

Understanding health insurance coverage and its socio-demographic associations among women in Bangladesh: evidence from BDHS 2022

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Abstract

Background: Health insurance is vital for healthcare financing and aligns with the 2030 Sustainable Development Goal agenda. Women of reproductive age face unique barriers to affordable care due to higher health risks and caregiving roles. This study aims to estimate the proportion of women with health insurance coverage (HIC) and its associated factors.

Methods: We used data from the latest round of the Bangladesh Demographic and Health Survey (BDHS) of 2022. The number of women considered for analysis was 19987. Unadjusted odds ratio with their 95% confidence interval (CI) were reported.

Results: The median (IQR) age of the women in the study was 32.0 (25.0-39.0) years. Only 0.3% of women reported having HIC. The odds of HIC increased significantly with having account with bank or other financial institution (UOR: 2.27; 95% CI: 1.36-3.79), both woman or their husbands having post-secondary education, belonging to richest family (UOR: 3.32; 95% CI: 1.45-7.60), and having adequate media exposure (UOR: 2.78; 95% CI: 1.41-5.47).

Conclusions: The study highlights the need for higher education among both sexes and targeted strategies to reduce wealth-based disparities and use mass media to promote the uptake of HIC.

WHAT IS ALREADY KNOWN ON THIS TOPIC

- Health insurance is a key mechanism for financing healthcare globally, aligning with the Sustainable Development Goals agenda for 2030.
- Women in reproductive age groups face unique barriers to affordable healthcare, particularly in LMICs.
- Less than 1% of the Bangladeshi population, benefit from social health protection

WHAT THIS STUDY ADDS

- Only 0.3% Women of reproductive age have health insurance coverage.
- The most prevalent type of health insurance is private insurance and mutual or community organization
- Education, media exposure, good financial standing and financial inclusion increases the odds of having health insurance coverage.

Introduction

Health insurance is a key mechanism for financing healthcare globally, aligning with the Sustainable Development Goals (SDGs) agenda for 2030.[1] Universal Health Coverage (UHC), central to SDG target 3.8, underscores equitable access to essential health services as a fundamental right, free from financial hardship. Despite these commitments, 2 billion people worldwide face significant financial challenges, with 1 billion incurring severe out-of-pocket expenditures, and 344 million pushed further into financial distress due to healthcare costs.[1] These persistent inequalities are exacerbated in low- and middle-income countries (LMICs), where demographic shifts, including ageing populations and rising chronic disease burdens, strain the financial sustainability of health systems.[2,3] Bangladesh exemplifies the financial barriers to healthcare in LMICs. Approximately 26% of households experience catastrophic health expenditures (CHE) during hospitalization annually, while out-of-pocket medical expenses accounted for 64.3% of the nation's total health expenditures in 2015, amounting to USD 1.49 billion.[4] Alarming, less than 1% of the population benefits from social health protection, as per the government's statistics.[5] Women in reproductive age groups face unique barriers to affordable healthcare, particularly in LMICs. They experience higher health risks and often shoulder caregiving responsibilities, further exacerbating their vulnerability.[1] In Bangladesh, limited evidence exists on the determinants of health insurance coverage among women of reproductive age. This study seeks to address this gap by estimating the proportion of women of this age group with HIC and analysing factors influencing their access to it using data from the National Demographic and Health Survey.

Methods

Data overview

We used data from the latest round of the Bangladesh Demographic and Health Survey (BDHS) of 2022. The data can be found on request from the DHS website [<https://dhsprogram.com/>]. For the current analysis, we used data collected from women aged 15-49 years from selected households. In total, 19987 eligible women were considered for analysis. Details regarding the methodology of the BDHS 2022 can be found elsewhere.[6]

Operation definitions

Outcome variables

Health insurance coverage (HIC): We considered HIC as the outcome variable in this study which had two categories. Women with any HIC at the time of survey were categorized as 'yes'; otherwise 'no'. The

BDHS considered social security, employer-based insurance, mutual health organization or community-based insurance, privately purchased commercial insurance and other as HIC.[7]

Independent variables

The independent variables considered for the study were age (in complete years), husband's age (in complete years), residence (urban/rural), sex of the household head (male/female), bank or other institution account (no/yes), women's level of education (no education/upto primary/upto secondary/post-secondary), husband's level of education (upto primary/upto secondary/post-secondary), wealth index (poorest/poor/middle/rich/richest), currently employed (no/yes), women empowerment (low/middle/high) and media exposure (poor/adequate).

After literature review, the independent variables were classified. The wealth index operates on the assumption that ownership of tangible assets, access to services, and the availability of amenities are indicative of a household's economic status relative to others within the country.[8,9] This method offers an indirect yet effective means of estimating economic standing without the need for explicit income or expenditure data.[10]

The Survey-based Women's Empowerment Index (SWPER) was introduced and validated using data from the Demographic and Health Surveys (DHS) across 34 African nations in 2017.[11] It provides a standardized, individual-level tool for comparing women's empowerment across countries and over time. The SWPER encompasses three dimensions of empowerment, capturing the resources and agency of partnered women, whether in marital or cohabiting unions.[11] Following the recommendations of Ewerling *et al.*, participants were categorized into three categories of women empowerment: low, middle and high.

Mothers' media exposure was assessed using three indicators: 'reading newspapers,' 'watching television,' and 'listening to the radio.' Engagement was scored as 0 for 'not at all,' 1 for 'less than once a week,' and 2 for 'at least once a week.' [8] The total scores were categorized as 0–2 ('poor') and 3–6 ('adequate').[12]

Data analysis

We analysed data using appropriate statistical methods. For continuous variables, we reported median (IQR); while categorical variables were reported using frequency and percentage. "Type of HIC" was presented via parliament chart. A Bivariate binomial logistic regression model was developed and unadjusted odds ratio (UOR) with their corresponding 95% confidence interval (CI) were reported. Statistical analysis was conducted using jamovi (version 4.6.13). A p-value of <0.05 was considered

statistically significant.

Patient and public involvement

Patients and or publics were not directly involved in designing, conducting, interpreting or dissemination of the results of the study.

Results

The total number of women aged 15-49 years who were included in this analysis was 19987. The median (IQR) age of the women was 32.0 (25.0-39.0) years and for their husband's it was 39.0 (32.0-47.0) years. Most (64.9%) of them were rural residents, and only 14.5% were from families with female household heads. The highest proportion of women (45.7%) as well as their husbands (40.8%) reported upto secondary level of education. Only 0.3% women reported having HIC (Table 01).

Table 01 also reports that the odds of having HIC increased with having an account with a bank or other financial institution (UOR: 2.27; 95% CI: 1.36-3.79; p-value=0.002). Similarly, increased odds of HIC were found among women with post-secondary education (UOR: 5.61; 95% CI: 1.65-19.08; p-value=0.006), whose husbands had post-secondary education (UOR: 2.85; 95% CI: 1.33-6.14; p-value=0.007), belonged to richest family (UOR: 3.32; 95% CI: 1.45-7.60; p-value=0.005), and had adequate media exposure (UOR: 2.78; 95% CI: 1.41-5.47; p-value=0.003).

Table 01: Socio-demographic characteristics of the Bangladeshi women

Variables	Total	Health insurance coverage		UOR (lower-upper)*	p-value
		No (n = 19923, % = 99.7)	Yes (n = 64, % = 0.3)		
Age (in complete years)**	32.0 (25.0-39.0)	32.0 (25.0-39.0)	25.0 (27.8-38.3)	1.02 (0.99-1.05)	0.247
Husband's age (in complete years)** (n = 18987)	39.0 (32.0-47.0)	39.0 (32.0-47.0)	40.0 (35.0-45.8)	1.01 (0.98-1.03)	0.585
Residence					0.147
Urban	7007 (35.1)	6979 (35.0)	28 (43.8)	1	
Rural	12980 (64.9)	12944	36 (56.3)	0.69 (0.42-1.14)	

		(65.0)			
Sex of the household head					0.794
Male	17093 (85.5)	17039 (85.5)	54 (84.4)	1	
Female	2894 (14.5)	2884 (14.5)	10 (15.6)	1.09 (0.56-2.15)	
Bank or other account					0.002
No	16017 (80.1)	15976 (80.2)	41 (64.1)	1	
Yes	3970 (19.9)	3947 (19.8)	23 (35.9)	2.27 (1.36-3.79)	
Woman's level of education					
No education	2721 (13.6)	2718 (13.6)	3 (4.7)	1	—
Upto primary	5207 (26.1)	5194 (26.1)	13 (20.3)	2.27 (0.65-7.96)	0.201
Upto secondary	9136 (45.7)	9106 (45.7)	30 (46.9)	2.99 (0.91-9.79)	0.071
Post-secondary	2923 (14.6)	2905 (14.6)	18 (28.1)	5.61 (1.65-19.08)	0.006
Husband's level of education (n = 14943)					
Upto primary	5306 (35.5)	5296 (35.6)	10 (19.6)	1	—
Upto secondary	6092 (40.8)	6070 (40.8)	22 (43.1)	1.92 (0.91-4.06)	0.088
Post-secondary	3545 (23.7)	3525 (23.7)	19 (37.3)	2.85 (1.33-6.14)	0.007
Wealth index					
Poorest	3588 (18.0)	3581 (18.0)	7 (10.9)	1	—
Poor	3914 (19.6)	3903 (19.6)	11 (17.2)	1.44 (0.56-3.72)	0.450
Middle	3989 (20.0)	3980 (20.0)	9 (14.1)	1.16 (0.43-3.11)	0.773
Rich	4149 (20.8)	4140 (20.8)	9 (14.1)	1.11 (0.41-2.99)	0.833
Richest	4347 (21.7)	4319 (21.7)	28 (43.8)	3.32 (1.45-7.60)	0.005
Currently employed					0.094
No	13812 (69.1)	13774 (69.1)	38 (59.4)	1	
Yes	6175 (30.9)	6149 (30.9)	26 (40.6)	1.53 (0.93-2.53)	
Woman empowerment (n = 17027)					

Low	2363 (13.9)	2358 (13.9)	5 (8.8)	1	—
Middle	4503 (26.4)	4489 (26.5)	14 (24.6)	1.47 (0.53-4.09)	0.459
High	10161 (59.7)	10123 (59.7)	38 (66.7)	1.77 (0.70-4.50)	0.230
Media exposure					0.003
Poor	18733 (93.7)	18679 (93.8)	54 (84.4)	1	
Adequate	1254 (6.3)	1244 (6.2)	10 (15.6)	2.78 (1.41-5.47)	

*: Median (IQR) reported; UOR: Unadjusted odds ratio.

Figure 01 illustrates the type of HI coverage found in the study. Private insurance coverage was reported by 35.4% participants, followed by coverage by mutual or community organization by 32.3% participants.

Figure 01: Type of health insurance (multiple response)

Discussion

Health insurance is considered one of the key pathways which can help in achieving the SDG target 3.8 by promoting UHC.[1] Unfortunately, people from the LMICs, especially women in the reproductive age groups, are largely at a disadvantage as they have limited to no access to HIC.[1] In this study, we aimed to estimate the proportion of women of this age group with HIC and analyse factors influencing their access to it using data from the National Demographic and Health Survey. We found that only 0.3% of women have HIC, which corresponds to the national proportion of <1%.[5] The most common types of insurance were private insurance and mutual or community organizations. In Bangladesh, most insurance is provided by private companies, with only two state-owned insurers.[13] So, the preference for private insurance is understandable. Moreover, several community-based schemes operate at the local level, organized by NGOs and hospitals.[5] These schemes function as both insurers and service providers, offering integrated healthcare coverage, which explains the preference for coverage by mutual or community organizations. The low level of HIC prevalence can be attributed to the fact that the cost of premiums for private insurance is high and the virtual exclusion of the rural population and informal sector workers due to inaccessibility.[5]

Studies have suggested that individuals with higher levels of education are usually exposed to more health information, i.e., their health literacy increases.[14,15] As such, these individuals, especially women, tend to prefer HIC. Our study has also found a similar association with higher levels of education in the women or their husbands having higher odds of having HIC.

Socioeconomic status significantly influences health insurance ownership among women in developing countries. Studies indicate that women of reproductive age residing in wealthier households and advantaged neighbourhoods have higher chances of owning health insurance compared to their counterparts in poorer households and disadvantaged neighbourhoods.[14,16] We also found a similar association.

A study conducted in Ghana reports that women with greater exposure to media are more likely to uptake health insurance than their counterparts.[17] It has been suggested that radio and television are more accessible for women, and providing information via these media can promote HIC. Additionally, having an account with a bank or other financial organization is associated with a higher level of financial empowerment of women,[18] which tends to influence their decision towards HIC.

The strength of the study lies in the nationally representative data, which makes the findings generalizable. Additionally, this study explores the HIC among women of reproductive age, which

provides much-needed insights into this much neglected area. However, there are also some limitations. The HI uptake is often influenced by a range of socio-economic factors, all of which are not included in the study. As it was a survey, no causal relationship could have been established.

Conclusion

The current study highlights the extremely low prevalence of health insurance coverage among women of reproductive age in Bangladesh, with private and community-based insurance being the most common forms. The study also emphasises the need to promote both male and female education, at least up to a post-secondary level, to facilitate HIC. Additionally, targeted approaches should be made to bridge the inequality of coverage across variable wealth index quartiles and provide easy access to information related to HI via mass media.

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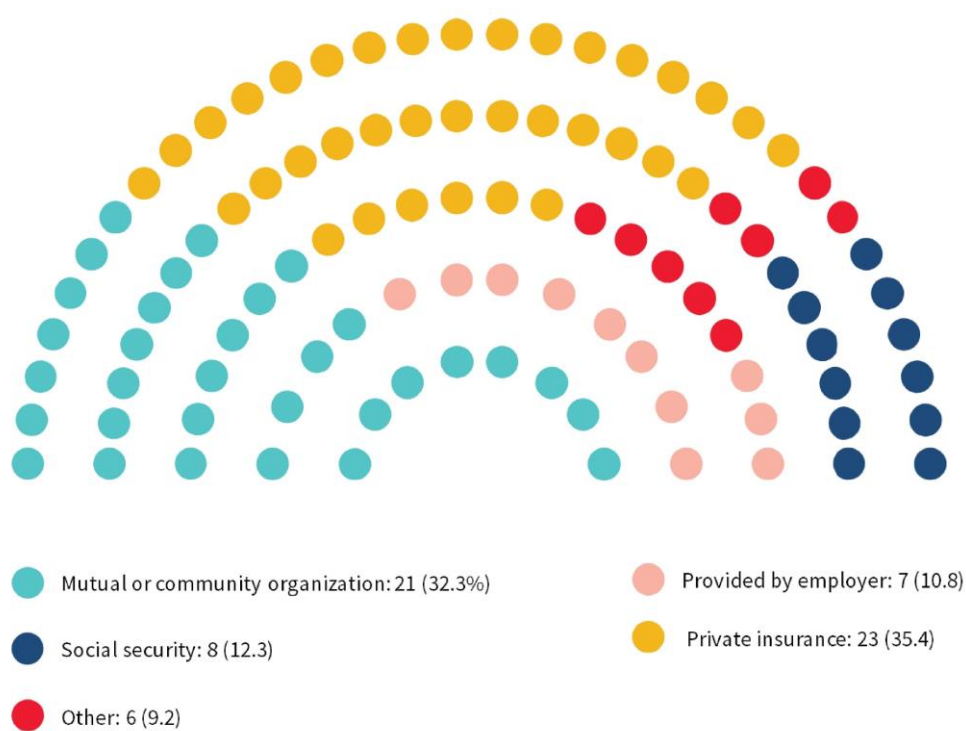


Figure 01: Type of health insurance (multiple response)