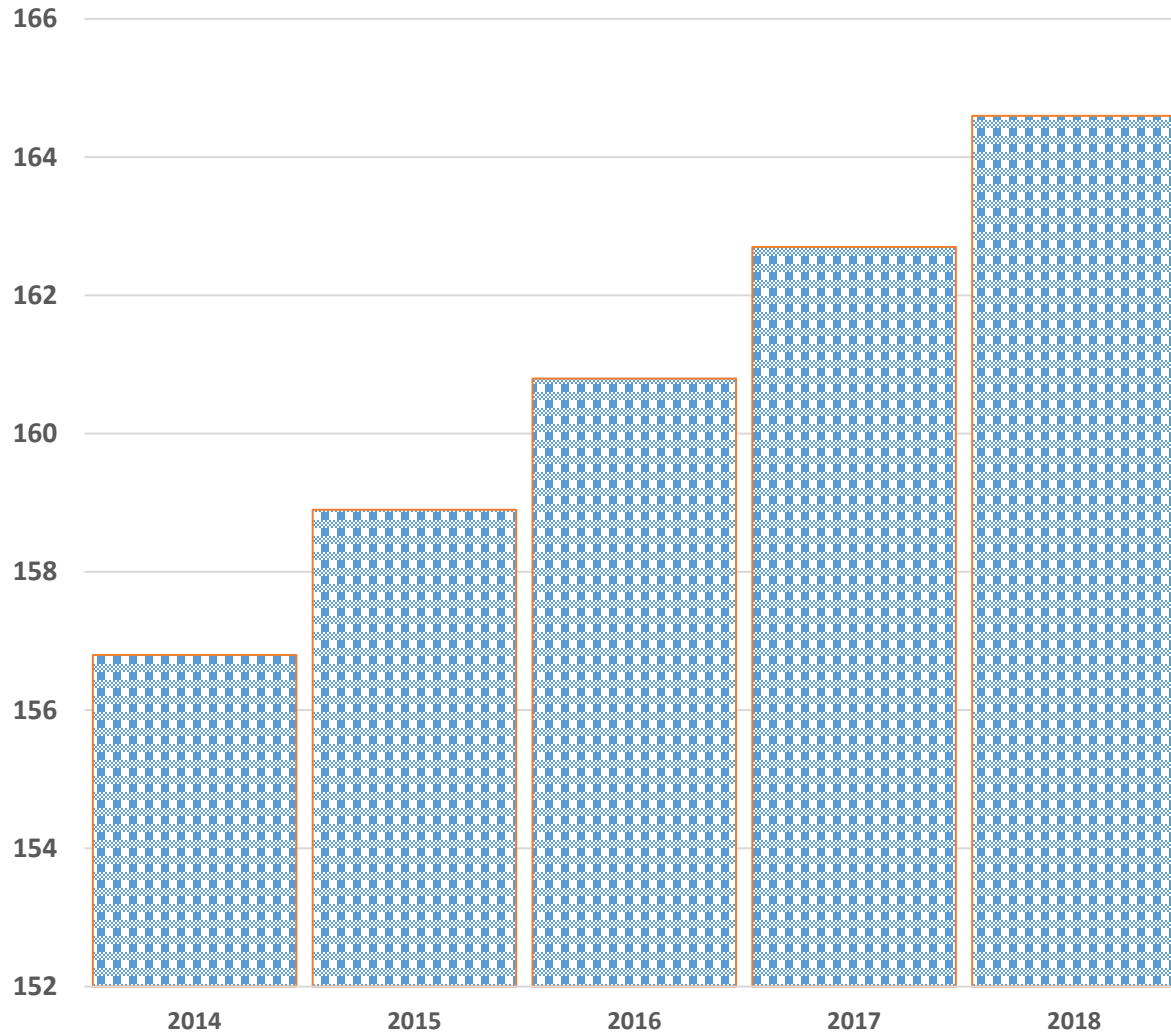
Funding: The study is funded by the Ministry of Planning, Government of Bangladesh. The authors' views expressed in this publication do not necessarily reflect the views of the BIDS or the Government of Bangladesh.

Competing interests: The authors have declared that no competing interests exist.

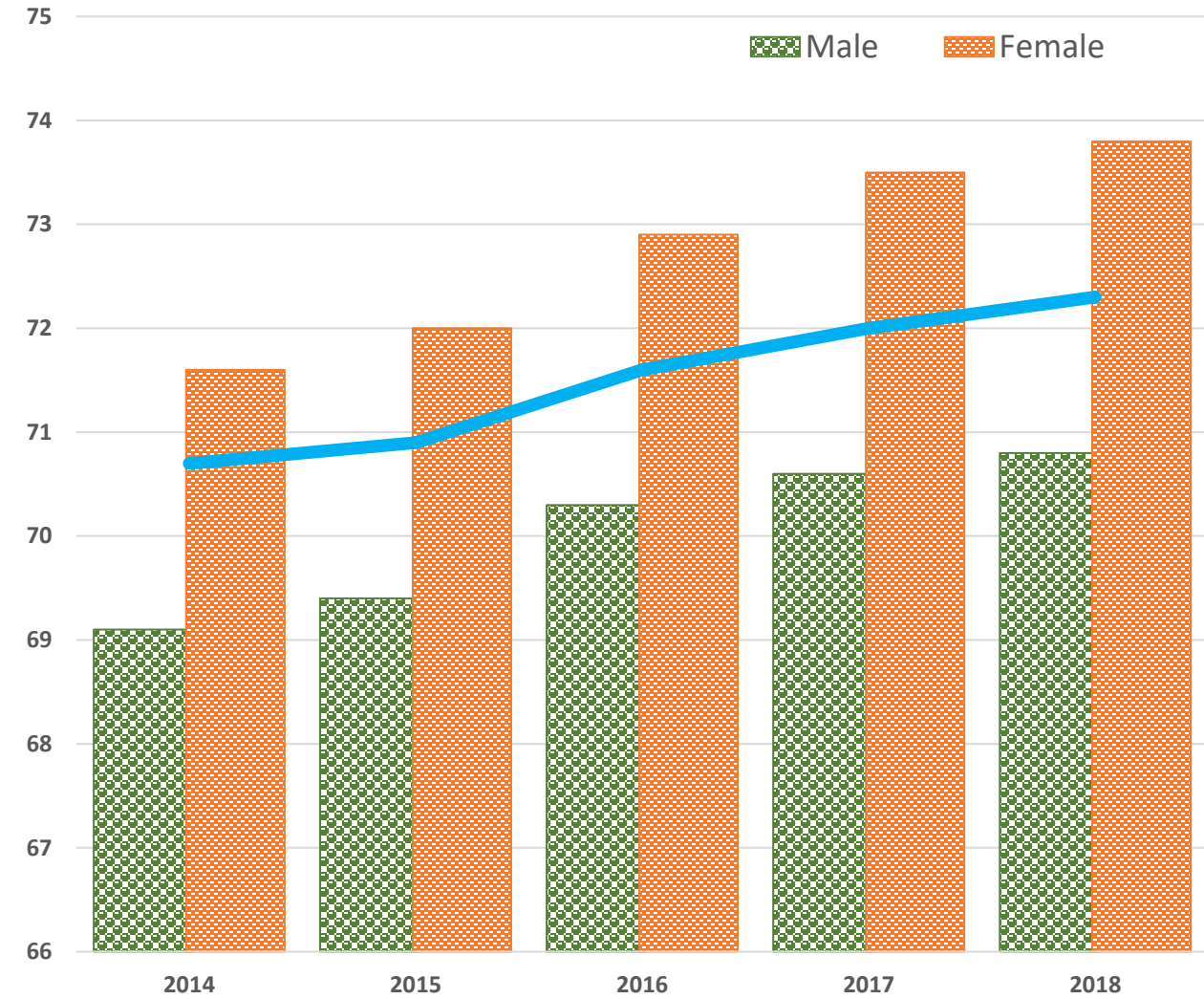


Recent Statistic : Health and population

Population (million)



Life Expectancy at birth (Years)



Sources: *Bangladesh Sample Vital Statistics 2018*



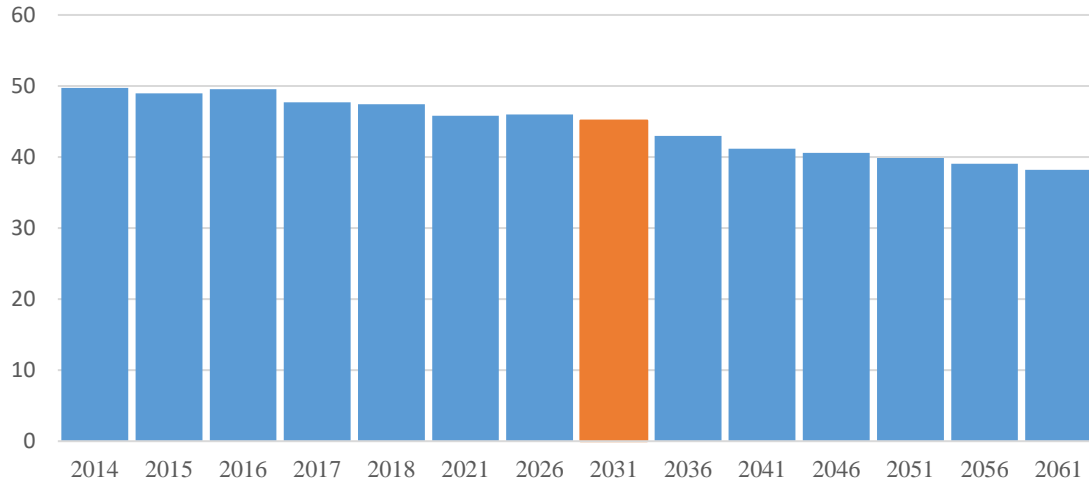
Age Specific Distribution of Population, Percentage (%)

Age-group (years)	Both sexes	Male	Female
00-14	29.3	29.5	29.2
15-49	54.4	54.1	54.8
50-59	8.3	8.2	8.3
60+	8.0	8.2	7.7

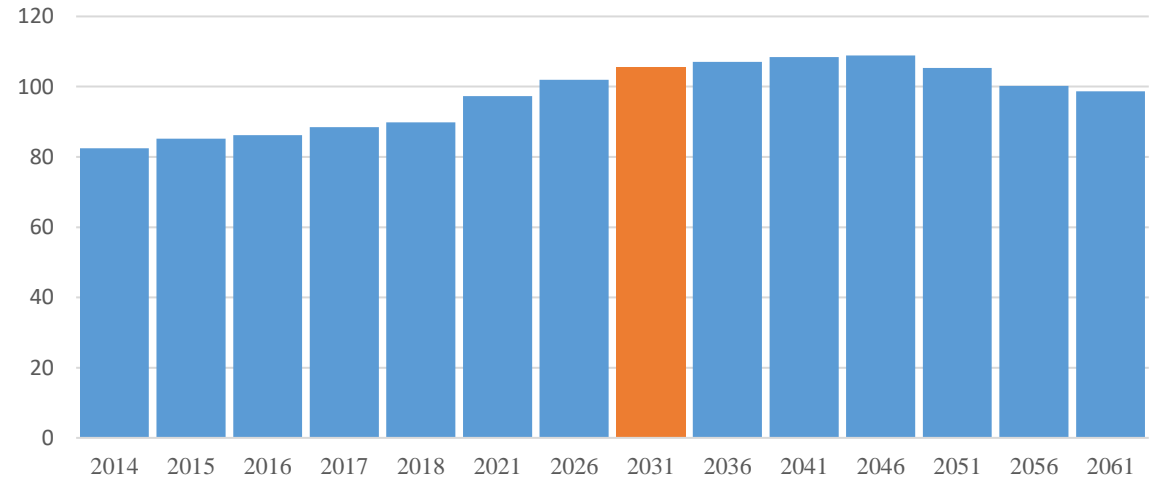
Sources: Bangladesh Sample Vital Statistics, National Health Bulletin

Age Specific Distribution of Population (Projected)

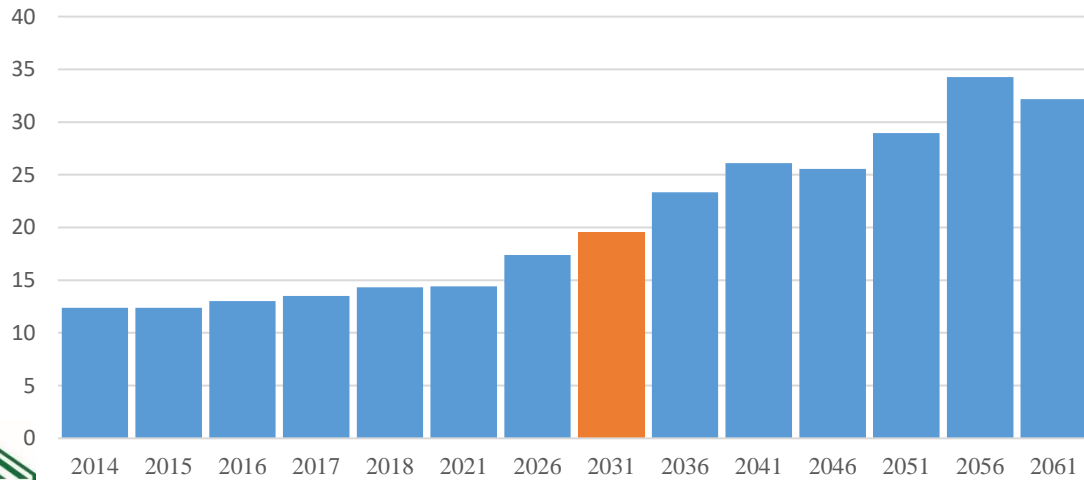
Upto 14 (million)



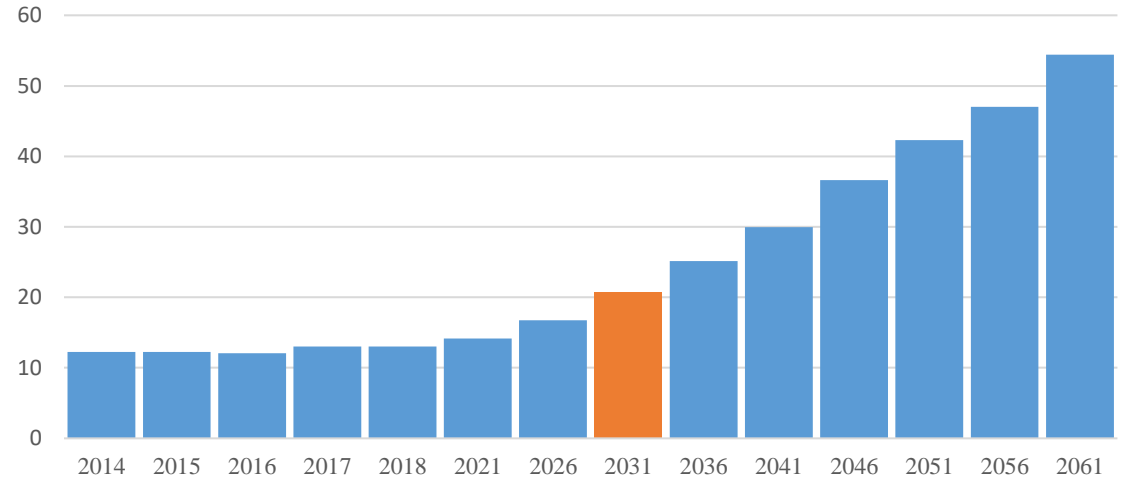
15 to 49 (million)



50 to 59 (million)



Above 60 (million)



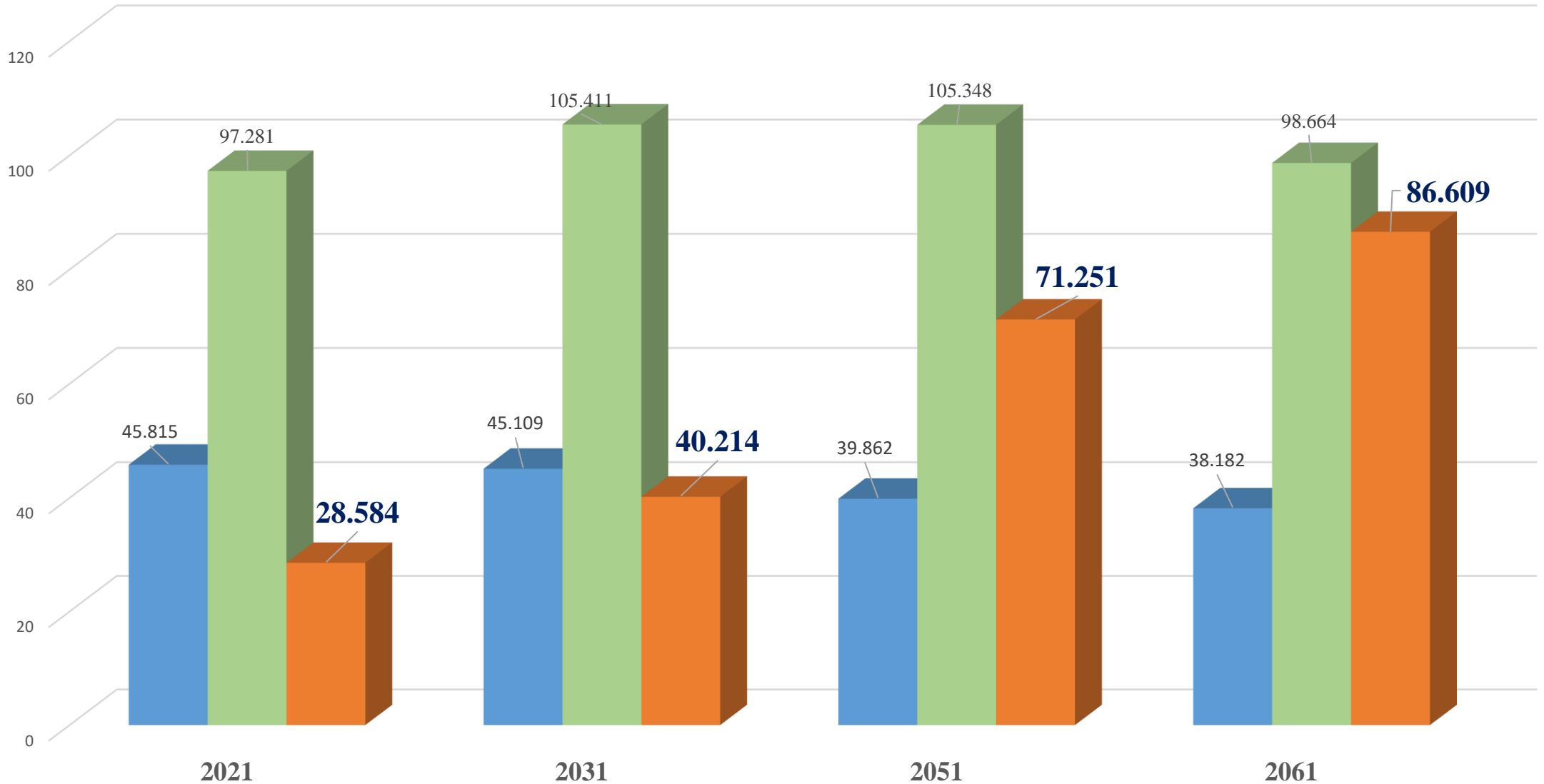
Sources: BBS_ Population projection of Bangladesh- Dynamics and Trends 2011-2061



Age Specific Distribution of Population (million)

Distribution of population (million)

■ Upto 14 ■ 15 to 49 ■ 50 and above



Sources: BBS_ Population projection of Bangladesh- Dynamics and Trends 2011-2061



RESEARCH ARTICLE

Healthcare-seeking experiences of older citizens in Bangladesh: A qualitative study

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Abstract

Despite improvements in many health indicators in the last few decades, providing access to affordable and quality healthcare for older citizen remains a considerable challenge in Bangladesh. This study aimed to understand individuals' experiences regarding their healthcare-seeking, treatment cost, accessibility and coping mechanisms for the promotion of appropriate strategies to enhance the quality of life of the older citizens of Bangladesh. A qualitative descriptive approach was used in this study. A total of 27 In-Depth Interviews (IDIs) were conducted in a district in Bangladesh with older people between January and February 2020, where gender distribution was equal. Face-to-face interviews were conducted by trained and experienced interviewers regarding healthcare-seeking and accessibility, affordability, and healthcare coping strategy. Thematic analysis was conducted to analyse the data. It was found that the health condition of the older population is not satisfactory. Most of them had been suffering from several diseases such as benign tumor, chronic kidney disease, body aches, gastric ulcers for a longer period of time. The majority of the participants were suffering from multiple non-communicable diseases while diabetes and hypertension were the foremost of all diseases. This study provides insight into the challenges of managing healthcare services for older citizens in Bangladesh. Healthcare facilities were available, but high out-of-pocket payments, lack of caregivers, and time distance created a barrier to the service provision. The findings indicated that geriatric care policy-makers and service providers should prioritize the older-friendly health infrastructures with affordable cost of treatment for the betterment of the health status of older citizens in Bangladesh.



OPEN ACCESS

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Data Availability Statement: Data are publicly available at BIDS website (<https://bids.org.bd/page/>)



Theme	Sub-Theme
1. Assessment of health status	1.1 Current Health Status <ul style="list-style-type: none"> “Almost all the respondents’ health condition were poor”
	1.2 Communicable vs. Non-Communicable Diseases <ul style="list-style-type: none"> “Communicable diseases are mostly common for each respondent”
	1.3 Long-term illness <ul style="list-style-type: none"> “Carrying illness till death”
2. Healthcare seeking pattern	2.1 Decision of choosing health facility <ul style="list-style-type: none"> “Prone to seek health care from private clinic/hospital”
	2.2 Preferable option for healthcare <ul style="list-style-type: none"> “District public hospitals are preferable than sub-district level health facilities”
3. Expectation from service provider	3.1 Quality improvement <ul style="list-style-type: none"> “Quality health care is first priority”
	3.2 Affordability and accessibility <ul style="list-style-type: none"> “Affordability and Transportation convenience play crucial role for seeking care”
	3.3 Other issues <p>“Quality of service provider and environment is also important in deciding care seeking”</p>
4. Out of pocket cost is one of the barrier in accessing healthcare	4.1 Treatment cost <ul style="list-style-type: none"> “Consultation fees should be reduced for the poor older people” “Surgery and operation costs are not affordable”
	5.1 Consequences <ul style="list-style-type: none"> “Managing health expenses is a unbearable burden for the older”
5. Coping strategies for the health care expenditure	5.2 Suggestions from the respondents <ul style="list-style-type: none"> “Multiple suggestions are carried out to mitigate healthcare expenditure”



Health-related quality of life among older citizens in Bangladesh

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Keywords:
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Older adults
EQ-5D
VAS
Bangladesh

ABSTRACT

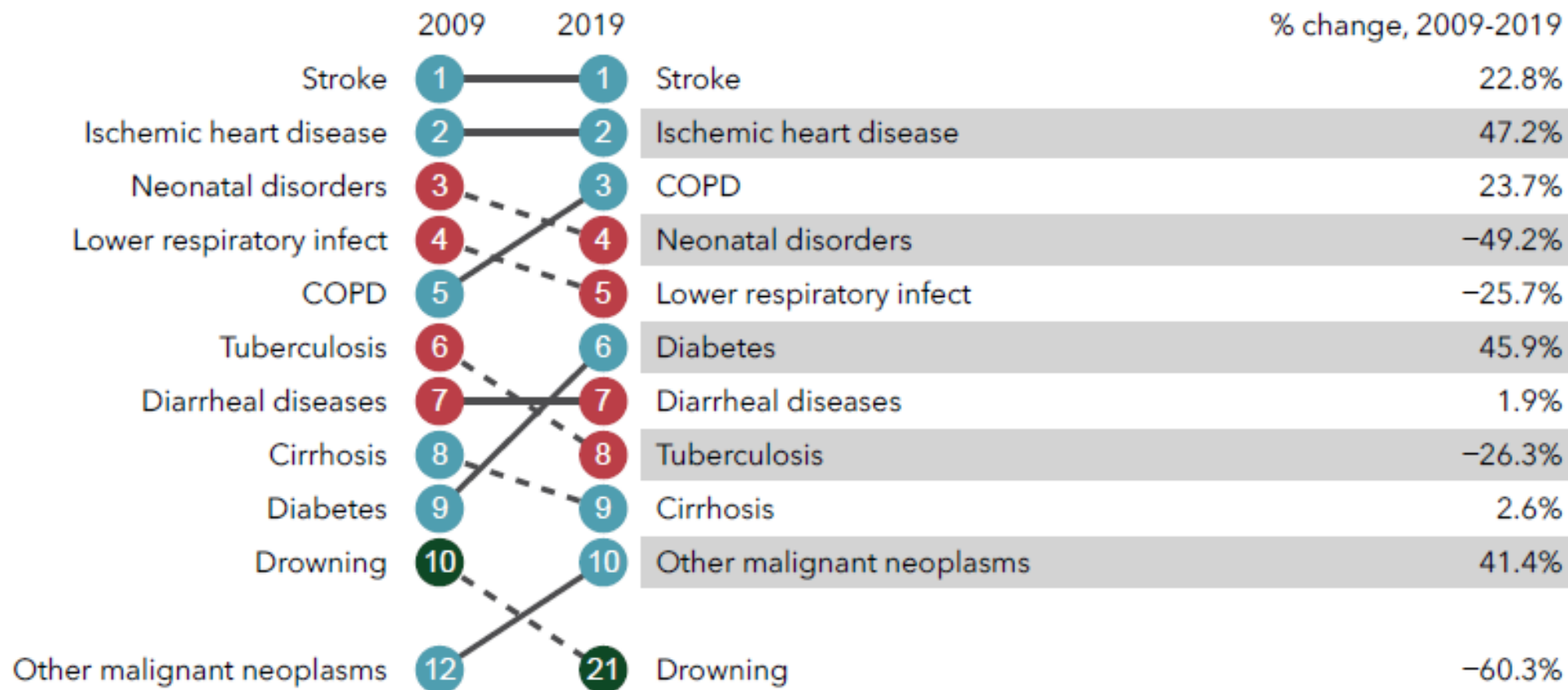
Despite improvements in many health indicators in the last few decades, providing access to affordable health care for elderly people is a major challenge in low- and middle-income countries like Bangladesh. The objective of this study was to measure the health-related quality of life (HRQoL) among older citizens in Bangladesh and to determine the factors influencing HRQoL. A cross-sectional household survey was conducted in the Tangail district of Bangladesh. The study was conducted among elderly citizens (aged 60 years or above, according to the National Policy on Elderly People in Bangladesh). Logistic and multiple regression models were used to identify the potential factors affecting the HRQoL of older citizens. A total of 585 older citizens participated in the study. The mean EQ-5D and VAS scores were 0.51 and 0.55, respectively. Most of the older citizens suffered from anxiety or depression (81.6%), followed by pain or discomfort (81.4%). The HRQoL is significantly higher for male than female older citizens ($P < 0.001$). The older citizens currently involved in day labour or business had significantly less health-related problems in the mobility ($p < 0.001$) and self-care ($p < 0.01$). Housewives were 2.17 times more likely to report health problems in the 'anxiety or depression' while less likely to suffer 'usual activities' related health problems ($p < 0.001$). It is recommended that health authorities and relevant stakeholders prioritize various programs promoting health among the elderly, such as health education, health promotion and health resources, in order to improve HRQoL among the elderly citizens in Bangladesh.

Most of the older citizens suffered from anxiety or depression (81.6%), followed by pain or discomfort (81.4%).



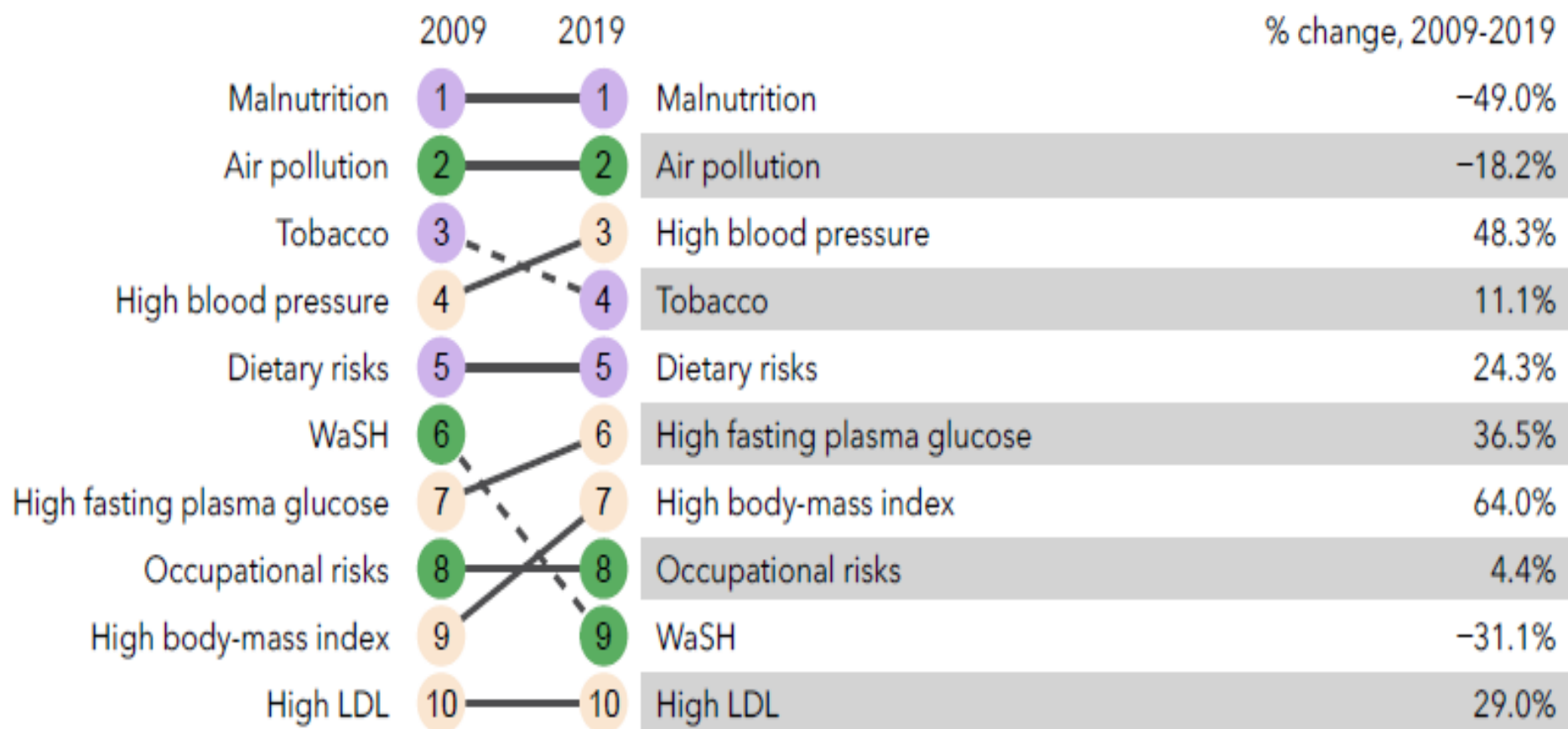
What causes the most deaths?

- Communicable, maternal, neonatal, and nutritional diseases
- Non-communicable diseases
- Injuries



What risk factors drive the most death and disability combined?

- Metabolic risks
- Environmental/occupational risks
- Behavioral risks



Progress towards Maternal and child health related Sustainable Development Goals (SDGs)

Indicators	Baseline data (year)	2017 Data , DGHS Bangladesh	Target by 2030
Maternal mortality ratio (per 100,000 live births)	181 (SVRS, 2015)	105	70
Proportion of births attended by skilled health personnel	42.1% (BDHS, 2014)	72.3% SVRS, 2017	80%
Under-five mortality rate (per 1,000 live births)	36 (SVRS, 2015)	31 (SVRS,2017)	25
Neonatal mortality rate (per 1,000 live births)	20 (SVRS-2015)	17 (SVRS, 2017)	12
Number of new HIV infections per 1,000 uninfected population, by sex, age and key populations	0.04 (Women 15-49 years: <0.1%, Men 15-49 years: <0.1%) (UNAIDS, 2016)	New case 865 (Male-639, Female-213, Hijra/Transgender-13)	0.01
Malaria incidence per 1,000 population	4.3 (MCP, 2015)	1.64 (From OP, DGHS)	0
Suicide mortality rate (per 100,000 population)	7.1 (PSD, 2015)	5.5	2.4
Proportion of women of reproductive age (aged 15-49 years) who have their need for family planning satisfied with modern methods (%)	72.6% (BDHS, 2014)	72.6% (BDHS, 2014)	100%
Adolescent birth rate (aged 10-14 years; aged 15-19 years) per 1,000 women in that age group	75 (SVRS-2015)	75 (SVRS,2017)	50
Coverage of essential health services	52 (WHO-2016)	50 (Health SDG Profile, WHO)	100
Proportion of the target population covered by all vaccines included in their national programme	78% (BDHS, 2014)		100%
Health worker density (per 10,000 population), Physician: Nurse: Health Technologist	1: 0.5: 0.2 (HRH Data Sheet, 2014 MoHFW)	1: 0.56:0.40 (HRD unit, 2017, MOHFW)“	1:03:05
Prevalence of stunting among children under 5 years of age	36.1% (BDHS, 2014)	30.79% (BDHS,2017-18)	12%
Prevalence of malnutrition (weight for height) among children under 5 years of age, by type (wasting and overweight)	a) Wasting: 14.3% (BDHS, 2014) b) Overweight: 1.6% (MICS, 2012-13)	a) Wasting: 8.38% (BDHS, 2018) b) Overweight: 1.50% (BDHS, 2018)	a) <5% b) 1.0%



National Strategy for Adolescent Health 2017-2030 (Published : December, 2016)



NATIONAL STRATEGY FOR ADOLESCENT HEALTH 2017-2030



MCH Services Unit
Directorate General of Family Planning
Ministry of Health and Family Welfare



Adolescent is defined persons between 10 and 19 years of age
(WHO 2014)

The Vision: By 2030, all adolescent boys and girls of Bangladesh, especially those who are most vulnerable, will be able to enjoy a healthy life

The Goal: By 2030 all adolescents will lead a healthy and productive life in a socially secure and supportive environment where they have easy access to quality and comprehensive information, education and services

The Time Frame: This strategy will span over a period of 14 years (2017 to 2030) in line with the Sustainable Development Goals.

Strategic Directions (SDs):

SD 1: Adolescent Sexual and Reproductive Health

SD2: Violence against Adolescent

SD3: Adolescent Nutrition

SD4: Mental Health of Adolescent

Some facts about Adolescent Health

❑ Sexual and Reproductive Health (SD1) :

- ✓ Only **12.8** percent of adolescents and youth have comprehensive knowledge on **HIV** (UNAIDS 2016)
- ✓ Highest **adolescent fertility rate** in South Asia, at 113 live births per 1000 women aged 15-19 years (BDHS 2014)
- ✓ Contraceptive Prevalence Rate (CPR) among married adolescents is **51** percent (BDHS 2014)
- ✓ The **under-five mortality rate** of children born to mothers below 20 years is **66 deaths per 1000 live births**, much higher than **49 deaths per 1000 live** births for those with mothers between the ages of 20-29 years (BMMS 2010).

❑ Violence against Adolescent (SD2)

- ✓ **42.8 percent** and **28.4 percent** ever married adolescents aged 15-19 years reported **physical** or **sexual violence** (Violence against Women Survey - BBS 2015)
- ✓ **59 percent** of women aged 20-24 years were married **before the age of 18** (BDHS 2014)
- ✓ **31 percent of adolescents aged 15-19 years have begun childbearing**, about 1 in 4 has given birth, and another 6 percent were pregnant with their first child (BDHS 2014)
- ✓ A study conducted in four districts of Bangladesh revealed that **9.8 percent of school going adolescent boys** reported experiencing **sexual violence** and for a majority of them the perpetrators were other boys from school (HDRC 2015)

About 4.2 percent school going adolescent girls reported experiencing sexual violence (HDRC 2015)



❑ Adolescent Nutrition (SD3)

- ✓ The prevalence of **thinness/underweight** (Body Mass Index less than 18.5) among married-adolescents of 15-19 years old is very high **at 31 percent** (BDHS 2014)
- ✓ Adolescents and women of reproductive age show that **stunting** and **anaemia** are also major health concerns
- ✓ The prevalence of **overweight and obesity** among married adolescents increased from 3 percent in 2007 to 7 percent in 2014 (BDHS 2014)
- ✓ Nationally, **29 percent of adolescent girls are short for their age** with notable differences between urban and rural areas at 21 percent and 30 percent respectively (FSNSP, 2013).

❑ Mental Health of Adolescent (SD4)

- ✓ There is limited data on the mental health situation of adolescents
- ✓ About 16.1 percent of the adult population (aged 18 years or older) of Bangladesh suffer from some form of mental disorder (WHO 2007)
- ✓ **Depressive symptoms** were common among **adolescents** in Bangladesh (Nasreen et al., 2013)
- ✓ More than **80 percent of depressed adolescents sought no help**, indicating the need for accessible adolescent friendly services such as community-based counselling (Nasreen et al., 2013)
- ✓ **Adolescent pregnancies** are more likely to report signs of **moderate to severe Depression** (Amin 2015)



Original Research

Determinants of adolescent maternal healthcare utilization in Bangladesh

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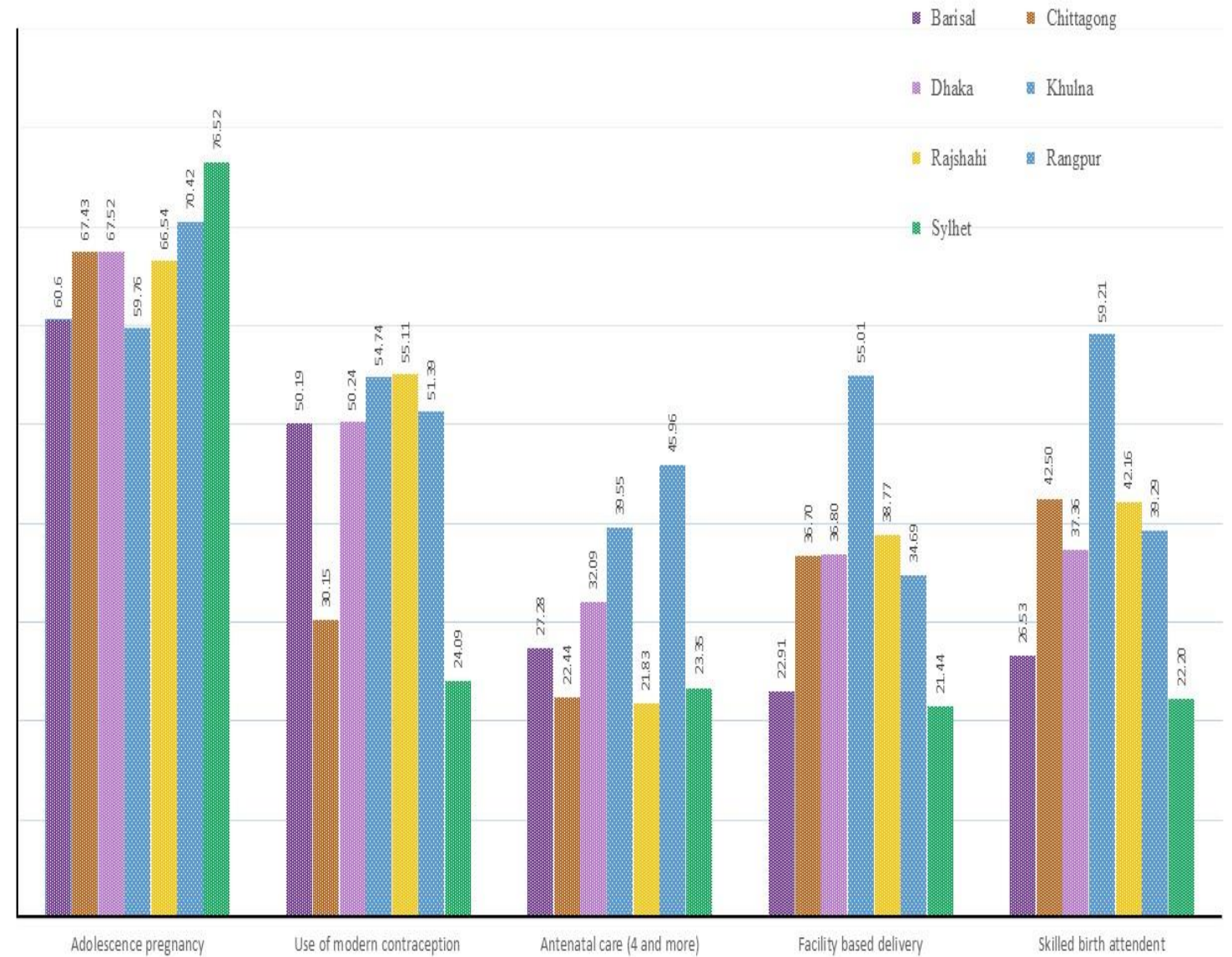
ABSTRACT

Objectives: To identify the factors associated with adolescent maternal healthcare utilization in Bangladesh.**Study design:** A secondary analysis was undertaken using the latest data set from the Bangladesh Demographic and Health Survey (2014). Data were collected from the cross-sectional survey carried out from June to mid November 2014. In total, 17,863 ever-married women aged 15–49 years were interviewed. According to the definition of the World Health Organization, 2029 of these women were adolescents and therefore eligible for inclusion in this study.**Methods:** Both bivariate and multivariate logistic regression models were used to determine the factors influencing adolescent pregnancy, use of contraception, use of antenatal care services, facility-based delivery and presence of a skilled birth attendant at the last birth. The results are presented in terms of adjusted odds ratio (OR) with 95% confidence interval (CI), at a significance level of 5%.**Results:** Maternal age, education, knowledge of menstrual regulations i.e. any procedure which disrupts the intra uterine environment, awareness of community clinic, household size, socio-economic status and administrative division were found to have a significant effect on adolescent pregnancy in Bangladesh. Sexual knowledge has a significant positive role in the use of modern contraceptives. Adolescents of low socio-economic status are significantly more likely to deliver at home compared with adolescents in the richest quintile (OR 0.26, 95% CI 0.15–0.47; $P < 0.001$). The likelihood of delivering at a health facility was higher among adolescents who had knowledge about sexually transmitted infections (OR 1.84, 95% CI 1.28–2.65; $P < 0.001$) and menstrual regulations (OR 1.41, 95% CI 1.04–1.91; $P < 0.05$).**Conclusions:** Adolescent maternal healthcare utilization was associated with a number of factors including low socio-economic status, limited reproductive knowledge (e.g. menstrual regulations, sexually transmitted infections) and geographical region. The study findings will serve to inform policy and would be beneficial for introducing need-based

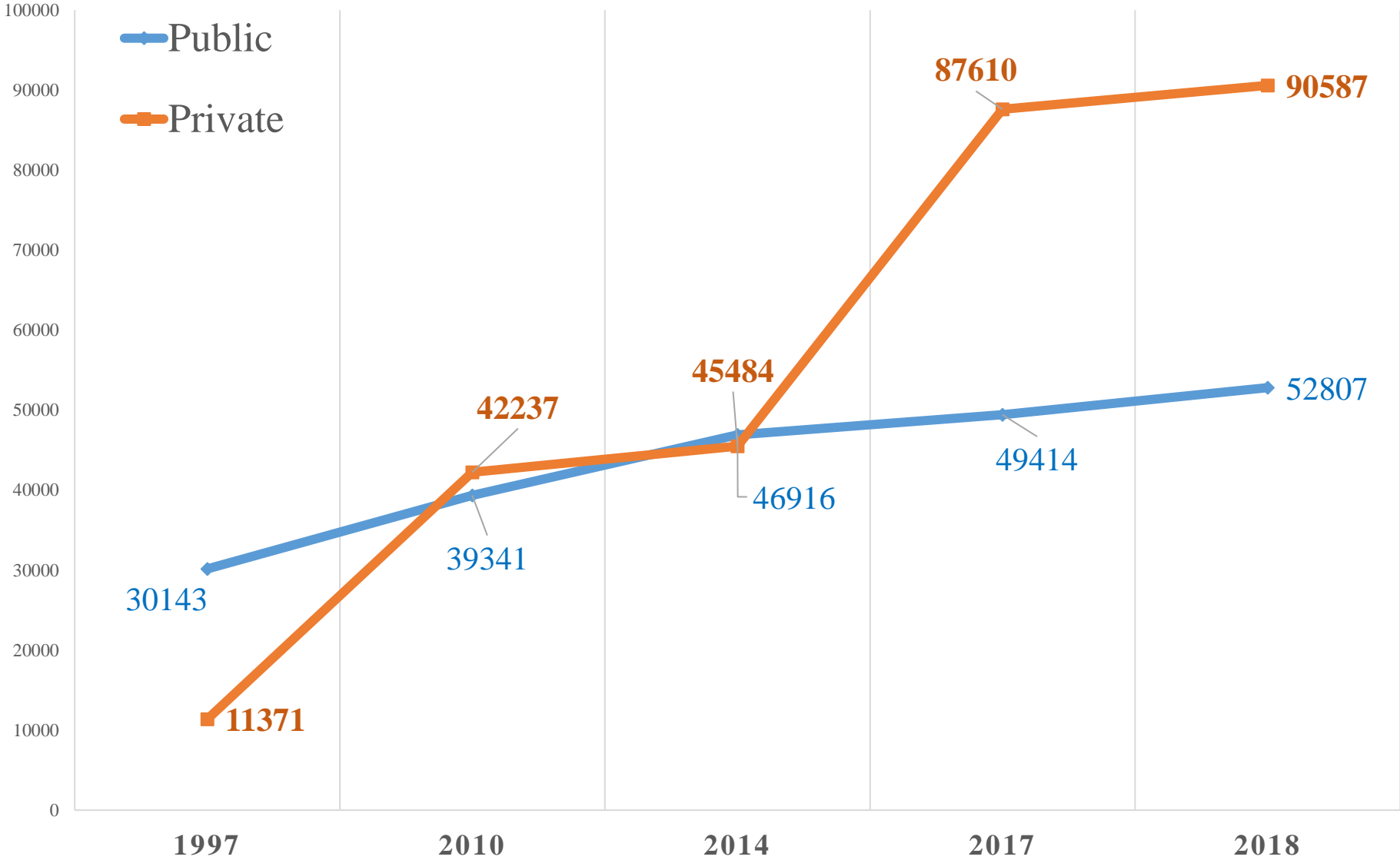
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E-mail address: arazzaque@icddr.org (A.R. Sarker).<https://doi.org/10.1016/j.puhe.2018.01.010>

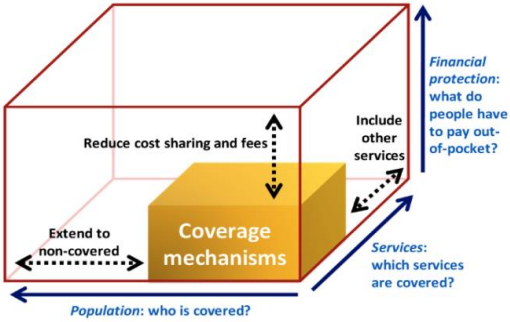
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HOSPITAL BED OVER TIME



Towards universal coverage



The three dimensions of universal health coverage (World Health Organization)



Teaching / training institutions for healthcare

Institutions	Total	Government	Private
Postgraduate medical teaching institutions	39	29	10
Medical colleges	105	36	69
Armed forces & Army Medical Colleges	6	6	0
Dental colleges and dental units	35	9	26
Nursing institutions offering basic BSc Nursing course	60	15	45
Nursing institutions offering post-basic BSc Nursing course	41	4	37
Nursing institutions offering specialized Diploma	4	1	3
Institutions offering Diploma in Nursing & Midwifery	183	43	140
Unani & Ayurvedic Medical College	4	2	2
Homeopathic Medical College	2	1	1
Unani & Ayurvedic Diploma College	23	1	22
Homeopathic Diploma College	61	0	61
Medical assistants training schools	209	9	200
Institutes of health technology (IHT)	109	11	97

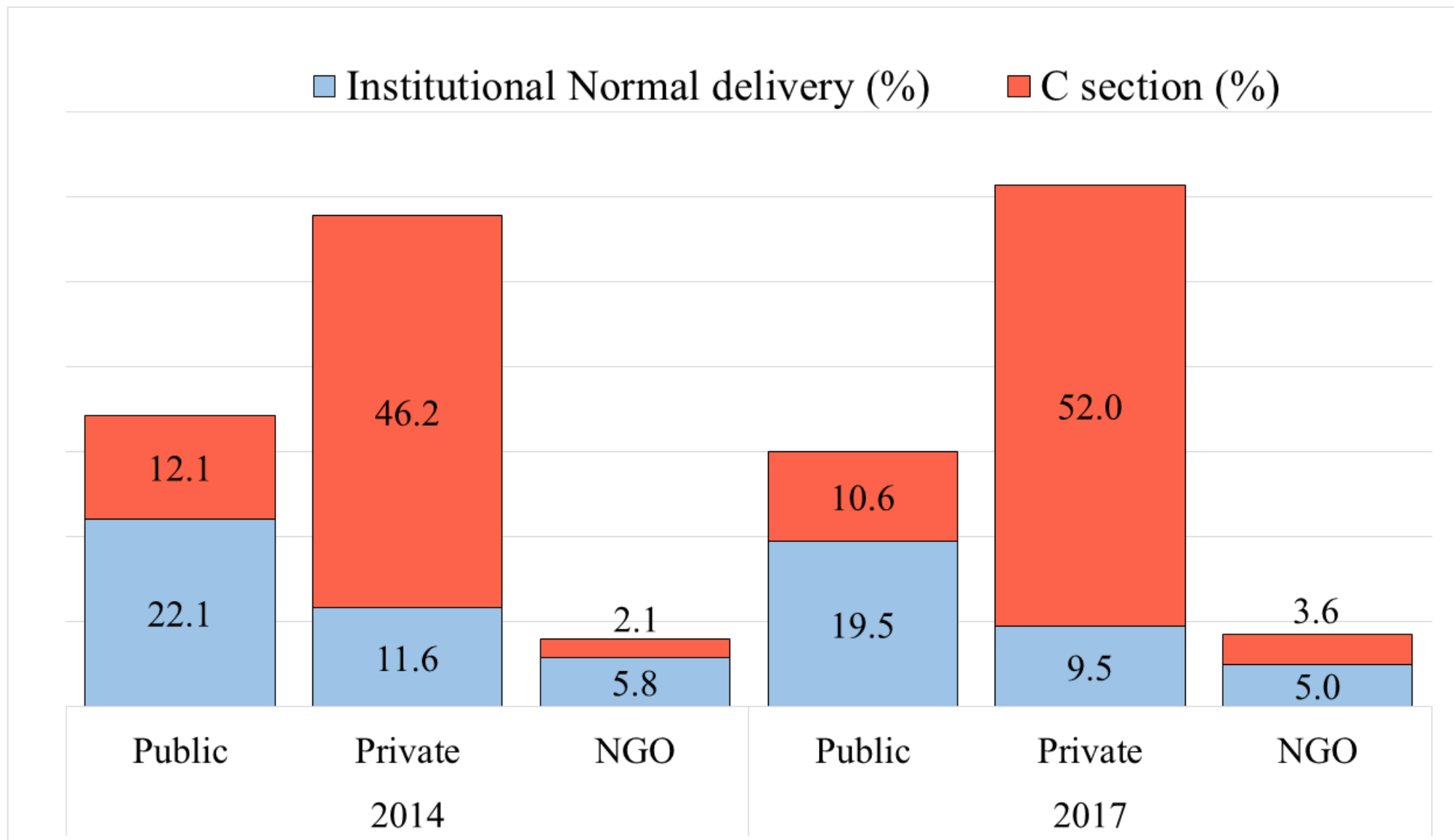
Source: Bangladesh Health Bulletin (2018)

Status of C-section delivery in Bangladesh (2003-2018)

Residence	2003-04	2007	2011	2014	2017-18
Urban	11.72	17.75	26.55	39.96	44.24
Rural	1.97	6.14	11.57	18.7	29.18
Total	3.99	8.6	15.07	24.26	33.22

Source: BDHS dataset

Percentage of deliveries by type between government and non-government facilities in 2017





Cost comparison and determinants of out-of-pocket payments on child delivery care in Bangladesh

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Summary

Objectives: The objective of this study is to capture the relevant out-of-pocket (OOP) costs, coping mechanisms, and associated factors that are related to child delivery in Bangladesh through the use of nationwide household level data.

Data and methods: The study was conducted using a secondary data source of the latest Bangladesh Demographic and Health Survey 2014. A cross-sectional survey was performed for 6 months, from June to November 2014, where closed-ended questions regarding child delivery-related expenditure were included. Log linear regression and descriptive analysis methods were used to analyze these data.

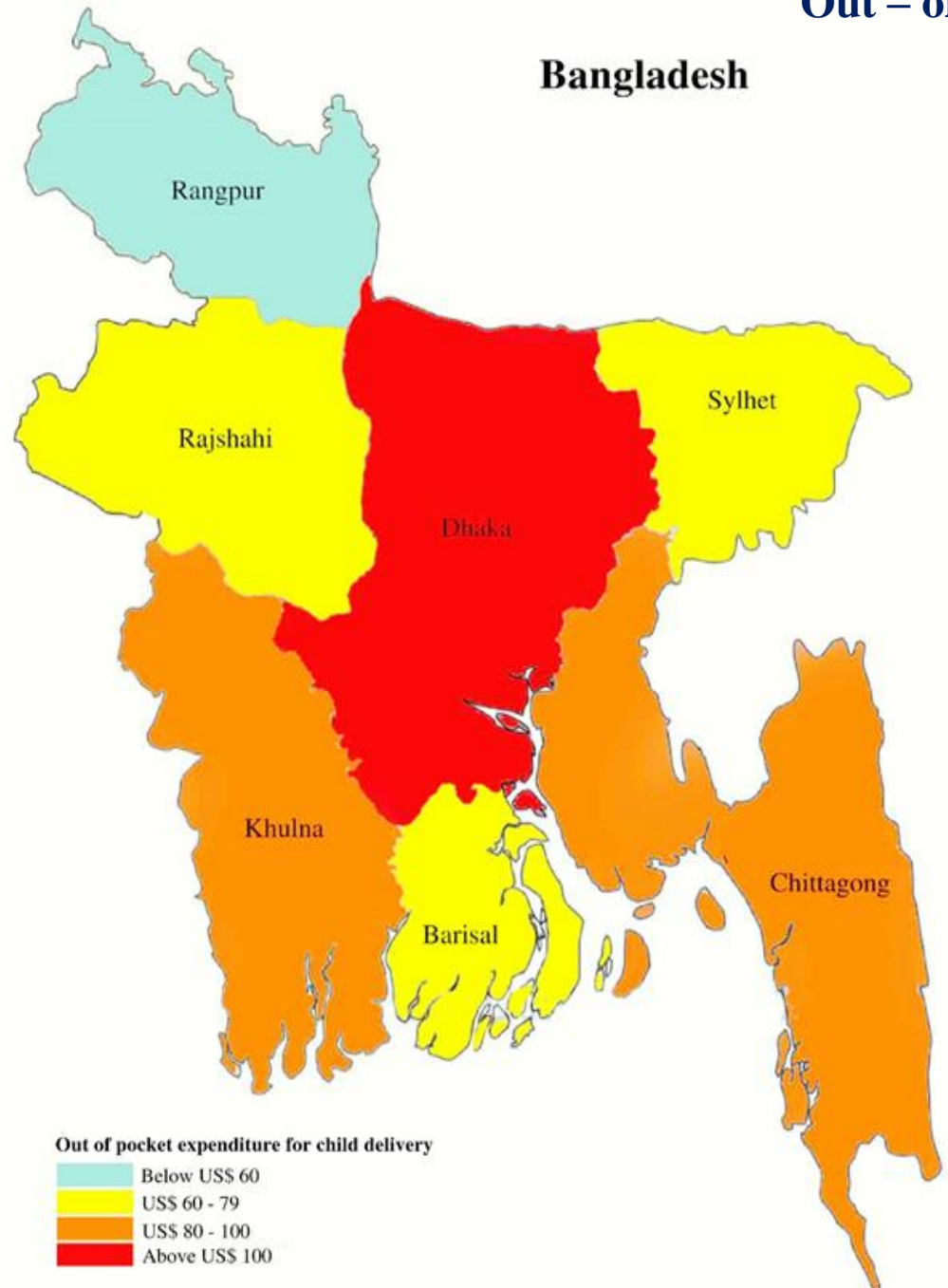
Results: Analysis indicated that the average self-reported OOP payment per child delivery was US\$ 79.23 (SD ±128.05). The highest OOP was observed for C-section (US\$ 249.89, SD ±153.54), followed by institutional normal delivery (US\$ 61.62, SD ±75.28). The average cost per normal home delivery was US\$ 15.89 (SD ±25.84). The richest quintile spent significantly more than the poorest quintile regarding C-section (US\$ 281 vs US\$ 204), normal delivery at an institution (US\$ 80 vs US\$ 65), and even normal delivery at home (US\$ 22 vs US\$ 13).

Conclusions: The study showed that there was a huge variation of OOP, which was dependent on the facility and socioeconomic demographic status of the households. As such, policy efforts need to focus on lowest wealth quintiles

Distribution of child delivery cost in Bangladesh, US\$

Variables	Home Delivery, (n=2,812)	Institutional Normal Delivery, (n=660)	Cesarean Section, (n=1,094)	Overall, (n=4,566)
	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)
Wealth index				
Poorest	12.63 (25.47)	65.21 (69.24)	204.25 (119.20)	28.90 (63.17)
Poorer	14.46 (23.63)	44.19 (41.55)	225.91 (153.34)	43.17 (88.99)
Middle	17.01 (26.65)	54.13 (70.7)	223.35 (140.02)	63.76 (107.3)
Richer	18.82 (24.01)	58.70 (80.82)	231.77 (123.59)	90.39 (122.11)
Richest	22.20 (31.96)	80.05 (88.15)	281.03 (171.89)	170.84 (177.50)
P-value	<0.001	0.001	<0.001	<0.001
Palace of delivery				
Home delivery	15.89 (25.84)	-	-	15.89 (25.84)
Public facilities	-	52.14 (64.66)	176.71 (128.80)	96.14 (109.98)
Private hospitals/clinic	-	92.60 (95.11)	271.24 (153.57)	234.95 (160.59)
Non-Government Organization (NGO)	-	31.81 (34.07)	203.74 (147.30)	79.49 (112.73)
Others	-	108.93 (87.43)	-	108.93 (87.43)
P-value		<0.001	<0.001	<0.001
Total	15.89 (25.84)	61.62 (75.28)	249.89 (153.54)	79.23 (128.05)

Out – of - pocket payments on child delivery care (US \$)

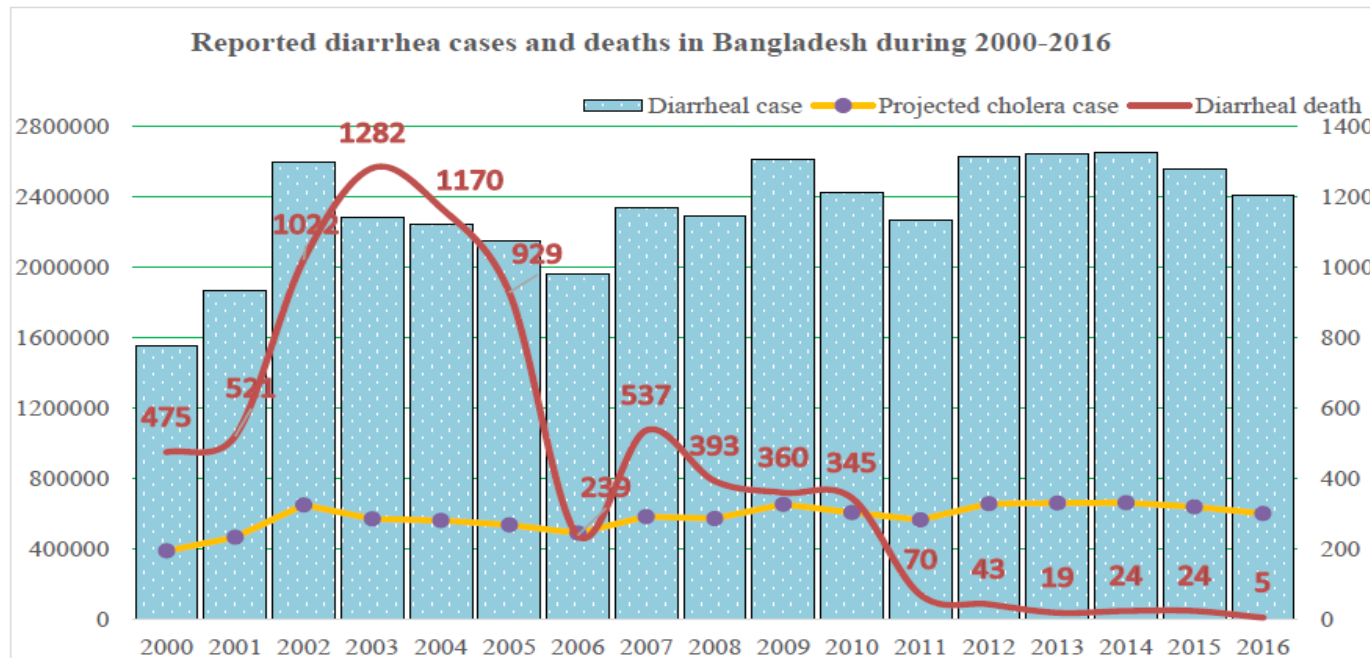


Source: Sarker AR, Sultana M, Ali N, et al. Cost comparison and determinants of out-of-pocket payments on child delivery care in Bangladesh. *Int J Health Plann Mgmt.* 2018;1–18.



Diarrheal Disease: A public health threat in Bangladesh

- ❑ Diarrhea is **highly prevalent communicable disease** in Bangladesh
- ❑ Every year approximately **2.6 million diarrhea related cases** were reported
- ❑ Among the diarrheal diseases, **rotavirus and cholera** are substantial disease burden in Bangladesh
- ❑ **Rotavirus kills nearly 6,000** under five children in Bangladesh
- ❑ It is estimated that approximately 450,000–1,000,000 cholera infections occurs each year, of which, at **least 300,000 are severe cholera cases** and kill **nearly 4,500** populations.



RESEARCH

Open Access

Economic costs of hospitalized diarrheal disease in Bangladesh: a societal perspective



Abdur Razzaque Sarker^{1,2*}, Marufa Sultana¹, Rashidul Alam Mahumud¹, Nausad Ali¹, Tanvir M Huda^{1,3}, M. Salim uzzaman⁴, Sabbir Haider⁵, Hafizur Rahman⁵, Ziaul Islam¹, Jahangir A. M. Khan⁶, Robert Van Der Meer² and Alec Morton²

Abstract

Background: Diarrheal diseases are a major threat to human health and still represent a leading cause of morbidity and mortality worldwide. Although the burden of the diarrheal diseases is much lower in developed countries, it is a significant public health problem in low and middle-income countries like Bangladesh. Though diarrhea is preventable and managed with low-cost interventions, it is still the leading cause of morbidity according to the patient who sought care from public hospitals in Bangladesh indicating that significant resources are consumed in treating those patients. The aim of the study is to capture the inpatient and outpatient treatment cost of diarrheal disease and to measure the cost burden and coping mechanisms associated with diarrheal illness.

Methods: This study was conducted in six randomly selected district hospitals from six divisions (larger administrative units) in Bangladesh. The study was performed from the societal perspective which means all types of costs were identified, measured and valued no matter who incurred them. Cost analysis was estimated using the guideline proposed by the World Health Organization for estimating the economic burden of diarrheal diseases. The study adopted quantitative techniques to collect the household and hospital level data including structured and semi-structured questionnaires, observation checklists, analysis of hospital database, telephone interviews and compilation of service statistics.

Results: The average total societal cost of illness per episode was BDT 5274.02 (US \$ 67.18) whereas the average inpatient and outpatient costs were BDT 8675.09 (US \$ 110.51) and BDT 1853.96 (US \$ 23.62) respectively. The cost burden was significantly highest for poorest households, 21.45% of household income, compared to 4.21% of the richest quintile.

Conclusions: Diarrheal diseases continue to be an overwhelming problem in Bangladesh. The economic impact of any public health interventions (either preventive or promotive) that can reduce the prevalence of diarrheal diseases can be estimated from the data generated from this study.

Keywords: Bangladesh, Catastrophic expenditure, Cost-of-illness, Diarrhea, Out-of-pocket payment, Public hospitals

Background

Diarrheal diseases are a global public health problem and a leading cause of morbidity and mortality across the world. According to the latest Global Burden of Disease Study, about 2.39 billion of diarrheal cases occurred globally and approximately 0.53 million of under five children died every

year [1, 2]. Specifically, incidence and case-fatality ratios are much higher in lower and middle income (LMI) countries [3]. In Bangladesh, diarrhea diseases are still very common among children under 5 years old [4]. In developing countries, diarrhea-related morbidity and mortality is directly linked with limited access to potable water and proper sanitation system [5]. Several studies observed that epidemics of diarrheal disease are associated with episodes of flooding [6], socioeconomic status [7], urban status [8] high population density, low education level and the proximity of household clusters to contaminated surface water [9–11].

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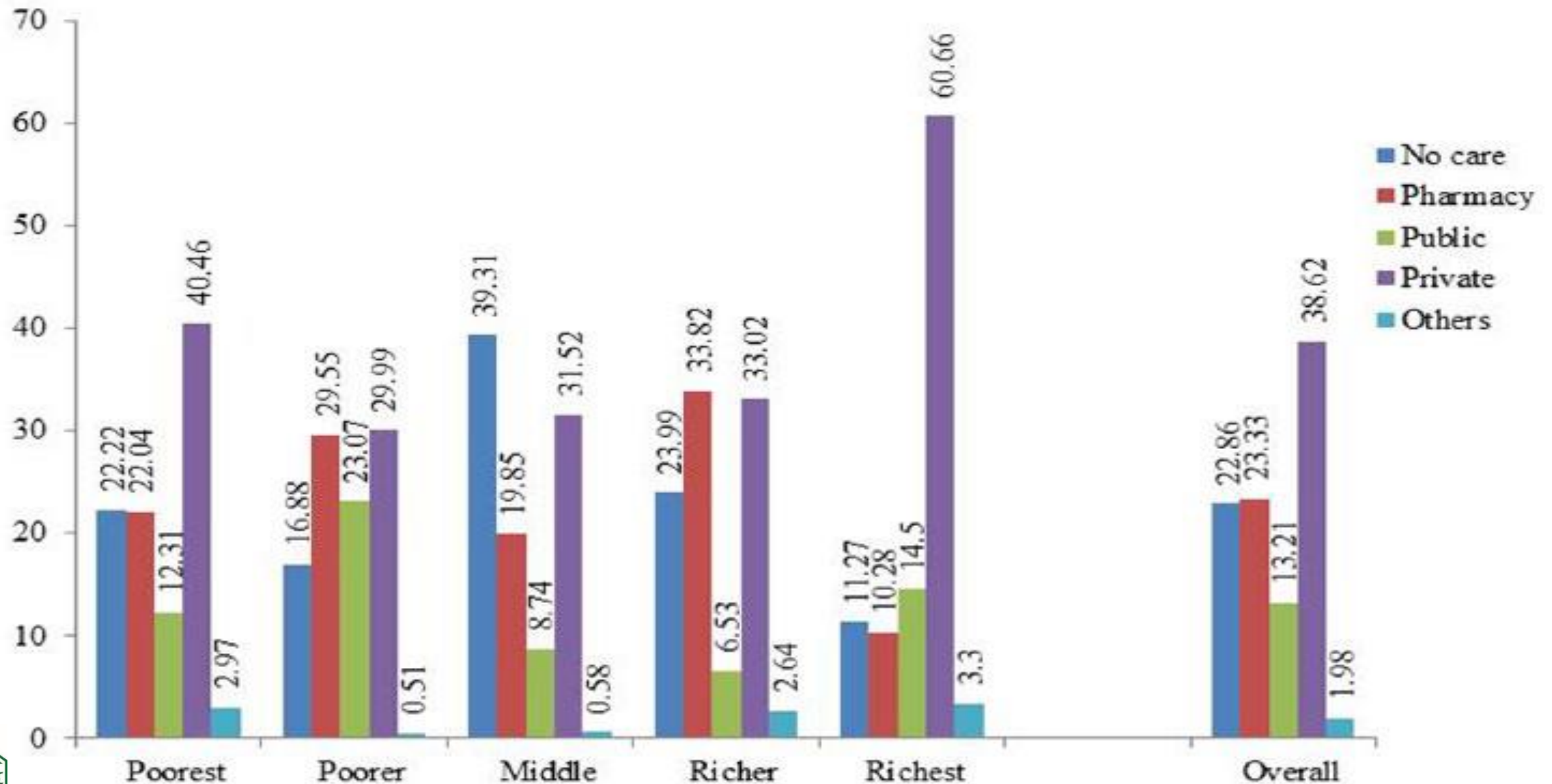
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Health Care–Seeking Behavior for Childhood Diarrheal Disease (CDD) in Bangladesh



Source: Sarker et al *Glob Ped Health* (2016)

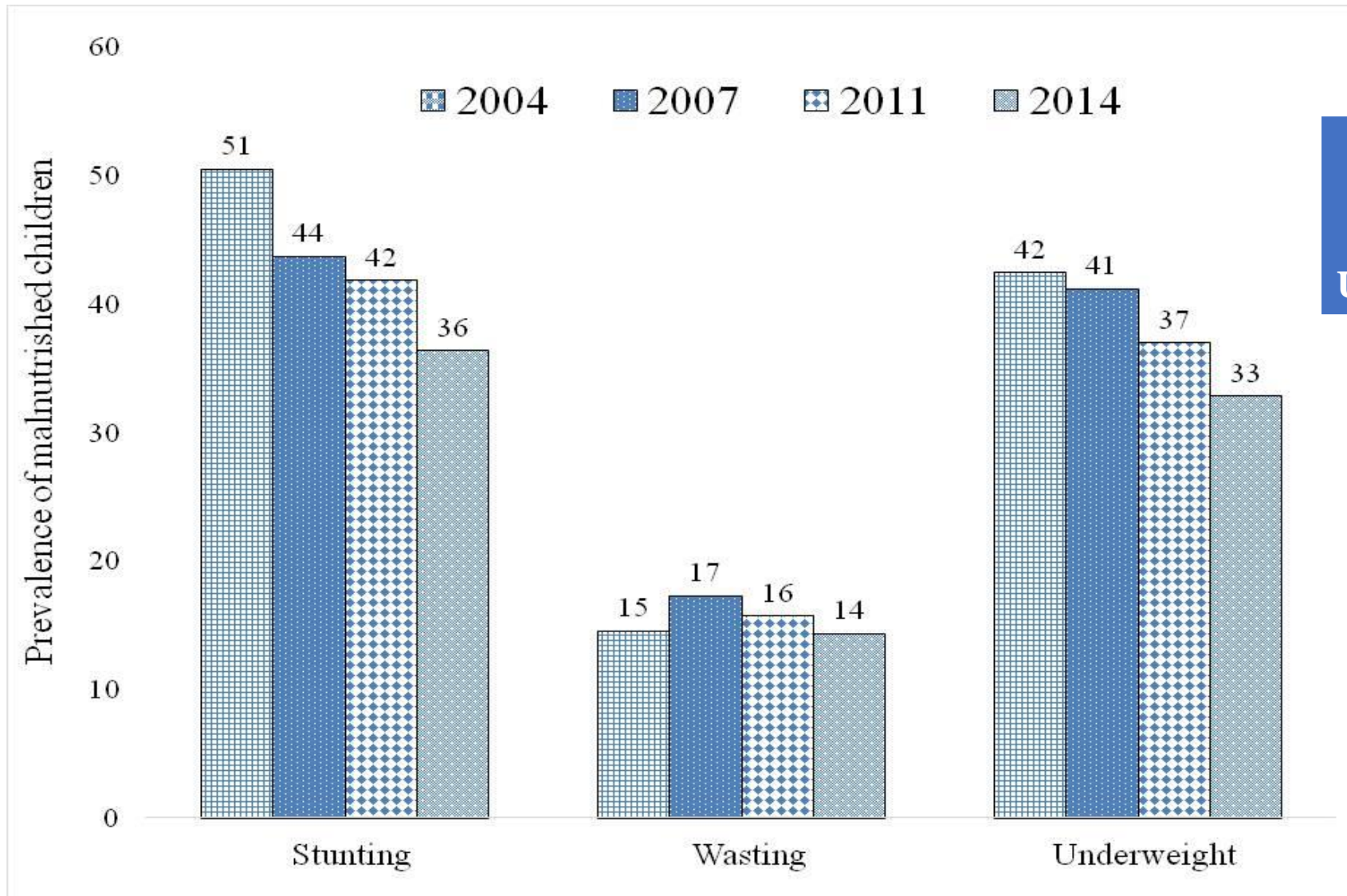
Treatment cost due to diarrheal disease, BDT (US\$)

Type of care	Perspective	Types of cost	Amount BDT (US\$)	Proportion of total cost (patients)
In-patient Care (n=402)	Provider	Direct medical	88.27 (1.12)	1.02
		Direct non-medical	2,015.82 (25.68)	23.24
	Household	Out of pocket payment	2,760 (35.36)	31.82
		Indirect cost	3,811 (48.55)	43.93
	Societal	All costs	8,675.09 (110.51)	100%
Out- patient Care (n=399)	Provider	Direct medical	28.16 (0.36)	1.52
		Direct non-medical	57.8 (0.74)	3.12
	Household	Out of pocket payment	609 (7.76)	32.85
		Indirect cost	1,159 (14.76)	62.51
	Societal	All costs	1,853.96 (23.62)	100%
All- patient Care (N=801)	Provider	Direct medical	58.21 (0.74)	1.1
		Direct non-medical	1,036.81 (13.21)	19.66
	Household	Out of pocket payment	1,689 (21.51)	32.02
		Indirect cost	2,490 (31.72)	47.21
	Societal	All costs	5,274.02 (67.18)	100%

Cost burden due to diarrheal related hospitalization %

Income group	Direct cost as percentage of monthly hh income
Poorest quintile ($\leq 10,000$)	21.45% (17.32%-25.58%)
2nd quintile (10,001- 12,000)	11.6% (9.18%-14.02%)
3rd quintile (12,001-18,000)	9.35% (7.92%-10.79%)
4th quintile (18,001-30,000)	6.45% (5.27%-7.64%)
Upper quintile (30,000+)	4.21% (3.34%-5.08%)
Overall	11.75% (10.37%-13.14%)

Childhood undernutrition (<5 children) in Bangladesh (BDHS dataset)



2017-18
Wasting 8.38%
Stunting 30.79
Underweight 21.74

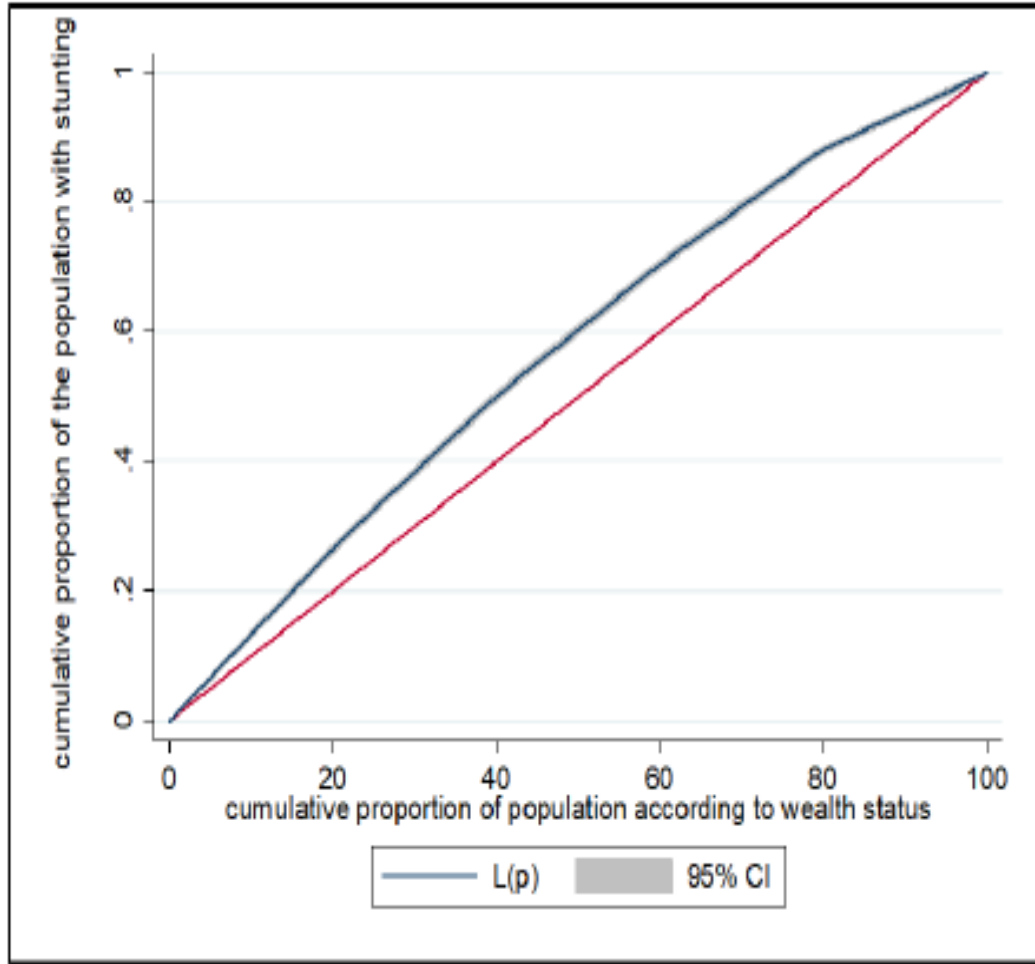


Figure 1. Concentration curves showing inequities for stunting

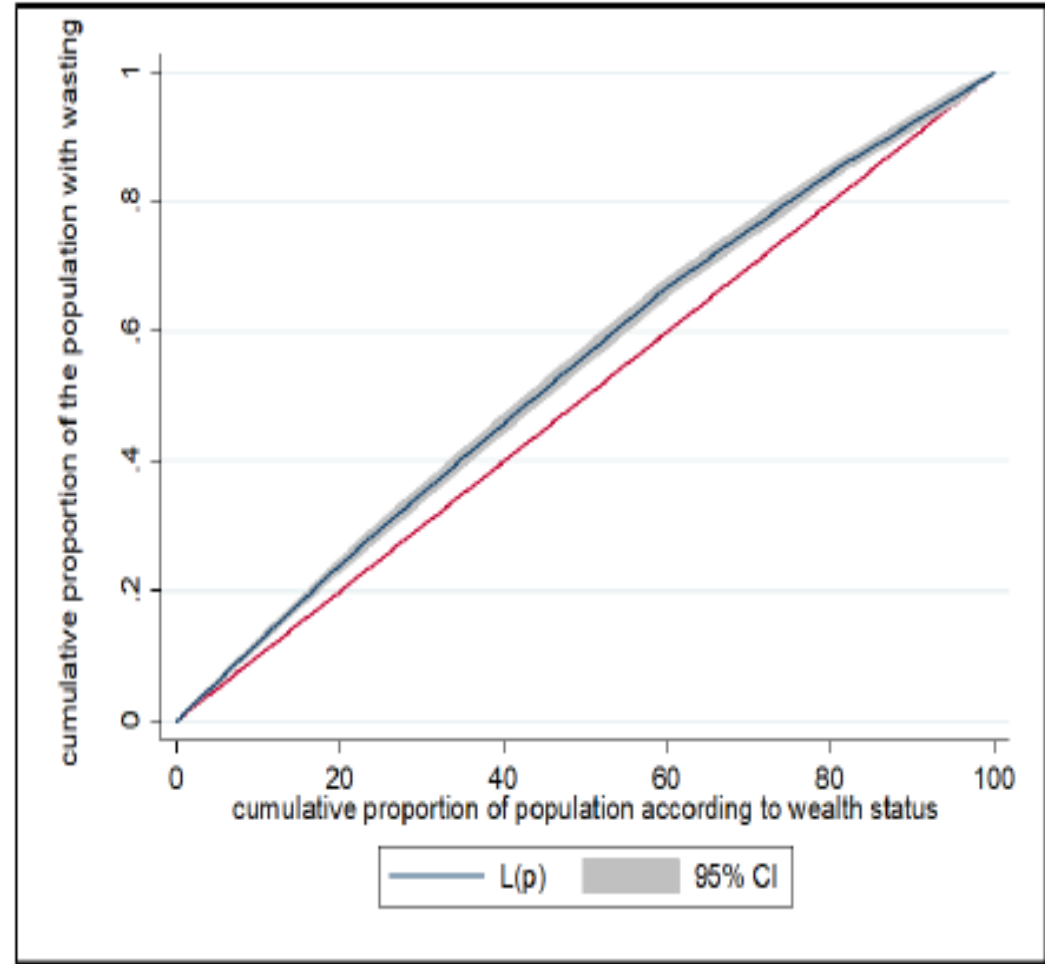


Figure 2. Concentration curves showing inequities for wasting

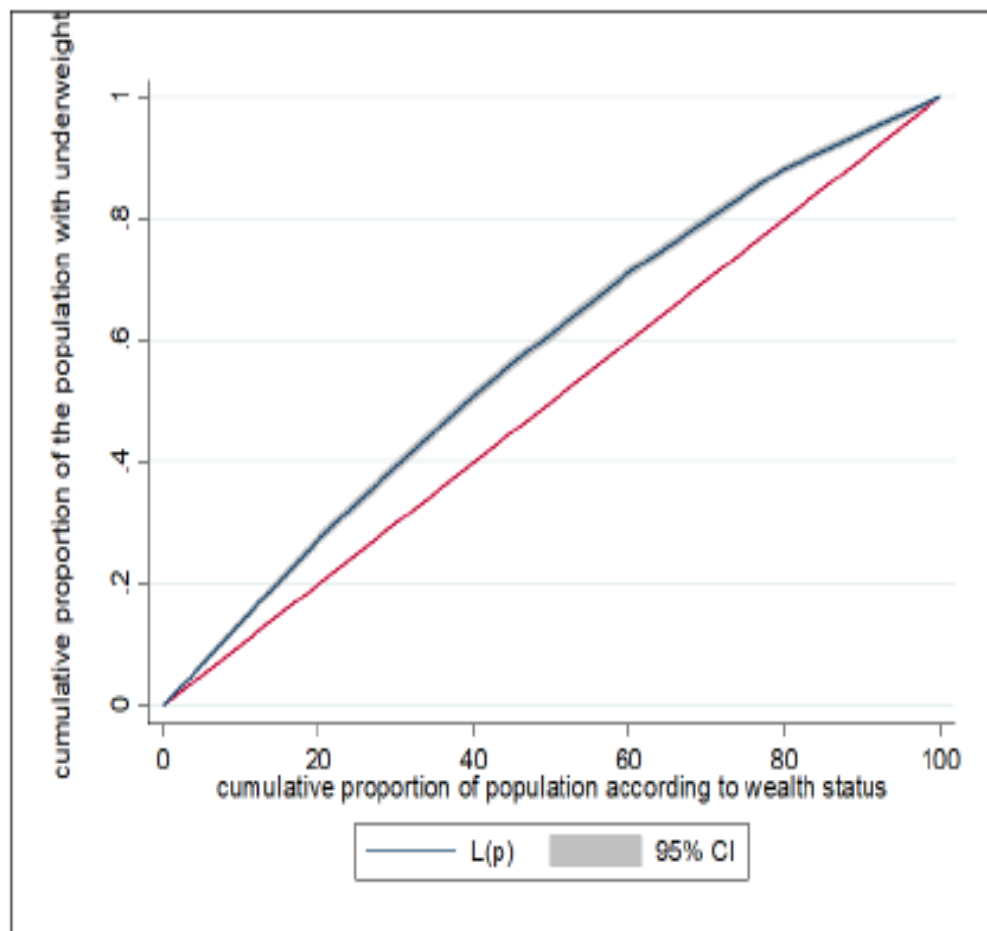


Figure 3. Concentration curves showing inequities for underweight

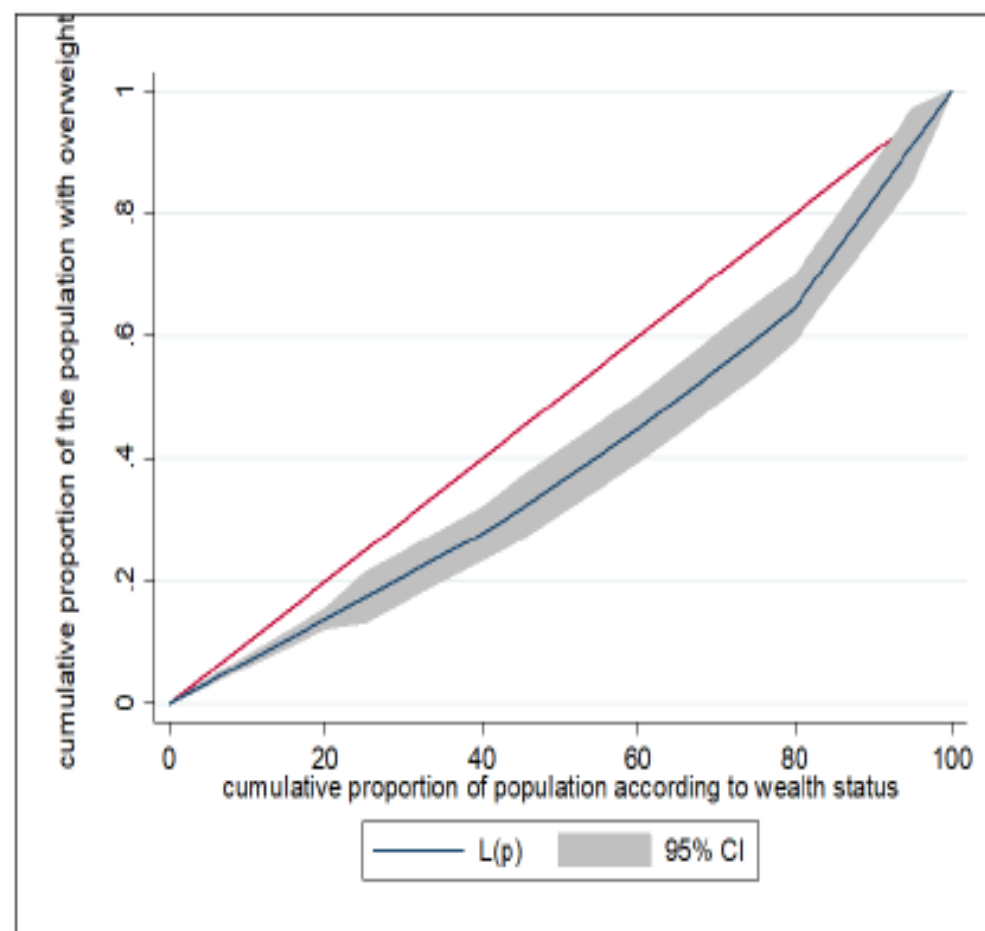
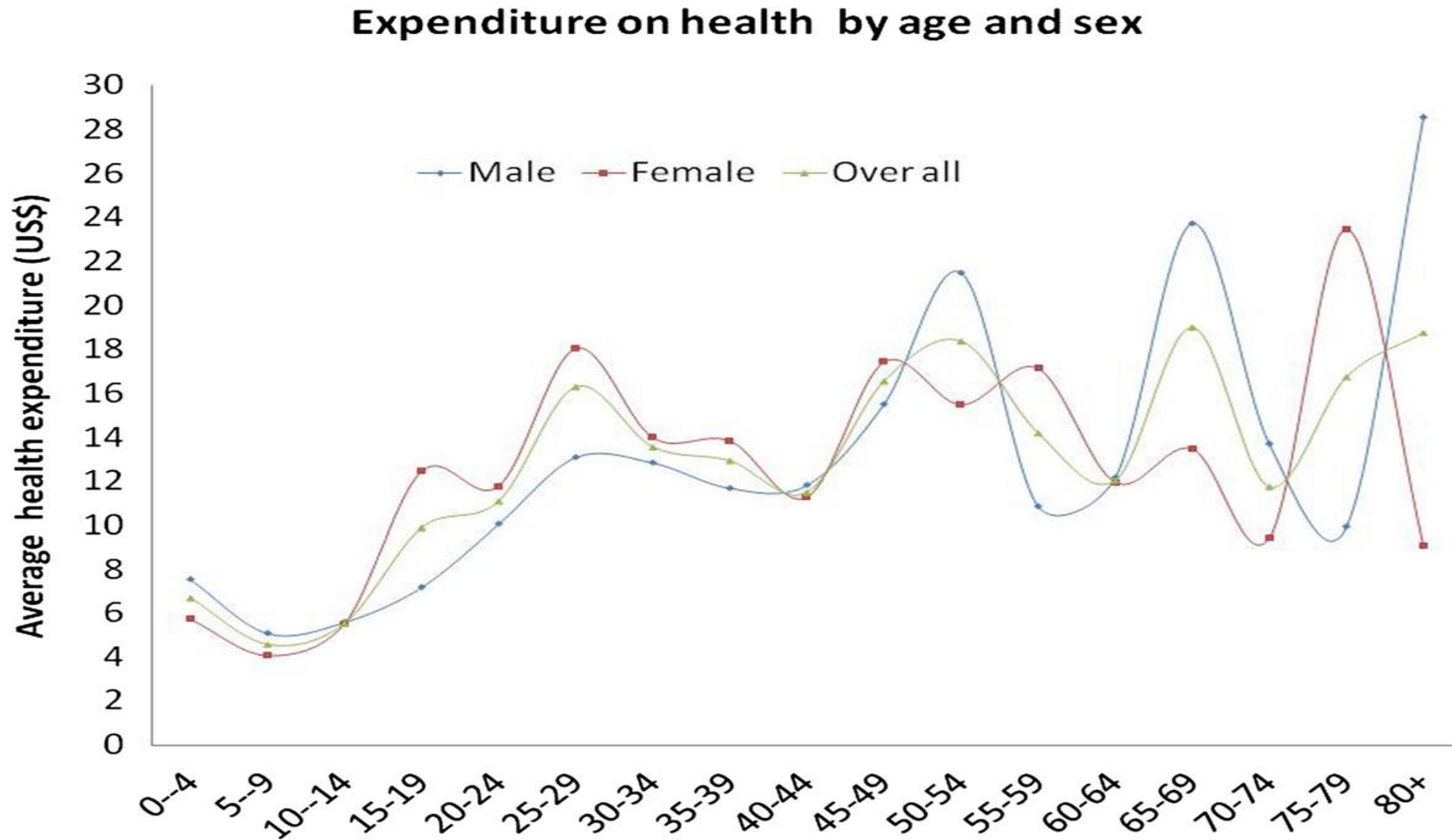


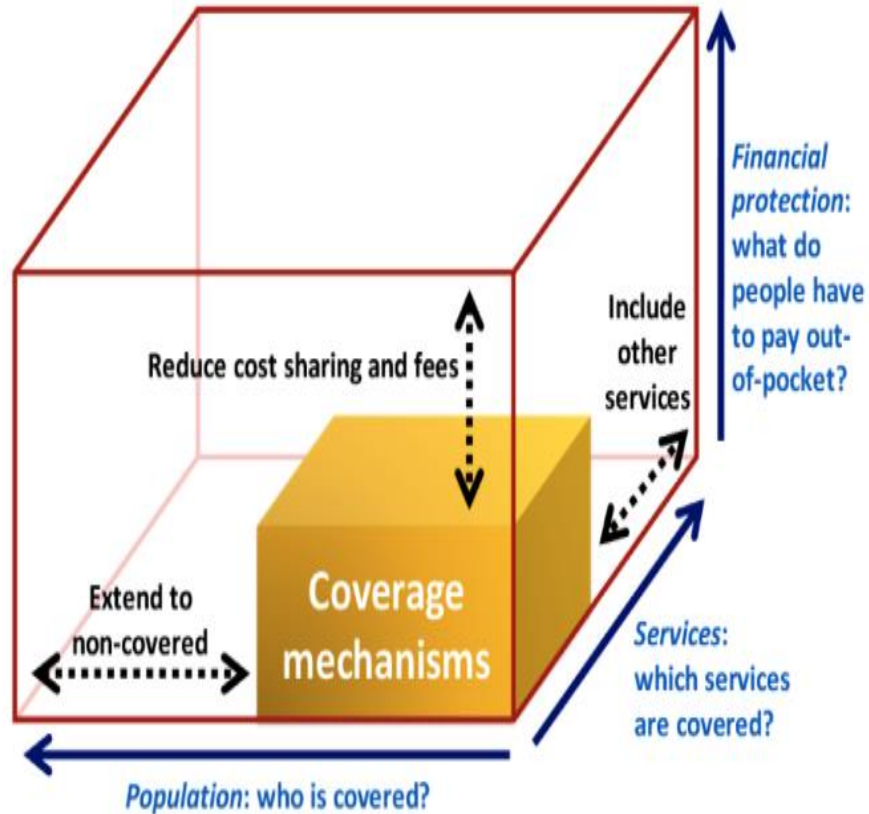
Figure 4. Concentration curves showing inequities for overweight

Age and sex specific health expenditure curve (HEC)

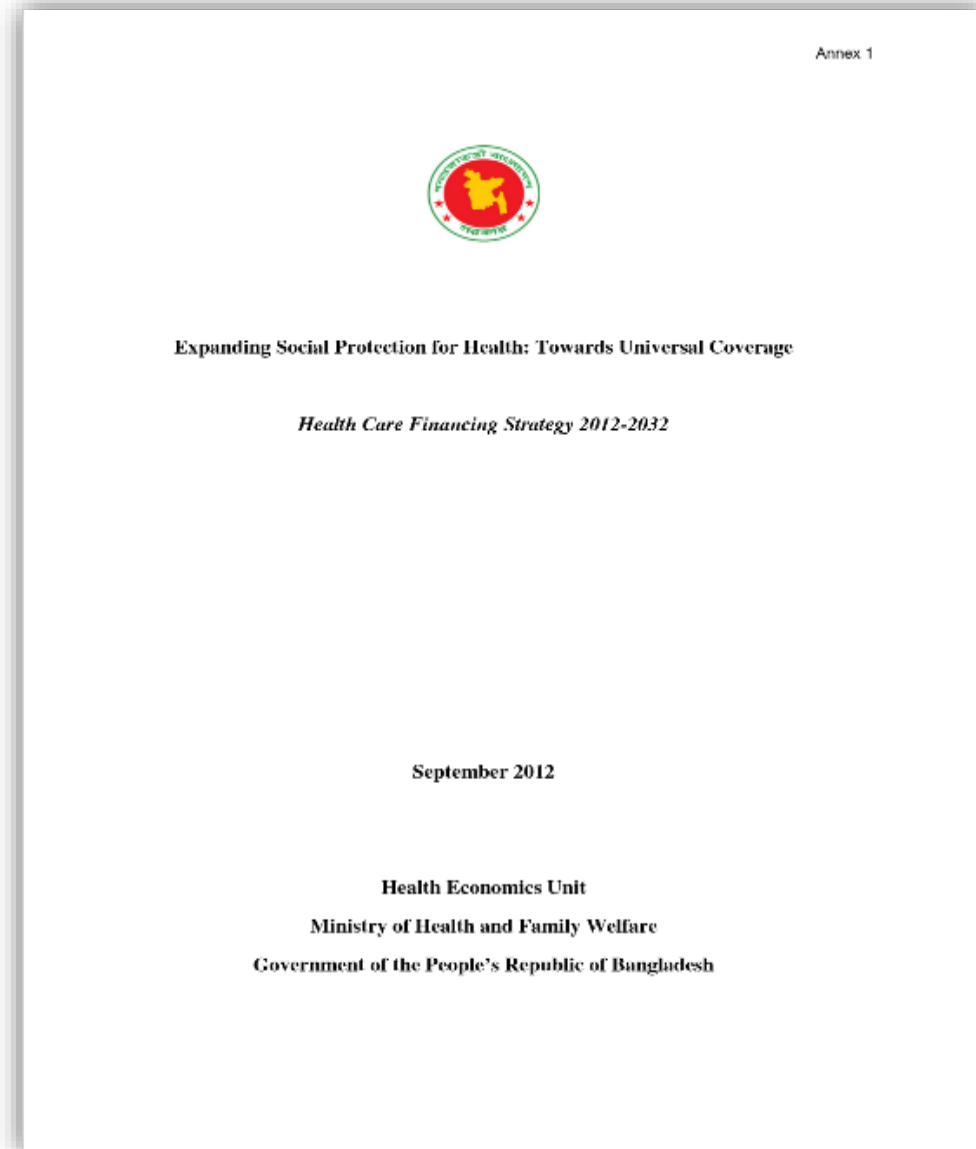


Source: Sarker et al (2014). The impact of age and sex on healthcare expenditure of households in Bangladesh. *Springer Plus* 3:435

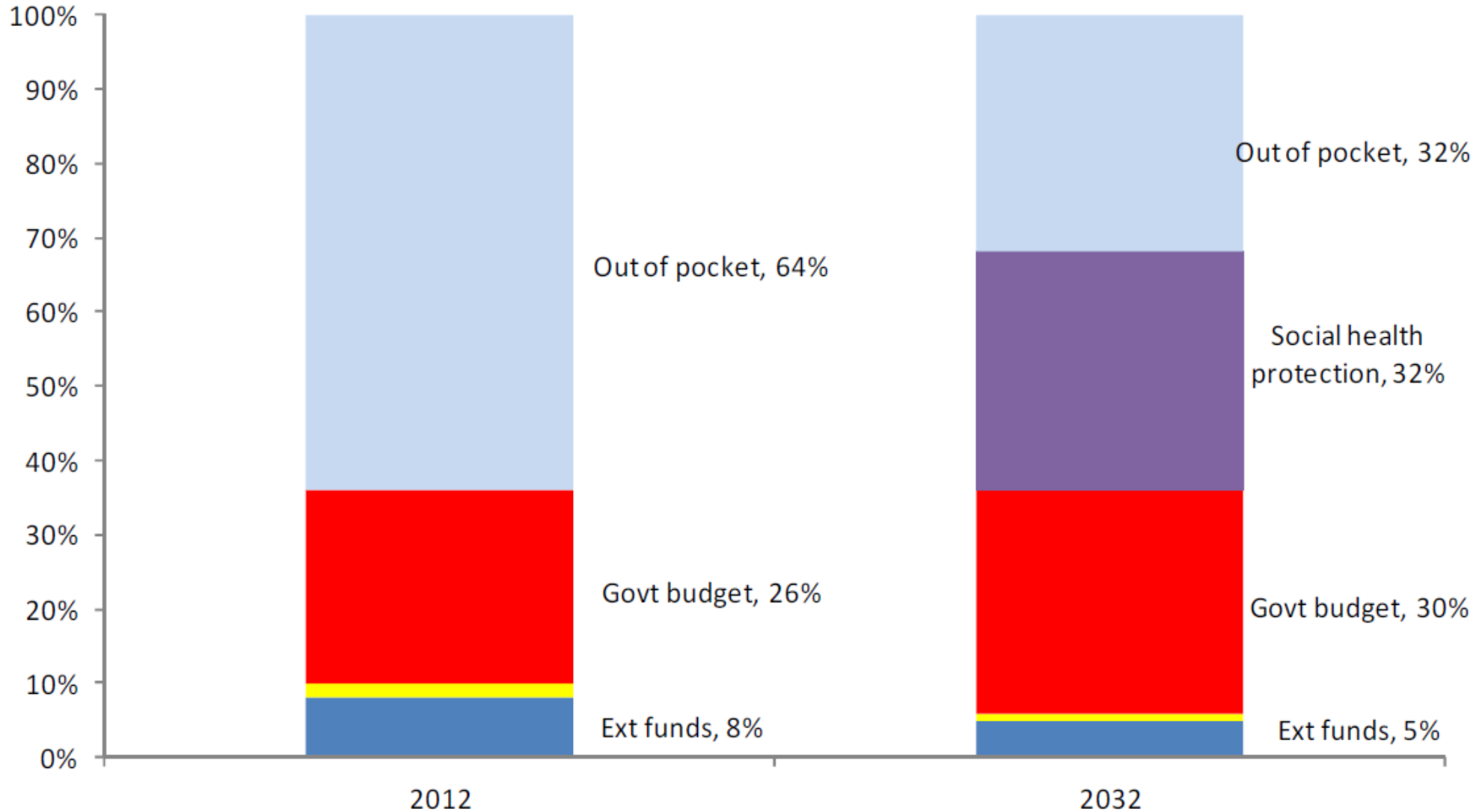
Towards universal coverage



The three dimensions of universal health coverage (World Health Organization)



Proposed Evolution of Financing Mechanisms



Proposed Population Coverage and Financial Mechanisms

POPULATION 152.5 MILLION (2012)	Below Poverty Line 31.5% 48 MILLION	Poor <ul style="list-style-type: none"> • Tax-funded publicly financed health care • Non-contributory health protection mechanisms (e.g. SSK) part of the Social Health Protection scheme 	SOCIAL TRANSFER ↑
	85.7 MILLION	Informal sector <ul style="list-style-type: none"> • Tax-funded publicly financed health care with user fee retention • Community-based health insurance initiatives • Micro health insurance • Other innovative initiatives • Gradual move to Social Health Protection scheme coverage 	
	18.8 MILLION Formal; regular income 12.3%	Formal sector <ul style="list-style-type: none"> • Tax-funded publicly financed health care with user fee retention • Social Health Protection scheme • Complementary private coverage 	

Shasthyo Surokhsha Karmasuchi

Study Setting:

- ✓ The study will be conducted in the catchment area where a pilot health protection scheme, titled “Shasthyo Surokhsha Karmasuchi (SSK)” is ongoing (MOHFW 2012)
- ✓ SSK is developed by the Health Economics Unit (HEU), a wing of the Ministry of Health and Family Welfare of the Government of Bangladesh and supported by German Development Cooperation
- ✓ The SSK scheme has been implemented at Kalihati, Madhupur and Ghatail Upazila (sub-district), under Tangail district of Bangladesh.
- ✓ More detailed on: <http://heu.gov.bd/shasthyo-shurokhsha-karmasuchi/>

Premium	Health services	Coverage
1000 BDT per household per year	Inpatient care: Inpatient care for 70 different diseases Hospital bed and food: Provide hospital bed and food free of cost Structured referral: Transportation cost for referral	50,000 BDT per household per year Medicine and diagnostics: Free drugs and diagnostic



Health insurance

Health insurance is a means of financing healthcare.

An insured person pays a small amount to an organization (insurer) in a regular basis, against (per month) which the insured person will have access to a defined healthcare package.

Types of health insurance

- Private insurance**
- Community health insurance**
- Social health insurance**
- National health insurance**

Characteristics of insurance

Type of insurance	Financing source	Nature of contribution	Funds earmarked for health	Membership
Private health insurance	Out-of-pocket payments of premium	Voluntary	Yes	Contributing members and usually their dependents
Community health insurance	Out-of-pocket payments of premium	Voluntary	Yes	Contributing members and usually their dependents
Social health insurance	Employer and/or employee from salary or wage	Mandatory	Yes	Contributing members and usually their dependents
National Health Insurance	Government general revenue and other taxes	Funded mostly from tax revenues	No	All citizens

Social Health Insurance

Social health insurance is an insurance programme which meets at least one of the following three conditions:

1. participation in the programme is compulsory either by law or by the conditions of employment,
2. the programme is operated on behalf of a group and restricted to group members,
3. an employer makes a contribution to the programme on behalf of an employee.

Why SHI

- Universal coverage
- Broad base for financing healthcare
- Preventing adverse selection

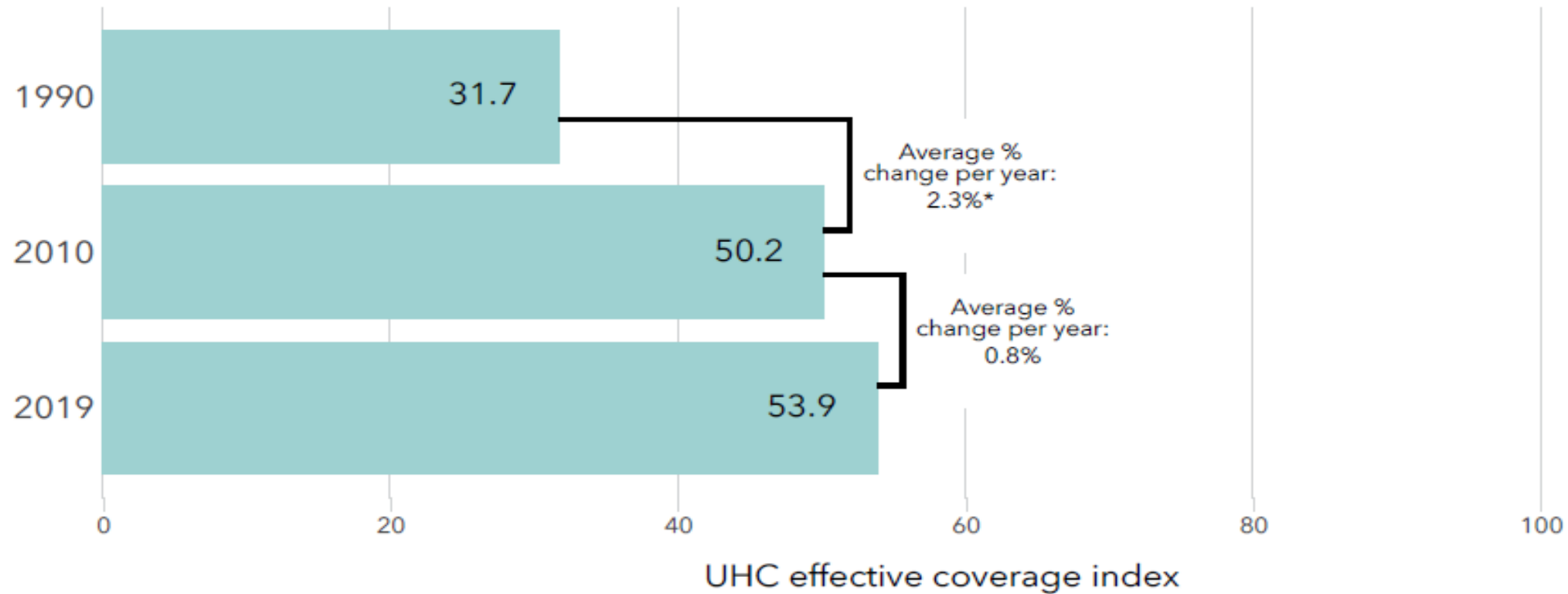
History of SHI

- SHI established in Germany by Bismarck in 1883
- 27 countries have established UHC via SHI

How long time it takes

- Germany 127 years
- Belgium 118 years
- Austria 79 years
- Luxembourg 72 years
- Costa Rica 48 years
- Japan 36 years
- Korea 26 years
- Bangladesh ? years

How well is this country or territory providing effective, essential health services?

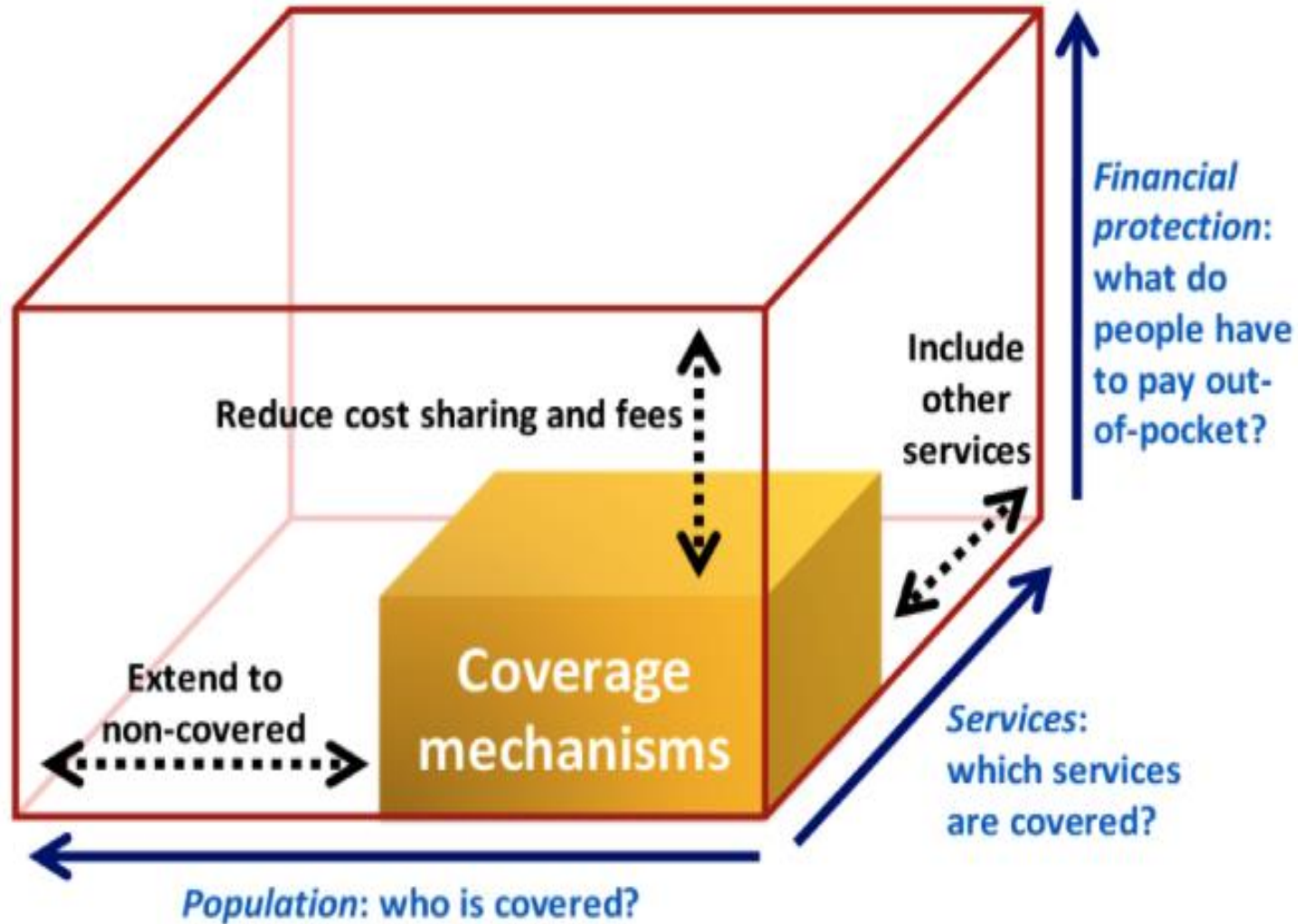


*The average rate of change was statistically significant for that time period.

The Universal Health Coverage (UHC) effective coverage index aims to represent service coverage across population health needs and how much these services could contribute to improved health.

See related publication: [https://doi.org/10.1016/S0140-6736\(20\)30677-2](https://doi.org/10.1016/S0140-6736(20)30677-2) ([https://doi.org/10.1016/S0140-6736\(20\)30677-2](https://doi.org/10.1016/S0140-6736(20)30677-2))

Towards universal coverage



Bangladesh
Where?

The three dimensions of universal health coverage (World Health Organization)

Thank you

