RESEARCH

Open Access

Determinants of healthcare decision-making autonomy among Bangladeshi women: mixed-effect logistic regression analysis

Rafsaniat Binte Mustafiz[1†], Syed Sharaf Ahmed Chowdhury[1,2†], Satyajit Kundu[3], Nurjahan Binte Munaf[1] and Azaz Bin Sharif[1,2*]

Abstract

Background Women's healthcare decision-making autonomy is observed to play a significant role in improving maternal and child health outcomes. However, there is a dearth of research that addressed this issue in the Bangladeshi context. Therefore, this study aimed to estimate the prevalence of healthcare decision-making autonomy and its determinants among Bangladeshi women.

Methods Data on 18,890 (weighted) women's healthcare autonomy were driven from the Bangladesh Demographic and Health Survey (BDHS) 2017-18. A multilevel (mixed-effect) logistic regression model was applied to explore the determinants of healthcare autonomy.

Results Overall weighted prevalence of healthcare autonomy was 76.5% (95% CI: 75.85–77.06). The odds of having healthcare autonomy were higher among women belonging to 25–34 years (aOR: 1.69, 95% CI: 1.52–1.87), and 35–49 years (aOR: 1.89, 95% CI: 1.65–2.17) age group, attaining secondary (aOR: 1.31, 95% CI: 1.14–1.50), and higher education (aOR: 1.61, 95% CI: 1.33–1.94), who were employed (aOR: 1.37, 95% CI: 1.26–1.50), who read newspaper/magazine at least once a week (aOR: 1.45, 95% CI: 1.13–1.84), having 1–2 (aOR: 1.91, 95% CI: 1.67–2.17), and 3 or more (aOR: 1.94, 95% CI: 1.65–2.27) living children, gave no birth in the last 3 years (aOR: 1.17, 95% CI: 1.06–1.29), and from urban areas (aOR: 1.43, 95% CI: 1.25–1.63).

Conclusion Around one-quarter of the women were not autonomous regarding their healthcare decision-making. So, it is necessary to implement strategies and policies that can enable and empower women in the healthcare aspects of their lives.

Keywords Healthcare autonomy, Decision-making, Women empowerment, Mixed-effect analysis, Bangladesh

†Rafsaniat Binte Mustafiz and Syed Sharaf Ahmed Chowdhury contributed equally to this manuscript.

*Correspondence:
Azaz Bin Sharif
azaz.sharif@northsouth.edu
[1]Department of Public Health, North South University, Dhaka 1229, Bangladesh
[2]Global Health Institute, North South University, Dhaka 1229, Bangladesh
[3]Public Health, School of Medicine and Dentistry, Griffith University, 4222 Gold Coast, QLD, Australia

Background

Autonomy for women entails the right of women to make decisions about their bodies and lives without interference from others and free from the patriarchal constraints of society [1]. The ability of a person to freely make decisions about issues relating to his/her personal problems on a technological, social, and psychological level is known as autonomy [2, 3]. The capacity and flexibility to act or make decisions for oneself and one's dependents in an unconstrained way while having unrestricted access to pertinent information and healthcare services is what is meant by autonomy in healthcare decision-making [2, 4]. One of the most prevalent forms of social ties-ins that may affect how individuals make decisions on a range of topics, including the provision of healthcare, is the complicated social tie-in inside people's lives and relationships between two people, especially [2, 5].

In many places around the world, women do not have this healthcare autonomy and are instead subjected to the decisions of men or elders, both in their families and in the wider community [6, 7] This lack of autonomy can have a significant impact on women's health, particularly on their reproductive health [6]. This can give rise to high maternal and child mortality, especially in developing countries [8]. In 2017, the global maternal mortality ratio was estimated to be 211 per 100,000 live births, with numbers as high as 163 per 100,000 live births in all of South Asia and 173 per 100,000 live births just in Bangladesh [9]. In a study done in India, it has emerged that the high autonomy of the mother is positively associated with higher survival of her children by ensuring the implementation of their own child-care decisions [10]. Apart from high maternal and infant mortality rates, lack of autonomy also gives rise to poor reproductive health in women [11] as well as under-nutrition [12].

In many parts of the world, especially in low to middle-income countries, women rarely have the same access to healthcare, education, and employment as men [13], and their health is often considered secondary importance [14]. Sometimes women may not perceive chronic issues like back pain or vaginal discharges as serious severe conditions that require attention [7]. The gender gap can also mean that women are often unable to get the resources and support they need to make decisions about their health and cannot access medical care [7]. A study done on South Asian countries has shown that most women do not partake in their own healthcare decisions in the majority of Nepal and approximately half of Bangladesh and Indian households [7].

However, with the progression of time, steps are being taken globally towards raising female education [15] which can directly lead to female empowerment [16]. The previous idea of "women are powerless and dependent upon men" [17] is no longer appropriate. Previous studies done in Ethiopia [8], Ghana [18] and Nepal [19] have shown that women's autonomy increases with increasing age, education, active employment, and number of children as well as with partner's education and active employment. According to the previous literature, women's age, women's education and occupation, place of residence, household wealth index, religion, parity, media exposure, husband's education, and occupation were most commonly found to be associated with women's healthcare autonomy [8, 18–20]. In Bangladesh, a previous study shows an association between decision-making, alone or jointly with a partner, and the use of maternal healthcare services. It emphasizes better spousal communication and cooperation to ensure better utilization of maternal health services [21]. Another study conducted on South Asian countries shows that women's healthcare decisions were made without involving them in approximately half of Bangladesh [7]. In Bangladesh, with its predominant notions of male dominance in decision-making [21], it is important to raise awareness and shed light on women's progress in education, employment, and overall domestic power in decision-making.

However, the question remains as to how much it has affected women's autonomy when it comes to healthcare decision-making. Previously, studies have been conducted [21] to determine the association between women's different decision-making autonomy and maternal healthcare-seeking behavior. Women's healthcare decision-making autonomy is found to play a significant role in improving maternal and child health outcomes [4]. Women's autonomy is a multidimensional concept [21], so it is important to determine which social aspects and factors are significant determinants. Autonomy may raise awareness of women's freedom to seek healthcare on their own. However, there is a dearth of research that addressed this issue in the Bangladeshi context; hence, we aimed to estimate the prevalence and identify the factors associated with healthcare decision-making autonomy among Bangladeshi women.

Methods

Study design and sampling

Data from the nationally representative Bangladesh Demography and Health Survey (BDHS) 2017-18 was used to find the prevalence and determinants of healthcare autonomy among women in Bangladesh. Considering each of the eight administrative divisions as the stratum, a two-stage stratified sampling design was used in the survey. Using the probability proportional to size, enumeration areas (EAs) were selected in the first stage, where 250 EAs and 425 EAs were selected, respectively, from the urban and rural regions. From the complete household listing of the enumeration areas, 30

households from each EA were selected in the second stage of the sampling, where systematic random sampling was the choice of sampling technique. The EAs were considered the primary sampling unit (PSU) during the sampling technique of this survey. A total of 20,250 households were selected, with 20,376 eligible women aged 15 to 49 years to be interviewed. Finally, 20,127 Bangladeshi women aged 15 to 49 years were interviewed. The details of the sampling technique are briefly discussed elsewhere [22]. We included 18,890 (weighted) reproductive-aged women in the final analysis and the participant's exclusion and selection process from the BDHS 2017-18 (IR file) data shown in Fig. 1.

Description of variables
Outcome variable
This study measured the healthcare decision-making autonomy as the outcome variable. To measure the autonomy among the women in terms of their healthcare, respondents were asked about the "usual person who decides the healthcare of the respondent." Participating women were given four choices for answering the question [22]. The women could have responded either as to take their own decision of healthcare (coded as 1), or decision with their partner (coded as 2), or only the partner deciding their healthcare (coded as 3), or other family members take this decision for her (coded as 4). For the convenience of the analysis, these responses were recoded into binary categories. Women who took decisions on their own or jointly with their partner were recoded as '1' and defined as 'having healthcare autonomy', when the decision was taken solely by partners or other family members, it was recoded as '0' and defined as 'not having healthcare autonomy' [4, 8].

Independent variables
Independent variables were chosen based on the previous literature [7, 8, 18, 23, 24]. Independent variables considered in this study were the age of women (15–24 years, 25–34 years, 35–49 years), educational status of women and their husbands (no education, primary, secondary, higher), employment status of the women (working, not working), husband's occupation (don't work, services/job, business, agriculture, others), religion (Muslim, Hindu, Buddhist/Christian), parity (none, 1–2, and 3 or more), place of residence (urban, rural), administrative division(Barishal, Chittagong, Dhaka, Khulna, Mymensingh, Rajshahi, Rangpur, Sylhet). Exposure to the media included the frequency of reading newspapers/ magazines, watching television, and listening to radio, which were categorized as not at all, less than once a week, and at least once a week. The response for the variables, current pregnancy and birth in the last 3 years (yes, no), was also considered as another variable for identifying the determinants of women's healthcare autonomy. The household wealth status was calculated based on the
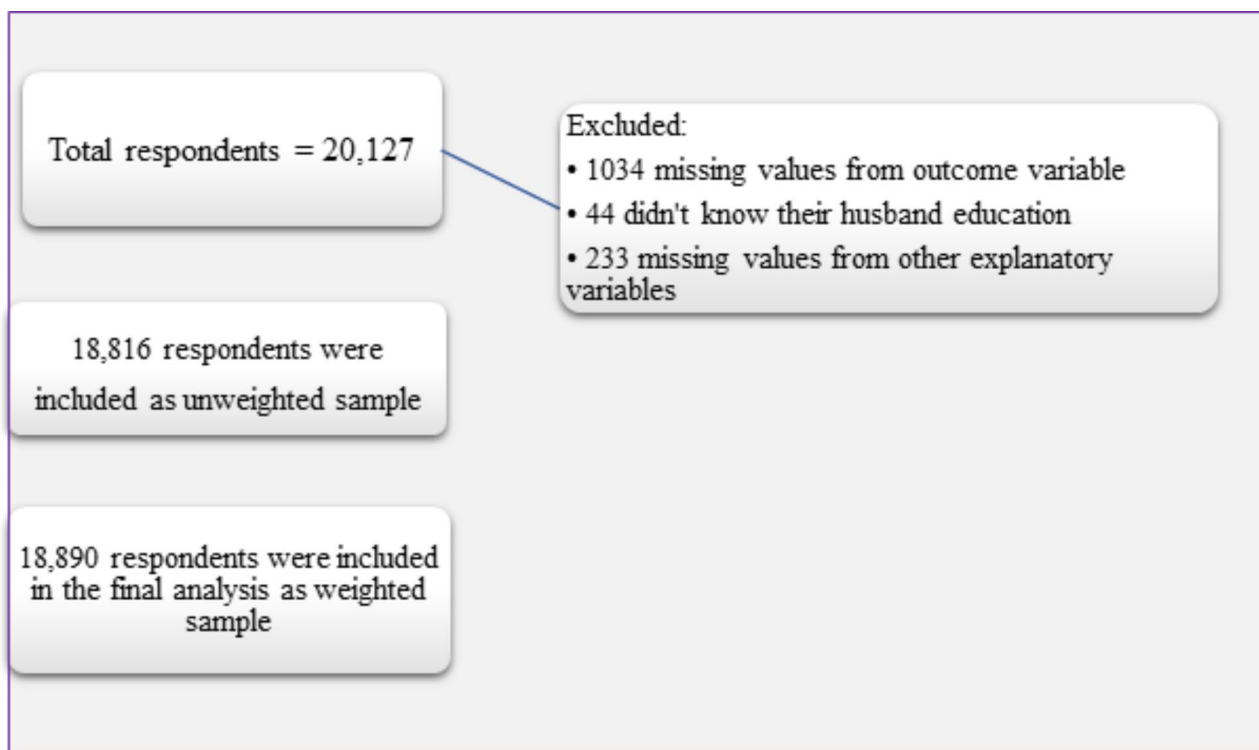

Fig. 1 Flow chart of the exclusion criteria and selection of the participants

Mustafiz *et al. BMC Women's Health*   (2025) 25:192

Page 4 of 12

ownership of different household assets using principal component analysis (PCA) [22]. Household wealth status was categorized into five quintiles as follows: poorest, poorer, middle, richer, and richest. The independent variables, along with their categories, have been listed in Table 1.

Statistical analysis

Both unweighted and weighted frequencies and percentages were calculated to show the background characteristics of the study participants. Considering the complex survey of BDHS, we used the *"svy"* command in STATA version 17.0 (StataCorp, College Station, TX, USA) to assign the sample weights to adjust for clustering effect and sample stratification. Since the BDHS 2017-18 used a two-stage stratified cluster sampling involving a hierarchical composition, a multilevel (mixed-effect) regression model would be an appropriate technique to consider that accounts for complex survey design-related variation [25]. Thus, we used the multilevel (mixed-effect) logistic regression model to identify the determinants of healthcare decision-making autonomy considering the cluster (EAs) variable as the level-2 factor. For the multilevel approach, first, we set an intercept-only model (null model) that was constructed without including any explanatory variables to estimate the cluster-level variance in having healthcare decision-making autonomy. Then the final adjusted model incorporating all the

explanatory variables was employed. Both the fixed-effects of various explanatory variables and random-effects at the cluster level were calculated. Cluster-level variance, intra-class correlation (ICC), and median odds ratio (MOR) were calculated as random effects for both models. Additionally, proportional change in variance (PCV), Deviance, Akaike information criterion (AIC), and Bayesian information criterion (BIC), of each model were estimated to compare the model fitness. Multi-collinearity among explanatory variables was checked using the variance inflation factor (VIF). The adjusted odds ratio (aOR), along with their respective 95% confidence intervals (CIs), were interpreted, and a p-value < 0.05 was considered as statistical significance.

Results

Background characteristics of study participants

The respondents were aged between 15 and 49 years and participated mainly from Dhaka (25.62% followed by Chittagong (17.88%), with 15.55% receiving no education, and among the educated, the majority received up to secondary education (40.42%). About 52.93% of women were reported to be unemployed. Respondents were mostly Muslim (90.60%), and about 94.01% were currently not pregnant; When it came to media exposure, the majority admitted to not reading newspapers/magazines (90.60%), but 55.22% of the participants watched television at least once a week. About 10.40% of the subjects had no living children, whereas a little more than half (53.67%) had 1−2 living children. A greater proportion of the women resided in rural areas (71.66%) and did not give birth in the last 3 years (73.75%). Respondents were almost equally distributed across the wealth index, ranging from the poorest (18.33%) to the richest (20.83%). (Table 2).

Prevalence and distribution of healthcare autonomy

Of the women aged 15−24, about 66.40% showed healthcare autonomy, which rises to above 80% after 25 years of age. Among the uneducated, a greater proportion (77.94%) is autonomous. Predictably, the number of women with no autonomy is lower among the employed (19.94%). More than 70% of the women show independence irrespective of their husband's education and occupation. More autonomy is prevalent among Buddhists and Christians (88.22%) than among Muslims (76.36%) and Hindus (76.48%). Autonomy increases with media exposure in the case of reading newspapers/magazines (76.05−85.64%) and watching television (75.13−77.37%). The prevalence of no autonomy was higher in currently pregnant women (29.81%) than the non-pregnant women (23.14%). Autonomy is found to be the highest in women with 3 or more living children (79.64%). Giving birth recently in the last 3 years lowers the number

Table 1 Explanatory variables along with their categories

Sl. no.	Variables	Categories
1	Age of women (years)	15–24, 25–34, 35–49
2	Education of women	No education, primary, secondary, higher
3	Women employment status	Working, not working
4	Husband's education	No education, primary, secondary, higher
5	Husband's occupation	Don't work, services/job, business, agriculture, others
6	Religion	Muslim, Hindu, Buddhist/Christian
7	Frequency of reading newspaper/magazine	Not at all, less than once a week, at least once a week
8	Frequency of listening radio	Not at all, less than once a week, at least once a week
9	Frequency of watching television	Not at all, less than once a week, at least once a week
10	Currently pregnant	Yes, no
11	Parity	None, 1–2, 3 or more
12	Birth in the last 3 years	No birth, gave birth
13	Household wealth status	Poorest, poorer, middle, richer, richest
14	Place of residence	Rural, urban
15	Administrative division	Barishal, Chittagong, Dhaka, Khulna, Mymensingh, Rajshahi, Rangpur, Sylhet

Mustafiz *et al. BMC Women's Health*   (2025) 25:192

Page 5 of 12

Table 2 Distribution of women having decision-making autonomy for healthcare among women in Bangladesh by explanatory variables (*N* = 18,890)

Variables	Weighted Total, *n* (%)	Women's autonomy in decision-making for healthcare [weighted *n* (%), row]		*P* value
		No	**Yes**	
Overall prevalence (95% CI)		23.54 (22.94–24.15)	76.46 (75.85–77.06)	
Age of women				
15–24 years	5401 (28.59)	1815 (33.60)	3586 (66.40)	< 0.001
25–34 years	6723 (35.59)	1343 (19.98)	5380 (80.02)	
35–49 years	6766 (35.82)	1288 (19.04)	5478 (80.96)	
Education of women				
No education	2937 (15.55)	648 (22.06)	2289 (77.94)	< 0.001
Primary	5873 (31.09)	1314 (22.38)	4559 (77.62)	
Secondary	7636 (40.42)	1927 (25.24)	5709 (74.76)	
Higher	2444 (12.94)	557 (22.79)	1887 (77.21)	
Women employment status				
Working	8892 (47.07)	1773 (19.94)	7119 (80.06)	< 0.001
Not working	9998 (52.93)	2673 (26.74)	7325 (73.26)	
Husbands' education				
No education	4071 (21.55)	867 (21.29)	3204 (78.71)	< 0.001
Primary	6070 (32.13)	1433 (23.61)	4637 (76.39)	
Secondary	5656 (29.94)	1456 (25.75)	4200 (74.25)	
Higher	3093 (16.38)	690 (22.32)	2403 (77.68)	
Husbands' occupation				
Don't work	401 (2.13)	96 (23.97)	305 (76.03)	0.001
Services/job	3718 (19.68)	802 (21.56)	2916 (78.44)	
Business	3407 (18.03)	876 (25.71)	2531 (74.29)	
Agriculture	4841 (25.63)	1149 (23.74)	3692 (76.26)	
Others	6523 (34.53)	1523 (23.35)	5000 (76.65)	
Religion				
Muslim	17,114 (90.60)	4045 (23.64)	13,069 (76.36)	0.007
Hindu	1638 (8.67)	385 (23.52)	1253 (76.48)	
Buddhist/Christian	138 (0.73)	16 (11.78)	122 (88.22)	
Frequency of reading newspaper/magazine				
Not at all	17,114 (90.60)	4098 (23.95)	13,016 (76.05)	< 0.001
Less than once a week	1160 (6.14)	260 (22.37)	900 (77.63)	
At least once a week	616 (3.26)	88 (14.36)	528 (85.64)	
Frequency of listening to the radio				
Not at all	17,979 (95.18)	4229 (23.52)	13,750 (76.48)	0.264
Less than once a week	535 (2.83)	111 (20.67)	424 (79.33)	
At least once a week	376 (1.99)	107 (28.44)	269 (71.56)	
Frequency of watching television				
Not at all	6750 (35.73)	1679 (24.87)	5071 (75.13)	< 0.001
Less than once a week	1709 (9.05)	407 (23.80)	1302 (76.20)	
At least once a week	10,431 (55.22)	2361 (22.63)	8070 (77.37)	
Currently pregnant				
Yes	1131 (5.99)	337 (29.81)	794 (70.19)	< 0.001
No	17,759 (94.01)	4109 (23.14)	13,650 (76.86)	
Parity				
None	1965 (10.40)	754 (38.39)	1211 (61.61)	< 0.001
1–2	10,137 (53.67)	2309 (22.78)	7828 (77.22)	
3 or more	6788 (35.93)	1382 (20.36)	5406 (79.64)	
Birth in the last 3 years				

Mustafiz *et al. BMC Women's Health*   (2025) 25:192

Page 6 of 12

Table 2 (continued)

Variables	Weighted Total, *n* (%)	Women's autonomy in decision-making for healthcare [weighted *n* (%), row]		P value
		No	Yes	
No birth	13,931 (73.75)	3096 (22.22)	10,835 (77.78)	< 0.001
Gave birth	4959 (26.25)	1350 (27.23)	3609s (72.77)	
Household wealth status				
Poorest	3463 (18.33)	784 (22.65)	2679 (77.35)	< 0.001
Poorer	3716 (19.67)	924 (24.86)	2792 (75.14)	
Middle	3828 (20.27)	978 (25.55)	2850 (74.45)	
Richer	3948 (20.90)	928 (23.50)	3020 (76.50)	
Richest	3935 (20.83)	832 (21.16)	3103 (78.84)	
Place of residence				
Rural	13,537 (71.66)	3400 (25.12)	10,137 (74.88)	< 0.001
Urban	5353 (28.34)	1046 (19.55)	4307 (80.45)	
Administrative division				
Barisal	1052 (5.57)	290 (27.56)	762 (72.44)	< 0.001
Chittagong	3378 (17.88)	824 (24.40)	2554 (75.60)	
Dhaka	4840 (25.62)	1014 (20.96)	3826 (79.04)	
Khulna	2201 (11.65)	514 (23.36)	1687 (76.64)	
Mymensingh	1464 (7.75)	284 (19.38)	1180 (80.62)	
Rajshahi	2635 (13.95)	607 (23.05)	2028 (76.95)	
Rangpur	2240 (11.86)	542 (24.20)	1698 (75.80)	
Sylhet	1080 (5.72)	371 (34.32)	709 (65.68)	

CI: Confidence Interval

Table 3 Multilevel model's random-effect results showing cluster-level variance in decision-making autonomy for healthcare among women in Bangladesh

Random-effect results	Null Model	Final Adjusted Model*
Variance (Standard error)	0.419 (0.038)	0.344 (0.034)
Intraclass correlation [ICC] (%)	11.30%	9.46%
Median odds ratio [MOR]	1.85	1.75
Model fitness		
Proportional change in variance [PCV] (%)	Reference	17.90%
Deviance	19964.98	19229.24[§]
Akaike's information criterion [AIC]	19968.98	19307.23
Bayesian information criterion [BIC]	19984.66	19613.09

*Compared to the null model, this model adjusted for all the explanatory variables

[§] Deviance reduction is statistically significant with p-value < 0.001 (LR test statistic, χ^2 = 735.74, df = 37)

of women with autonomy from 77.78 to 72.77%. It is seen that the poorest and the richest have the highest number of women with autonomy (77.35% and 78.84%, respectively). Expectedly, urban women have more healthcare autonomy (80.45%) than rural (74.88%) women. Around 80.62% of women in Mymensingh have autonomy, while in Sylhet it is only 65.68% (Table 2).

Factors associated with the healthcare autonomy

The intercept-only regression model (null model) indicated that the likelihood of women from various clusters having healthcare decision-making autonomy varied significantly (variance: 0.419, SE: 0.038). The ICC value of the null model suggested that 11.30% of the total variation in having healthcare decision-making autonomy was due to the differences from cluster to cluster. So, the null model justifies the application of a multilevel model in this study. Significant variations were also found in the final adjusted model, and the impact of cluster heterogeneity was shown by the MOR of 1.75. It says that a woman's chances of having decision-making autonomy in healthcare would rise by 1.75-fold on average if she relocated to a cluster where autonomy in healthcare is more common. Furthermore, the PCV shows that the included explanatory variables in the final adjusted model account for 17.90% of the variance in the probabilities of having healthcare decision-making autonomy across clusters (Table 3).

The mixed effect logistic regression analysis from Table 4 demonstrates that healthcare autonomy in women increases with age, education, employment, reading newspaper/magazine at least once a week, number of living children, residing in urban areas, not giving birth in recent 3 years, and being from the poorest household which is all statistically significant.

Table 4 Mixed-effect logistic regression analysis showing the determinants of decision-making autonomy for healthcare among Bangladeshi women

Variables	Decision-making autonomy for healthcare		
Fixed-effect results	aOR	95% CI	*P* value
Age of women			
15–24 years (RC)	1		
25–34 years	1.69	1.52–1.87	< 0.001
35–49 years	1.89	1.65–2.17	< 0.001
Education of women			
No education (RC)	1		
Primary	1.19	1.05–1.34	0.006
Secondary	1.31	1.14–1.50	< 0.001
Higher	1.61	1.33–1.94	< 0.001
Women employment status			
Working	1.37	1.26–1.50	< 0.001
Not working (RC)	1		
Husbands' education			
No education (RC)	1		
Primary	0.96	0.86–1.07	0.458
Secondary	0.89	0.78–1.00	0.052
Higher	0.91	0.78–1.08	0.279
Husbands' occupation			
Don't work (RC)	1		
Services/job	1.16	0.89–1.51	0.271
Business	0.90	0.69–1.17	0.416
Agriculture	0.96	0.74–1.25	0.768
Others	1.12	0.87–1.45	0.377
Religion			
Muslim (RC)	1		
Hindu	0.89	0.77–1.03	0.120
Buddhist/Christian	1.54	0.81–2.93	0.186
Frequency of reading newspaper/magazine			
Not at all (RC)	1		
Less than once a week	1.00	0.86–1.18	0.961
At least once a week	1.45	1.13–1.84	0.003
Frequency of listening radio			
Not at all (RC)	1		
Less than once a week	1.16	0.92–1.46	0.204
At least once a week	0.85	0.66–1.09	0.205
Frequency of watching television			
Not at all (RC)	1		
Less than once a week	1.04	0.91–1.20	0.540
At least once a week	1.10	1.00–1.21	0.048
Currently pregnant			
Yes	1.06	0.91–1.24	0.433
No (RC)	1		
Parity			
None (RC)	1		
1–2	1.91	1.67–2.17	< 0.001
3 or more	1.94	1.65–2.27	< 0.001
Birth in the last 3 years			
No birth	1.17	1.06–1.29	0.002
Gave birth (RC)	1		
Household wealth status			
Poorest	1.26	1.06–1.49	0.009

Mustafiz *et al. BMC Women's Health*   (2025) 25:192

Page 8 of 12

Table 4 (continued)

Variables	Decision-making autonomy for healthcare		
Fixed-effect results	**aOR**	**95% CI**	**P value**
Poorer	1.12	0.96–1.30	0.159
Middle	1.01	0.88–1.17	0.835
Richer	0.99	0.88–1.13	0.918
Richest (RC)	1		
Place of residence			
Rural (RC)	1		
Urban	1.43	1.25–1.63	< 0.001
Administrative division			
Barisal (RC)	1		
Chittagong	1.28	1.01–1.62	0.038
Dhaka	1.52	1.20–1.93	< 0.001
Khulna	1.32	1.04–1.67	0.024
Mymensingh	1.81	1.41–2.32	< 0.001
Rajshahi	1.30	1.02–1.65	0.031
Rangpur	1.18	0.93–1.50	0.180
Sylhet	0.89	0.70–1.14	0.345

CI: Confidence Interval, aOR: adjusted Odds Ratio, RC: Reference Category

Women belonging to the 25 to 34 years age group were 69% more likely to be autonomous (aOR: 1.69; 95% CI: 1.52 to 1.87), which rises to 89% among the women from the age group of 35 to 49 years (aOR: 1.89; 95% CI: 1.65 to 2.17) compared to those aged between 15 and 24 years. Women with secondary and higher education had 1.31 times (aOR: 1.31; 95% CI: 1.14 to 1.50), and 1.61 times (aOR: 1.61; 95% CI: 1.33 to 1.94) higher odds of having healthcare autonomy, respectively, compared to women having no formal education. Working women were 37% (aOR: 1.37; 95% CI: 1.26 to 1.50) more likely to be autonomous than unemployed women. Women who read newspapers/magazines at least once a week have 1.45 times (aOR: 1.45; 95% CI: 1.13 to 1.84) higher odds of having healthcare autonomy than those who don't read at all. The likelihood of women having autonomy was 91% (aOR: 1.91; 95% CI: 1.67 to 2.17), and 94% (aOR: 1.94; 95% CI: 1.65 to 2.27) higher among women having 1–2, and 3 or more living children, respectively, compared to those having no living children. The study showed urban women to be 43% (aOR: 1.43; 95% CI: 1.25 to 1.63) more likely to make their own healthcare decisions compared to rural women. It is also seen that women who did not give birth in the last 3 years were 17% (aOR: 1.17; 95% CI 1.06 to 1.29) more prone to have healthcare autonomy compared to those who gave birth (Table 4). It is also evident from Table 4 that women from the poorest wealth quintiles had 1.26 (aOR: 1.26; 95% CI: 1.06–1.49) times higher odds of having healthcare autonomy compared to the women belonging to the richest wealth quintile.

Discussion

The current study aimed to estimate the prevalence of healthcare decision-making autonomy and its determinant among the ever-married Bangladeshi women using 2017-18 BDHS data employing a multilevel (mixed-effect) logistic regression analysis.

Decision-making autonomy of women has been emerging for quite some time and is also a concern of public health as the evidence shows higher autonomy is associated with higher utilization in maternal health [23, 26–28]. In low-and-middle-income countries, especially in the South east Asian countries, women's decision-making autonomy is often constrained [5]. Women's healthcare autonomy in this study was defined as the women's ability to participate in decision-making regarding their own healthcare. This study aimed to compare women's absolutely no decision-making power to some or sole decision-making power regarding healthcare following the majority of the literature that categorized the healthcare autonomy as dichotomized [4, 7, 8, 29–36] including two Bangladesh studies [7, 36], and a systematic review [29]. While a few studies done in African context [3, 5, 37] considering a different categorization, there may be different focuses in their research based on contextual differences. It is to be noted that in Bangladesh, only ever-married women between the ages of 15 and 49 years were surveyed [22], which would be different from other countries where cohabitation other than marriage is also possible/legal. Contextually, household decision-making in Bangladesh is usually taken by the head of the household, predominantly a male. If a woman has decision-making power about their own health alone or jointly with her husband, then it better be considered as a

woman's autonomy in healthcare, which also manifested in DHS survey reports [22].

We found the prevalence of healthcare autonomy of women in Bangladesh to be 76.5% (95% CI: 75.85–77.06). This estimation is higher than the previous study conducted in South Asian countries [7], which showed only 27.3% of women in Nepal in 2001, 51.5% of Indian women in 1998-99 and about 45.7% of Bangladeshi women in 2004 were found to be autonomous in making their healthcare decisions. The increase in the prevalence might be due to the effect of higher access to information, easy availability of healthcare services, and greater awareness of their health, resulting in the higher autonomy of women in making decisions regarding their own healthcare. This discrepancy could be due to the noteworthy progress in women's empowerment giving women more autonomy in healthcare decision-making autonomy [38]. The prevalence of decision-making autonomy in Ghana was found to be almost similar, with 75.26% [18]. On the contrary, this finding is lower than the healthcare autonomy prevalence in Ethiopia [8]. This difference could be explained by the change in the geographic location and socio-cultural context.

Our study has found that older women have higher autonomy in making their healthcare decisions than the younger women. This result coincides with the study findings conducted previously in Bangladesh [39], India [40], Nepal [41], and Ethiopia [8]. The trend of male-dominated society in these countries could be one of the reasons why younger women are more conservative and hesitant to express their thoughts and desires than older women. One of the dimensions of decision-making autonomy is the maternal and reproductive decision making autonomy and healthcare utilization, which tends to increase with the increase in age of the women according to a previous study [8]. Older women are more likely to attain autonomy over their decisions, according to Jejeebhoy et al. [42] Another explanation of this finding could be that women with increased age are expected to be the victim of less violence by their partners and feel safe in expressing their decisions [43].

The odds of having decision-making autonomy were found to be higher in women with the increase in educational status. This finding has high correspondence with several studies [5, 8, 18, 35] including a review study [44] conducted on women's autonomy. The explanation for the higher odds might be the greater awareness of the women attaining higher education about their rights of free choice [18]. Besides, education provides women with a sense of self-confidence, and they tend to exercise their rights of gender equality, having their say in their own health [19, 45]. Another possible reason could be that educated women are likely to have educated partners, and the higher the educational status of the partner, the more autonomous the women were found to be in their healthcare decision-making, due to their lesser sexist ideologies [46, 47].

The findings from this study also estimated a significant association between employment and healthcare autonomy. This was found to be consistent with the studies carried out in Ethiopia [8], Southern Ethiopia [48], and Ghana [18]. Higher autonomy in working women could be because of the economic stability that facilitates the access of women to more information, and male dominance in decision-making is often challenged [45]. Again, working women have more self-confidence, encouraging them to participate in decision-making [44].

Women who were likely to read newspapers at least once a week had higher odds of decision-making autonomy for healthcare compared to those who didn't read newspapers at all. This finding corresponds with another study conducted in Southeast Asia [49]. This higher autonomy might be due to access to more information about the healthcare facility and service delivery among women having access to newspapers. Besides, the health-related columns and articles in the newspaper may be enlightening for the women who read newspapers more frequently which makes them aware of their health and gives them insight about when to seek healthcare.

In this study, increased parity has been found to be positively associated with healthcare decision-making autonomy. This result aligns with the previous study conducted in Nepal [19] and Bangladesh [21] using Demographic and Health Survey data, where the increased number of living children was also associated with the healthcare autonomy among the women. The probable cause behind the increase in the decision-making autonomy with the increased parity might be that higher parity is linked to the increased age of the mother, and in the South Asian context, older aged women are more likely to be empowered to take any decision compared to younger aged women [7]. Another plausible explanation of this finding could be that most of the decisions related to healthcare of women in Bangladesh are made by their mother-in-laws [50], and with the increase in parity, women are less likely to be the victim of aggression by the family in regard to the decision making autonomy [51].

We found that women belonging to the lower wealth quintile have higher autonomy compared to the women in the richest wealth quintile. The combination of social, economic, and cultural factors might contribute to this finding. In Bangladesh, women, especially those belonging to the lower wealth quintile, face significant economic challenges. Societal pressure and cultural expectations combined with the economic necessities drive them to seek employment in the informal sectors. Low educational attainment and lack of job security among the women in the lower wealth quintile compel them to seek

more outside jobs than the women in the higher wealth quintile. Evidence suggests that women with more outside jobs have higher autonomy in decision-making [52, 53] which might also influence their healthcare decision-making. Besides, different awareness and empowerment programs by the government and non-government organizations in Bangladesh mainly focus on women belonging to the lower wealth quintile. These programs often contain information relating to reproductive health, rights, and healthcare services, which could be a contributing factor for higher healthcare decision-making autonomy among the women in the lower wealth quintile compared to their counterparts.

Place of residence was found to be significantly associated with decision-making autonomy. Women residing in the urban areas had higher odds of making their own healthcare decisions than those from rural areas. This finding aligns with the findings of a review study conducted in developing countries [44] and with several other studies [42, 54, 55]. This could be potentially explained by the greater access to health facilities, higher exposure to media, health information, and health education. Besides, women from urban areas are more aware of their right to make decisions as well as are more knowledgeable about their health and well-being [8, 14, 56]. Consequently, this higher access, awareness, and knowledge of urban women could contribute to their greater autonomy in making decisions about their own healthcare [8, 14].

Limitations

This study, however, comes with a few limitations. Being cross-sectional, it fails to establish a temporal relationship between the explanatory and outcome variables. There is also potential for recall and interviewer bias. In this study, we did not address all the components of decision-making autonomy, which could have affected the result since autonomy itself is a multidimensional concept. Furthermore, qualitative and longitudinal research is necessary to understand the in-depth scenario of decision-making autonomy, considering all the dimensions of the concept and its effect on healthcare among Bangladeshi women.

Conclusions

Although healthcare autonomy among women has increased significantly in the last two decades, one-quarter of Bangladeshi women still do not identify as autonomous in healthcare decision-making. This study reveals that educated, employed, older, and urban women tend to have higher autonomy to make their own decisions for healthcare. To improve women's autonomy, it is necessary to create awareness among the male partners and family members of the women about the importance of female autonomy and its effect on the women's physical, mental, and reproductive health, which could result in delegation of more decision-making power to the women. This could be achieved by comprehensive intervention design focusing on the significant determinants of autonomy found in this study, like women's education and employment. Besides, rural women should be given special attention in regard to improving their decision-making capacity. Equal importance to other determinants of the healthcare decision-making autonomy like the age of women at birth, number of children and interval between births should be given. In this study, we also recommend that, grassroots initiatives should be taken to educate all women with not only formal education but also their rights and boundaries.

Abbreviations

EA   Enumeration Area
BDHS   Bangladesh Demographic and Health Survey
RC   Reference Category
OR   Odds Ratio
CI   Confidence Interval

Declarations

Consent for publication
Not applicable.

Competing interests
The authors declare no competing interests.

Ethics approval and consent to participate
The study used deidentified data from the Demographic Health Survey program, which has already received ethical approval from the participating countries, no further ethical permission was sought to carry out this research. Data was collected from online source (https://dhsprogram.com) with appropriate request. Written informed consent from the respondents enrolled in the survey and other ethical review documents are available at: https://dhsprogram.com/methodology/Protecting-the-Privacy-of-DHS-Survey-Respondents.cfm. The data set is available online publicly for all researchers, hence there is no need to approve.

Mustafiz *et al. BMC Women's Health*   (2025) 25:192

Page 11 of 12

References

1. OHCHR. Women's autonomy, equality and reproductive health. (2023).
2. Idris IB, et al. Women's autonomy in healthcare decision making: a systematic review. BMC Womens Health. 2023;23:643.
3. Asabu MD, Altaseb DK. The trends of women's autonomy in health care decision making and associated factors in Ethiopia: evidence from 2005, 2011 and 2016 DHS data. BMC Womens Health. 2021;21:1–9.
4. Alemayehu M, Meskele M. Health care decision making autonomy of women from rural districts of Southern Ethiopia: A community based cross-sectional study. Int J Womens Health. 2017;9:213–21.
5. Osamor P, Grady C. Factors associated with women's health care decision-making autonomy: empirical evidence from Nigeria. J Biosoc Sci. 2018;50:70–85.
6. Bloom SS, Wypij D, Das Gupta M. Dimensions of women's autonomy and the influence on maternal health care utilization in a North Indian City. Demography. 2001;38:67–78.
7. Senarath U. Nalika Sepali Gunawardena. Women's autonomy in decision making for health care in South Asia. Asia-Pacific J Public Heal. 2009;21:137–43.
8. Tesema GA, et al. Spatial clusters distribution and modelling of health care autonomy among reproductive-age women in Ethiopia: Spatial and mixed-effect logistic regression analysis. BMC Health Serv Res. 2021;21:1–12.
9. WHO, UNFPA UNICEF. And the U. N. P. D. Trends in maternal mortality: 2000 to 2017. Geneva; 2019.
10. Das Gupta M. Death clustering, mothers' education and the determinants of child mortality in rural Punjab, India. Popul Stud (NY). 1990;44:489–505.
11. Gupta M. Das. Life course perspectives on women's autonomy and health outcomes. Am Anthropol. 1995;97:481–91.
12. Tebekaw Y. The demographic transition and development in Africa. Demogr Transit Dev Afr. 2011;105–24. https://doi.org/10.1007/978-90-481-8918-2.
13. Azad AD, Charles AG, Ding Q, Trickey AW, Wren SM. The gender gap and healthcare: associations between gender roles and factors affecting healthcare access in central Malawi, June–August 2017. Arch Public Heal. 2020;78:1–11.
14. Wathen NC, Harris RM. I try to take care of it myself.' how rural women search for health information. Qual Health Res. 2007;17:639–51.
15. UN Women. Progress on the sustainable development goals: The gender snapshot 2022. (2022).
16. UNFPA. Women's decision-making on and equal access to sexual and reproductive health. (2020).
17. Cain M, Khanam SR, Nahar S. Class, patriarchy, and women's work in Bangladesh. Popul Dev Rev. 1979;5:405–38.
18. Duah HO, Adisah-Atta I. Determinants of health care decision making autonomy among mothers of children under five years in Ghana: analysis of 2014 Ghana demographic and health survey. Int J Women's Heal Wellness. 2017;3:1–7.
19. Acharya DR, Bell JS, Simkhada P, Van Teijlingen ER, Regmi PR. Women's autonomy in household decision-making: A demographic study in Nepal. Reprod Health. 2010;7:1–12.
20. Ahmed S, Creanga AA, Gillespie DG, Tsui AO. Economic status, education and empowerment: implications for maternal health service utilization in developing countries. PLoS ONE. 2010;5:e11190.
21. Ghose B, et al. Women's decision-making autonomy and utilisation of maternal healthcare services: results from the Bangladesh demographic and health survey. BMJ Open. 2017;7:1–8.
22. NIPORT; ICF International. Bangladesh demographic and health survey 2017-18. Dhaka. Bangladesh: NIPORT, Mitra and Associates, and ICF International; 2020.
23. Anderson S, Eswaran M. What determines female autonomy? Evidence from Bangladesh. J Dev Econ. 2009;90:179–91.
24. Woldemicael G, Tenkorang EY. Women's autonomy and maternal health-seeking behavior in Ethiopia. Matern Child Health J. 2010;14:988–98.
25. Khan HR, Shaw E. Multilevel logistic regression analysis applied to binary contraceptive prevalence data. J Data Sci. 2011;9:93–110.
26. Mullany BC, Hindin MJ, Becker S. Can women's autonomy impede male involvement in pregnancy health in Katmandu. Nepal? Soc Sci Med. 2005;61:1993–2006.
27. Brunson EK, Shell-Duncan B, Steele M. Women's autonomy and its relationship to children's nutrition among the Rendille of Northern Kenya. Am J Hum Biol. 2009;21:55–64.
28. Fantahun M, Berhane Y, Wall S, Byass P, Högberg U. Women's involvement in household decision-making and strengthening social capital - Crucial factors for child survival in Ethiopia. Acta Paediatr Int J Paediatr. 2007;96:582–9.
29. Gebeyehu NA, et al. Women decision-making autonomy on maternal health service and associated factors in low-and middle-income countries: systematic review and meta-analysis. Women's Heal. 2022;18:17455057221122618.
30. Aragaw FM, et al. Individual and community level predictors of women's autonomy in health care decision-making among youth in East African countries: a multilevel analysis. BMJ Open. 2023;13:e066975.
31. Ariyo T, Jiang Q. Mothers' healthcare autonomy, maternal-health utilization and healthcare for children under-3 years: analysis of the Nigeria DHS data (2008–2018). Int J Environ Res Public Health. 2020;17:1816.
32. Lee R, Kumar J, Al-Nimr A. Women's healthcare decision-making autonomy by wealth quintile from demographic and health surveys (DHS) in sub-Saharan African countries. Int J Womens Heal Wellness. 2017;3:1353–2474.
33. Ekhator-Mobayode UE, Kelly J, Rubin A, Arango DJ. Intimate partner violence and household decision making autonomy: effects of the Malian conflict on women. (2021).
34. Negash WD, Kefale GT, Belachew TB, Asmamaw DB. Married women decision making autonomy on health care utilization in high fertility sub-Saharan African countries: A multilevel analysis of recent demographic and health survey. PLoS ONE. 2023;18:e0288603.
35. Sougou NM, Bassoum O, Faye A, Leye MMM. Women's autonomy in health decision-making and its effect on access to family planning services in Senegal in 2017: A propensity score analysis. BMC Public Health. 2020;20:1–9.
36. Kirkwood EK, Raihana S, Alam NA, Dibley MJ. Women's participation in decision-making: analysis of Bangladesh demographic and health survey data 2017–2018. J Int Dev (2023).
37. Ameyaw EK, Tanle A, Kissah-Korsah K, Amo-Adjei J. Women's Health Decision-Making Autonomy and Skilled Birth Attendance in Ghana. Int. J. Reprod. Med. 2016, 1–9 (2016).
38. Kumar Paul G, Chandro Sarkar D, Naznin S. Present situation of women empowerment in Bangladesh. Int J Math Stat Invent Www Ijmsi Org. 2016;4:31–8.
39. Haider MR, Qureshi ZP, Khan MM. Effects of women's autonomy on maternal healthcare utilization in Bangladesh: evidence from a National survey. Sex Reprod Healthc. 2017;14:40–7.
40. Mondal D, Karmakar S, Banerjee A. Women's autonomy and utilization of maternal healthcare in India: evidence from a recent National survey. PLoS ONE. 2020;15:1–12.
41. KC S, Neupane S. Women's autonomy and skilled attendance during pregnancy and delivery in Nepal. Matern Child Health J. 2016;20:1222–9.
42. Jejeebhoy S, Jejeebhoy SJ, Sathar ZA. Population and Development Review vol. 27 687–712 at (2001).
43. Ebrahim NB, Atteraya MS. Women's Decision-Making autonomy and their attitude towards Wife-Beating: findings from the 2011 Ethiopia's demographic and health survey. J Immigr Minor Heal. 2018;20:603–11.
44. Osamor PE, Grady C. Women's autonomy in health care decision-making in developing countries: A synthesis of the literature. Int J Womens Health. 2016;8:191–202.
45. Kabeer N. Gender equality and women's empowerment: A critical analysis of the third millennium development goal. Gend Dev. 2005;13:13–24.
46. Sultana AM. Factors effect on women autonomy and decision-making power within the household in rural communities. J Appl Sci Res. 2011;7:18–22.
47. Speizer IS, Story WT, Singh K. Factors associated with institutional delivery in Ghana: the role of decision-making autonomy and community norms. BMC Pregnancy Childbirth. 2014;14:1–13.
48. Eshetu K, Gelaw B, Lankrew T, Assefa A, Demeke T. Women's Decision-Making Autonomy In Maternal Health Service Utilization And Associated Factors Among Reproductive Age Women In Southern, Ethiopia. 1–12 (2021).
49. Sohn M, Jung M. Effects of empowerment and media use by women of childbearing age on maternal health care utilization in developing countries of Southeast Asia. Int J Heal Serv. 2020;50:32–43.
50. Dali SM, Thapa M, Shrestha S. Educating Nepalese women to provide improved care for their childbearing daughters-in-law. World Health Forum. 1992;13:353–4.
51. Teenage Preg and Gender Violance.Pdf.

52. Ristiana R, Handayani D. Does work influence women's autonomy or does autonomy deliberate women to work? in E3S Web of Conferences vol. 74 10013EDP Sciences, (2018).

53. Roy P, Haque S, Jannat A, Ali M, Khan M. Contribution of women to household income and decision making in some selected areas of Mymensingh in Bangladesh. Progress Agric. 2017;28:120–9.

54. Kritz MM, Makinwa-Adebusoye P. Determinants of women's decision-making authority in Nigeria: the ethnic dimension. Sociol Forum. 1999;14:399–424.

55. Mistry R, Galal O, Lu M. Women's autonomy and pregnancy care in rural India: A contextual analysis. Soc Sci Med. 2009;69:926–33.

56. Kloos H. Primary health care in Ethiopia under three political systems: community participation in a war-torn society. Soc Sci Med. 1998;46:505–22.