

Integrating gender in medical curriculum of Bangladesh: exploring perceptions, prospects and challenges

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Abstract

Background

Gender is an important biological, behavioral, societal and cultural factor influencing affecting health and health care utilization. In medical education, gender tends to be less prioritized and limiting gender sensitivity among medical professionals leading to compromised and substandard health care. Our study aims to investigate the gender perceptions among medical students and practitioners identifying possibilities and challenges in better integrating gender into medical curriculum.

Method

Quantitative data were collected from 249 respondents (151 medical students, 33 service providers and 65 service recipients) by using structured questionnaires. Descriptive and univariate analysis were conducted to assess socio-demographic characteristics and gender perceptions of participants respectively. To determine the relations of mean perception score with socio-demographic variables, we used one-way ANOVA tests. Finally, we performed multivariate linear regression to determine socio-demographic variables predicting perceptions of respondents towards gender. SPSS version 25 was used for analysis. For qualitative data 16 key informants (6 administrative staffs, 2 policy makers and 8 teaching staffs) were interviewed. The interviews were analyzed manually using thematic analysis procedure.

Result

Mean score of perception on 'gender' among medical students and medical professionals were 10.29 ($SD = 2.70$) with 52% positive perception and 9.94 ($SD = 2.98$) with 50% positive perception out of 20 respectively. Significantly greater perception was found among female compared to male. Mean perception score was found significantly higher among respondents aged 20–25 years and students studying in Government medical college. In terms of opinion regarding gender integration in medical or dental curriculum, maximum respondents (91%) thought that inclusion may initiate gender sensitive attitude and respectful behavior and 85% respondents thought people's health care rights will be ensured. Regarding challenges of integrating greater gender content in medical curriculum, majority service providers (42%) said there are no challenges, but 70% of students responded that due to the huge syllabus, it may create an extra burden to students. The majority of respondents recommended to start reviewing curriculum by a review board (91%) and to develop an intention module (85%). Qualitative findings supported the quantitative results.

Conclusion

An early sensitization on gender among medical personnel and its influence on health care system could contribute in ensuring gender equitable health services and achieving SDGs.

Introduction

Gender is an essential determinant of health and illness (1). Since 1960, the concept of 'gender' has been used in social science, referring to the constantly ongoing construction of male and female based on socio-cultural norms and power while unchangeable biological or chromosomal differences between male and female refers to sex (1–3). However, in medical science, sex and gender cannot be discretely separated. By modifying one's behavior and lifestyle, biological sex can influence health while gender behavior can modify biological factors, thereby health (4).

Several factors such as biological, psychological, social, cultural and behavioral factors tied to unequal gender relations between people of different gender identities, coupled with social inequality and economic deprivation creates gender

differences or sex-specific vulnerabilities, affecting the manifestation, epidemiology and pathophysiology of diseases and health care utilization (5, 6). In previous studies, researchers argued that social inequalities between men, women and transgender people are responsible for existing disparities in health system, in accessing health care services, treatment, behavior of health care providers etc. (7–9). Gender-based inequalities were identified as a pivotal determinant of health at the International Conference on Population and Development (ICPD), Cairo, Egypt in 1994, followed by the Fourth World Conference on Women, Beijing, China in 1995 (10, 11).

In medical education, gender has been largely ignored occupying a marginal position (12, 13). Researchers reported that several diverse factors such as age, gender, culture, ethnicity, religious beliefs, sexual orientation, disabilities etc. have impacted medicine (4). Medicine has been claimed to be 'gender blind', 'male biased' and 'androcentric' because knowledge is predominantly derived from and about men's health and their experiences, including forming the basis of describing signs and symptoms of illness (1). This gender bias leads to limited gender sensitivity among medical professionals, contributing to substandard and compromised health care for both male and female (14). Medical students have to go through the large number of voluminous textbooks but receive little opportunities to learn about complexities of social determinants of health and socio-political-cultural issues (15). Textbooks are the keystones of learning process, so medical textbooks should include issues related to gender and sexual inequalities, violence and culturally defined norms that adversely affect health of men and women in society (15).

Gender competency is essential for health care professionals to provide effective and appropriate health care services (13). Medical students need to be aware because clinical relevance, gender roles and stereotypes can affect their professional activities (4). Over the past decades, the importance of gender integration into medical science has been increasingly acknowledged (16, 17). In 2007, the World Health Organization (WHO) acknowledged the systematic integration of gender into medical curriculum specifically in undergraduate or pre-service training curriculum to reduce gender inequalities in health (9). The meeting report of WHO Geneva, Women and Health (GWH), 2006, documented the international efforts in integrating gender topic in all years of medical curricula (15). Many low, middle and high-income countries adopted initiatives to integrate gender in medical curriculum. Chulalongkorn medical school in Thailand integrated gender in their medical curriculum in 2003–2004 session followed by a questionnaire-based evaluation program in 2006 (18). The medical education of Turkey and China integrate gender as a part of sexuality, sexual and reproductive health and medical curricula of Philippines include gender in intimate partner and family violence (18). In India, National Health Policy, 2017 included gender sensitive health care facilities (19).

In order to create 'socially relevant and responsive medical professionals', it is essential to educate medical students in such a way that they can be able to demonstrate essential competence in providing comprehensive and high quality health care services with empathy and respects (20). Gender inclusion in medical education system is one of the way to ensure the equitable health care services and achieve Sustainable Development Goals (SDG) (7). Incorporating gender-specific topics in medical education helps to apply all the concepts of health and health care, so that everyone irrespective of age and sex can receive health care in accordance with their needs including transgender persons who experience particular health disparities (21). Our present study aims to assess the gender perceptions or views among medical students and professionals in Bangladesh identifying the possibilities and challenges in integrating gender specific topic into medical curriculum in order to establish a gender sensitive medical education based on previously developed 'Gender Equity Strategy (GES)'(22).

Methods

The study adopted a mixed method design incorporating both quantitative and qualitative approaches. Data were collected from three medical institutions: one medical university, Bangabandhu Sheikh Mujib Medical University (BSMMU) and two medical colleges: Government medical college: Mymensingh Medical College Hospital (MMCH) and Private medical college: Bangladesh Medical College and Hospital (BMCH). Random survey among existing and former health care providers from three selected medical institutes ($n=33$), postgraduate resident students from BSMMU ($n=50$), undergraduate medical students from MMCH and BMCH (101), health care service recipients who were treated from these three hospitals were conducted (65).

Quantitative interviews were done to assess the gender views and perceptions of health care service providers, both undergraduate and postgraduate medical (MBBS) and dental (BDS) students as well as health care service recipients or patients. We interviewed 1st to 5th year MBBS students followed by BDS students (1st to 4th year), postgraduate students enrolled in MD (Doctor of Medicine), MS (Master of surgery) residency or non-residency courses on different subjects. Besides we interviewed teaching staff, administrators of medical institutes (Dean or Head of the department) and policymakers who are directly involved in reviewing medical curricula for obtaining their expert opinion. 16 Key Informant Interviews (KIs) were done among administrative staff (n=6), policy makers (n=2), and teaching staff (n=8).

Measures:

For quantitative survey, three different pre-tested structured questionnaires were used for three categories of study population such as medical students, health care service providers and recipients or patients. The quantitative data collection tools were pre-tested in Bangabandhu Sheikh Mujib Medical University. For finalizing the study methods and tools a methodology validation workshop with expert groups was also held on 26th May, 2019. Data collection tools contained questions regarding socio-demographic information, perception about gender and health relation, suggestions on gender inclusion in medical curriculum.

Socio-demographic section of three categories of respondents included questions regarding age, sex, education, employment status, occupation and name of institutions where they work or came for treatment purpose. We did not find any previous validated questionnaire on this topic. So, to assess the perceptions of the respondents (medical students and service providers or practitioners) about gender, a total 20 items of structured questions with three possible responses ('yes', 'no' and 'don't know') were used. Then the 'yes' response was coded as 1, while 'no' / 'don't know' responses were coded as 0 and combinedly named as 'no' (*e.g. do men inform family about their illness*). After that in nine questions, we renamed the response 'yes' as 'agree' and 'no' as 'disagree' (*e.g. health needs of men and women are different*) and in two questions, 'yes' response was renamed as 'good' while 'no' as 'bad' (*e.g. influence of gender on women's health*). By summatting the raw scores of 20 items ranged from 0 to 20 (lowest score: 0 and highest score: 20) a total perception score of the respondents about gender was obtained. Higher score indicating greatest level of perception about gender. In terms of suggestions, data collection tools included some questions regarding opinion of respondents (medical students and service providers) about effects, probable challenges and effective solutions during integration of gender in greater proportion.

Two different KII guidelines were used to conduct qualitative interview of teaching stuffs and administrators/policymakers. We have pre-tested the developed guidelines by interviewing selected respondents from Bangladesh Medical College and Hospital. After pre-testing we have finalized the interview guidelines. All data collection tools and guidelines were developed in English and translated into Bengali. These tools were then modified for precision and clarity. All the quantitative and qualitative data collection tools and guidelines will be available on request.

Data analysis:

Quantitative analysis: Descriptive statistics (frequency, percentage, mean standard deviation) and first order analysis (Chi-square test) were performed to summarize the socio-demographic characteristics of study participants and distribution of the perception items with sex and occupation. T-tests or one-way ANOVA tests were performed to determine relations of the mean perception scores with socio-demographic characteristics of respondents. Finally, the factors that significantly differed in terms of perception scores, were included into the multivariate linear regression analysis, with perception score as a dependent variable. All statistical tests were considered at 95% confidence interval with a p-value less than 0.05. Statistical software; SPSS version 25 was used to analyze data.

Qualitative analysis: Qualitative data analysis was started with the first piece of information. For every interview, a full listing, whether of interviews, field notes or other items have been drawn up. Each transcript carries a unique identifier. As soon as data is collected, data processing was started. The principal investigator, and two researchers in the team initiated reviewing the data and processing it for themes or patterns. The qualitative data were analyzed under pre-determined themes and

emerging themes. Data analysis was conducted manually. Any particularly noticeable or curious finding was probed as part of the qualitative component of the study.

Ethical consideration: Formal ethical approval was taken from Institutional Review Board of Bangabandhu Sheikh Mujib Medical University in March-April, 2019. Respondents were briefed about the study background and purpose and the potential roles they would have in the study. The eligible and willing participants were enrolled for interviews. In the case of a refusal, the next suitable respondent was approached. A set of pre-tested questionnaires and guidelines were used to collect quantitative and qualitative data. After informed, trained research assistants collected information from the respondents.

Results

Survey findings:

Table 1: Demographic characteristics of the respondents' (N=249)

Medical students (n=151)		Service Providers (n=33)		Service Recipient (n=65)	
Variables	n (%)	Variables	n (%)	Variables	n (%)
Age		Age		Age	
<20 y	14 (9.3)	(25-30) y	3 (9.1)	<20 y	4 (6.2)
(20-25) y	87 (57.6)	>30 y	30 (90.9)	(20-25) y	15 (23.1)
>25 y	50 (33.1)	Sex		(26-30) y	19 (29.2)
Sex		Male	19 (57.6)	>30 y	27 (41.5)
Male	72 (47.7)	Female	14 (42.4)	Sex	
Female	79 (52.3)	Employment rank or position		Male	21 (27.7)
Student type		Professor/ Consultant	6 (18.2)	Female	44 (67.7)
Undergraduate student	101 (66.9)	Assistant/Associate Professor	9 (27.3)	Year of schooling	
Postgraduate student	50 (33.1)	Lecturer/MO/Register	15 (45.5)	Never go to school	9 (13.8)
Institute		Intern doctor	3 (9.1)	(1-5) y	27 (41.5)
Medical University	50 (33.1)	Institute		(6-10) y	23 (35.4)
Government Medical College	51 (33.8)	Medical University	10 (30.3)	>10 y	6 (9.2)
Private Medical College	50 (33.1)	Government Medical College	10 (30.3)	Occupation	
		Private Medical College	13 (39.4)	Service/business/self-employed	18 (27.7)
				Housewife/ Students/others	47 (72.3)
Institute visited					
				Medical University	22 (33.8)
				Government Medical College	22 (33.8)
				Private Medical College	21 (32.3)

In terms of socio-demographic characteristics among medical students, most of them (58%) were at the range of 20-25 years of age, 52% were female, majority of them (67%) were studying at undergraduate levels and almost equal number of the data were collected from three institutes (Table 1). Among service providers who directly delivered health care services to the patients, majority of them (91%) were more than 30 years old, 58% were male, most of them (46%) were mid-level practitioners such as medical officers or registers or lecturers and majority data (39%) were collected from doctors practicing in Private medical college. And lastly among respondents who receive health care services, majority of them (48%) were >30 years old, 68% were female, 42% had (1-5) years of schooling, 72% were housewives or students and almost equal number of data were collected from three institutes.

Table 2: Distribution of each perception items and sex and occupation differences (N=184)

Variables	Medical students (n=151)				Service providers (n=33)				
	Total n (%)	Male n (%)	Female n (%)	P value	Total n (%)	Male n (%)	Female n (%)	P value	
Gender is a socially constructed roles and responsibilities of male and female and it is a social indicator									
Agree	104 (68.9)	50 (48.1)	54 (51.9)	1.00	0 (0)	0 (0)	0 (0)	0	
Disagree	47 (31.1)	22 (46.8)	25 (53.2)		33 (100)	19 (57.6)	14 (42.4)		
Idea about gender sensitive healthcare services									
Yes	45 (30.2)	20 (44.4)	25 (55.6)	0.72	20 (60.6)	11 (55.0)	9 (45.0)	1.00	
No	104 (69.8)	51 (49.0)	53 (51.0)		13 (39.4)	8 (61.5)	5 (58.5)		
Influence of gender on men's health									
Good	117 (83.6)	54 (46.2)	63 (53.8)	0.37	25 (89.3)	13 (52.0)	12 (48.0)	1.00	
Bad	23 (16.4)	8 (34.8)	15 (65.2)		3 (10.7)	2 (66.7)	1 (33.3)		
Influence of gender on women's health									
Good	29 (19.9)	22 (75.9)	7 (24.1)	<0.001	9 (29.0)	6 (66.7)	3 (33.3)	0.45	
Bad	117 (80.1)	45 (38.5)	72 (61.5)		22 (71.0)	11 (50.0)	11 (50.0)		
Gender influence on response to illness among men									
Inform family about illness	Yes	106 (84.1)	48 (45.3)	58 (54.7)	0.81	22 (71.0)	10 (45.5)	12 (54.5)	0.13
	No	20 (15.9)	10 (50.0)	10 (50.0)		9 (29.0)	7 (77.8)	2 (22.2)	
Agreed to seek care from hospital	Yes	102 (79.1)	49 (48.0)	53 (52.0)	1.00	19 (61.3)	10 (52.6)	9 (47.4)	1.00
	No	27 (20.9)	13 (48.1)	14 (51.9)		12 (38.7)	7 (58.3)	5 (41.7)	
Take treatment from hospital	Yes	90 (72.6)	38 (42.2)	52 (57.8)	0.07	20 (64.5)	12 (60.0)	8 (40.0)	0.47
	No	34 (27.4)	21 (61.8)	13 (38.2)		11 (35.5)	5 (45.5)	6 (54.5)	
Concern about illness	Yes	74 (57.8)	35 (47.3)	39 (52.7)	1.00	9 (29.0)	8 (88.9)	1 (11.1)	0.02
	No	54 (42.2)	26 (48.1)	28 (51.9)		22 (71.0)	9 (40.9)	13 (59.1)	
Gender influence on response to illness among women									
Inform family about illness	Yes	24 (21.8)	9 (37.5)	15 (62.5)	0.26	2 (6.5)	2 (100.0)	0 (0)	0.48

	No	86 (78.2)	44 (51.2)	42 (48.8)		29 (93.5)	15 (51.7)	14 (48.4)	
Agreed to seek care from hospital	Yes	24 (22.0)	13 (54.2)	11 (45.8)	0.49	6 (19.4)	3 (50.0)	3 (50.0)	1.00
	No	85 (78.0)	39 (45.9)	46 (54.1)		25 (80.6)	14 (56.0)	11 (44.0)	
Take treatment from hospital	Yes	13 (11.8)	9 (69.2)	4 (30.8)	0.14	4 (12.9)	3 (75.0)	1 (25.0)	0.61
	No	97 (88.2)	44 (45.4)	53 (54.6)		27 (87.1)	14 (51.9)	13 (48.1)	
Concern about illness	Yes	58 (51.3)	24 (41.4)	34 (58.6)	0.35	13 (41.9)	7 (53.8)	6 (46.2)	1.00
	No	55 (48.7)	28 (50.9)	27 (49.1)		18 (58.1)	10 (55.6)	8 (44.4)	
Health needs of men and women are different									
Agree		135 (89.4)	61 (45.2)	74 (54.8)	0.11	27 (81.8)	17 (63.0)	10 (37.0)	0.36
Disagree		16 (10.6)	11 (68.8)	5 (31.2)		6 (18.2)	2 (33.3)	4 (66.7)	
Gender discrimination during accessing healthcare services									
Agree		139 (92.1)	63 (45.3)	76 (54.7)	0.07	29 (87.9)	15 (51.7)	14 (47.3)	0.12
Disagree		12 (7.9)	9 (75.0)	3 (25.0)		4 (12.1)	4 (100.0)	0 (0)	
Behavior towards women while seek care									
Active listening of complaints	Agree	80 (82.5)	42 (52.5)	38 (47.5)	0.79	19 (57.6)	11 (57.9)	8 (42.1)	1.00
	Disagree	17 (17.5)	8 (47.1)	9 (52.9)		14 (42.4)	8 (57.1)	6 (42.9)	
Provide adequate time	Agree	47 (60.3)	20 (42.6)	27 (57.4)	0.49	18 (54.5)	9 (50.0)	9 (50.0)	0.48
	Disagree	31 (39.7)	16 (20.5)	15 (19.2)		15 (45.5)	10 (66.7)	5 (33.3)	
Provide proper treatment	Agree	82 (84.5)	39 (47.6)	43 (52.4)	0.26	25 (75.8)	14 (56.0)	11 (44.0)	1.00
	Disagree	15 (15.5)	10 (66.7)	5 (33.3)		8 (24.2)	5 (62.5)	3 (37.5)	
Maintain privacy and confidentiality	Agree	68 (75.6)	34 (50.0)	34 (50.0)	0.47	11 (33.3)	7 (63.6)	4 (36.4)	0.72
	Disagree	22 (24.4)	9 (40.9)	13 (59.1)		22 (66.7)	12 (54.5)	10 (45.5)	
Behave well	Agree	70 (72.9)	37 (52.9)	33 (47.1)	0.49	19 (57.6)	11 (57.9)	8 (42.1)	1.00
	Disagree	26 (27.1)	11 (42.3)	15 (57.7)		14 (42.4)	8 (57.1)	6 (42.9)	
Counseling to a woman about reproductive rights and other issues is a part of medical profession									

Agree	147 (97.4)	68 (46.3)	79 (53.7)	0.04	31 (93.9)	17 (54.8)	14 (45.2)	0.49
Disagree	4 (2.6)	4 (100)	0 (0)		2 (6.1)	2 (100.0)	0 (0)	

The distribution of each gender perception item according to sex and occupation is presented in Table 2. The mean perception score among medical students was 10.29 ($SD=2.70$) out of 20, with an overall positive perception of 52%. With regard to the question "*Influence of gender on women's health*" most of the respondents about 80% thought that gender has bad influence on women's health. This perception was significantly higher among female students versus male (62% vs. 39%, $p=<0.001$). About 97% students agreed that counseling to a woman about their reproductive rights, use of contraceptives etc. are important part of medical profession which perception was also significantly higher among female students compared to males (54% vs. 46%, $p=0.04$).

Among service providers, the mean score of perception was 9.94 ($SD=2.98$) out of 20 with total positive response rate of 50%. In response to the question "*Gender influence on response to illness among men*" most of the participants (71%) responded that men are not concerned about their illness, which was significantly greater among female practitioners than males (59% vs. 41%, $p=0.02$).

We also interviewed some respondents who visited in three selected hospitals for treatment purpose. In response of questions regarding gender views, barrier or discrimination during receiving health services no one had clear knowledge about gender, and majority (85%) explained it as only male or female.

Qualitative findings also reveal that teaching staffs and administrators or policy makers were more knowledgeable about the basic difference of gender and sex from their working experience. They viewed gender as a socially constructed characteristic of women and men.

One of the respondents stated,

"Gender is a social aspect; it depends on how society perceives it. Such as; the matriarchal society system (Garо tribe), it's totally different to our patriarchal society." Teaching staff

Another respondent mentioned,

"Because of the different gender perspectives, male and female doctors treat the same patient differently. If a pregnant woman comes to a doctor for antenatal care (ANC), then a male doctor will give importance only to her physical condition, and he will focus on ANC, hemoglobin level, urine, blood pressure. But a female doctor will give importance on both physical and mental condition." Administrator

Influence of gender on women health:

Getting proper health care services are influenced by different levels e.g. individual, family, community, society, facility levels etc. Because of limited decision-making power, lack of awareness, shyness, and societal practice e.g. male dominated society makes them more vulnerable. As a result, they do not get proper treatment; eventually they suffer from multiple health conditions.

"The barriers remain in four level; community level, education level, service delivery level, and institutional level. We need to sensitize all levels to minimize the barriers" Administrator

A respondent stated:

"In most of the cases, husband takes the decision for the treatment of female and sometimes it causes delay to start treatment." Teaching staff

From the administrator's point of view, usually female does not express their health problems initially because of the privacy concern.

"Females want to hide their problem. They share half, and rest half they do not express. For this reason, they do not get treatment. Because doctors cannot understand whole situation, they can understand from where these (health) problem created... Sometimes female think if they tell everything it will ruin her privacy. Another reason is due to religious reason they do not share." Administrator

Few respondents stated that most of the time transgender usually hide their identities during receiving health care services; they preferred to introduce themselves as women. They rarely visit to hospital or doctors due to the social stigma.

Respondents also discussed a number of gender related issues e.g. gender discrimination. Most of the teaching staff and administrators stated that gender discrimination played an important role in getting equal and appropriate health care services. Usually, male is more privileged and prioritized compared to female due to the existing social norms, practices and beliefs as they are the breadwinner of the family. This perception creates discrimination between male and female.

One of the respondents explained:

"Gender is very much related to economic and educational factors". Teaching staff

When discussing the service delivery side, it was found that the recent medical education scenario has been changed than before. Now more than 60% of the medical students are female. But the scenario is different in case of post graduate medical education. Most of the post graduate level specialized subjects are male dominated.

One of the respondents mentioned:

"The main reason of drop out of female from post-graduation is family reason". Administrator

Qualitative interviews indicated that female usually choose few common subjects e.g. obstetrics and gynecology, pediatrics, or basic subjects where they feel secured and comfortable, and can maintain family life easily.

During discussing the gender barrier in accessing health care services at facility level, most of the qualitative respondents consider that doctors do not discriminate or show the judgmental attitude towards all patients irrespective of their age, gender, social status etc. One respondent stated that,

"There is no problem in pediatric department and we tried to provide equal health care services to all patients".

Majority key informants' thoughts that disadvantaged group such as disabled or transgender face challenges in receiving health care services. Most of the people including service providers may feel discomfort to serve them.

"Transgender people are the most under privileged group of Bangladesh health care system and it needs more attention to access into health care system of this group of people." Teaching staff

"He had a chance to develop and coordinate the entire medical curriculum, but never found anything related to transgender or how to handle transgender" Administrator

Respondents also shared different experiences. Few respondents mentioned that they often found patient preferred to get services from gender-matched service provider. According to the respondents –

"Treating skin diseases male always prefer male doctor. They do not want to visit female doctor." Teaching staff

"A female may not be comfortable with male doctor, but she may be comfortable with female doctor." Administrative staff

"In case of caesarian section, we provide female gynecologist, female health worker for ANC, but we do not have female anesthetist always. Sometimes patient asked for female anesthetist. There is lack of female anesthetist however we hardly found. Though the patient is educated but has own perspective. Therefore, she wants female service provider." Teaching staff

However, overall discussion with the administrators, and teaching staffs revealed that gender sensitive health care service is not fully established yet.

Regarding health care seeking behavior, majority (32%) of health care service recipients thought men are privileged in taking treatment compared to women and women are more concerned maintaining adequate privacy and confidentiality (83%). Most of them (43%) consider seeking treatment from male doctors is the major gender barrier for female patients in our society, followed by inadequate separate seating (26%) and toilet (25%) facilities etc.

Table 3: Bivariate analysis with perception score and socio-demographic characteristics (N=184)

Variables	Perception of medical students			Variables	Perception of service providers			
	Mean	(SD)	t/F		Mean	(SD)	t/F	p-value
Age					Age			
<20	10.00	(2.57)	4.672	0.011	<20	0	0	6.823 0.014
20-25	9.80	(2.65)			20-25	6.00	(3.61)	
>25	11.22	(2.64)			>25	10.33	(2.67)	
Sex					Sex			
male	10.21	(2.66)	0.130	0.719	male	9.79	(3.57)	0.110 0.742
female	10.37	(2.75)			female	10.14	(2.03)	
Student type					Designation			
Under graduate students	9.82	(2.62)	9.770	0.002	Professor/consultant	10.33	(3.78)	2.357 0.092
Post graduate students	11.24	(2.63)			Assistant/Associate professor	10.89	(2.57)	
					Lecturer/MO/register/assistant register	10.00	(2.36)	
Institute								
Government Medical College	9.14	(2.85)	8.745	<0.001	Intern doctor	6.00	(3.61)	
Private Medical College	10.52	(2.18)			Institute			
Medical University	11.24	(2.63)			Government Medical College	9.10	(3.00)	0.805 0.457
					Private Medical College	9.92	(3.23)	
					Medical University	10.80	(2.66)	

The mean score of gender perception among respondents both medical students and service providers was found significantly higher among those whose age were in between (20-25) years (Table 3). Post graduate medical students and students studying in Government medical college had significantly higher rate of perception on gender than others.

Table 4: Multivariate regression analysis predicting perception score towards gender (N=184)

Variables	Medical students					Service providers				
	B	SE	β	t	p-value	B	SE	β	t	p-value
Age	-.187	.682	-.042	-.275	.784	4.333	1.659	.425	2.612	.014
Sex	-	-	-	-	-	-	-	-	-	-
Student type	-.460	1.158	-.080	-.397	.692	-	-	-	-	-
Designation	-	-	-	-	-	-	-	-	-	-
Institute	1.386	.513	.421	2.700	.008	-	-	-	-	-

In the adjusted multivariate regression analysis, using only the statistically significant variables in bivariate analysis, we found that undergraduate medical students who were studying in Government medical college significantly associated with the higher perception on gender (Table 4). Among service providers whose age was (20-25) years had significant association with greater perception rate.

Table 5: Gender inclusion in medical/dental curricula: suggestions regarding probable effects, challenges and solutions (N=184)

Variables	Medical students n (%)	Service Providers n (%)
Effects		
Provision of gender sensitive attitude and respectful behavior towards patients	139 (91.4)	26 (78.8)
Provision of good quality healthcare services for all	107 (70.4)	26 (78.8)
Ensuring people's healthcare rights and they would be satisfied	130 (85.5)	28 (84.8)
Gender awareness will increase and equal healthcare will be provided to transgender	4 (2.7)	7 (21.2)
Work pressure will increase or reduce	49 (32.2)	14 (42.4)
Attitude of service provider will not change	12 (7.9)	6 (18.2)
People will not take it positively	27 (17.8)	4 (12.1)
No negative effects	73 (48.0)	20 (60.6)
Challenges		
Medical curricula itself is huge	107 (70.4)	13 (39.4)
Burden for students	26 (17.1)	8 (24.2)
'Gender' is not important topic to include	5 (9.1)	0 (0)
No scope of inclusion	14 (21.9)	2 (6.1)
Religious/cultural/ social barrier	6 (3.9)	4 (12.1)
No challenges	27 (17.8)	14 (42.4)
Solutions		
Arrangement of gender related training, workshop, seminar and symposium for teachers and students	36 (23.7)	12 (36.4)
Reviewing of medical or dental curriculum and observation importance of gender inclusion	139 (91.4)	23 (69.7)
Consulting with medical or dental curriculum board members and creating intention module	125 (82.2)	28 (84.8)
Government can play the main role so, should discuss with health sector	127 (83.6)	27 (81.8)
Involvement of NGOs and other regulatory organizations	128 (84.2)	23 (69.7)
Advertisement on Gender issue	126 (82.9)	24 (72.7)
Policies for women, men and children friendly environment in medical sector	3 (2)	6 (18.2)

In terms of effects of 'gender' inclusion in medical or dental curriculum, maximum about 91% medical students consider gender inclusion may initiate gender sensitive attitude among medical personnel and respectful behavior towards patients where most of the service providers (85%) believed this will ensure people's health care rights and patients would be satisfied (table 5).

In terms of challenges in inclusion of 'gender', majority of the medical students (70%) responded that medical curriculum itself is huge so, this may create extra burden to students. On the other hand, most of the service providers (42%) mentioned that there are no challenges in inclusion of gender in medical or dental curriculum.

In terms of solution, maximum medical students (91%) suggested the curriculum review board to review the medical or dental curriculum for observing the importance of gender inclusion. Majority service providers (85%) recommended to consult with the members of medical or dental curriculum board and develop the intension module.

Effects of gender inclusion in medical or dental curricula issue was discussed during qualitative interview. During the interview with teaching staff it was found that gender role influences both medical education, and service delivery. According to them gender based medical education will help to provide quality services. Knowledge about gender will help them in dealing patients of different society and different culture.

As one respondent specified,

"For managing patients, we need to be gender sensitive otherwise proper dealing is not possible." Teaching staff

Regarding inclusion of 'gender' in medical or dental curricula, few hindering factors were also identified. Teaching staffs think that initially some people may not give importance on gender issue, and may not accept it. In addition, existing medical curricula is comprehensive for students. So, authority may think adding a new issue in existing curricula will add extra burden for students. From administrator perspectives main challenge is to integrate gender in medical curricula is to coordinate with different divisions. Medical education is managed by different administrative authorities' e.g. BMDC develops curriculum, university take exam, teaching staff and service providers are under MOHFW and private sector. Lack of gender sensitivity among few decision makers may create obstacle to include gender issue in existing curricula.

To overcome the hindering factors in inclusion of 'gender' in medical or dental curricula respondents shared different recommendation.

A respondent mentioned,

"Gender maybe included in curricula as piloting. If we get desired result from piloting, then it will be included in the long run." Teaching Staff

Respondents (administrators) suggested that gender issue should be included in the curriculum as item, and it should be taught in every year in brief that will help medical students to get basic orientation on gender. As well as they also advised to orient nurses, administrators, paramedics, laboratory technicians and other service providers on gender through training. Besides medical curricula gender should include in nursing curricula, midwifery curricula, and paramedics.

In addition, that most of them suggested integrating gender concept in some specific subjects (e.g. community medicine, forensic medicine, and urology). In all clinical setting related education gender has to include.

"According to the importance some topics e.g. how to handle patients gender sensitively, how to deal transgender, how to deal with the society, how to deal with the professional life and graduate; need to include in the medical education", Administrator

One of the administrators mentioned that,

"For service providers and other cadres of health system, need to arrange training regarding gender in the Operational plans. Government's operational plans should include gender to aware all health service providers." Administrator

To revise medical curriculum key informants emphasized on collaboration among different divisions of health sector. There must be an effort; understanding and participation of all level of authority who are mainly responsible for development and evaluation of medical curricula. Before updating curricula need to sensitize all levels of stakeholders, discussion should start from workshop, seminar, medical collage academic level, after that from district and sub district levels. Later need to compile all discussions and send the report to central level, decision will come from DGHS and DGFP and MOHFW.

Discussion

To our knowledge, this is the first study in Bangladesh that assesses the perception of gender among medical students and professionals and identifies the possibilities and challenges in better integrating gender in medical curriculum. The findings from this study provide insight the existing gender differences or inequalities in the society that affecting health care services due to the limited gender awareness among medical personnel. Further it will help to inform policies and programs to reduce inequities in terms of health services and provision of women, men and children friendly environment in medical sector of Bangladesh.

In light of study findings, almost half of the medical students (48%) and medical professionals (50%) lack positive thoughts or perceptions about gender which is essential for them to learn and understand. In this study, mean perception score among medical students and practitioners were found respectively 10.29 and 9.94 out of 20. Alongside, in case of service recipients no one had any idea about gender. But the qualitative findings reveal that teaching staffs of medical colleges and different key personnel in administrative level were knowledgeable regarding gender concept due to the longer working experience. In previous research conducted among Swiss medical students found medium to high gender sensitivity with mean Gender Sensitivity score (GS score) 3.65 and had less stereotypical attitude towards patients ((Gender role ideology towards patients (GRIP score) : 1.92 out of 5)) (23). On the other hand, studies conducted among younger medical students of Netherland and Sweden reported relatively lower scores (GS score: 3.3 and 3.4 respectively) (24). Researchers explained that increasing gender sensitivity and decreasing gender stereotypical attitude towards patients causes improvement of gender awareness among medical students (23, 24).

In this study, we also observed comparatively better perceptions regarding gender among young and female respondents than older and male individuals. Similar findings were observed in previous studies where female and younger students showed less stereotypes towards patients compared to male and older ones (GRIP score among male: 2.07 vs. female: 1.83) (13, 23). Researchers explained that women are generally aware about stereotypical attitude as it speaks about their own position and right to better health care (23). Due to the absence of gender focused orientation or discussion in the clinical practice, medical personnel gradually start to showing stereotypes towards patients (23). By implementing gender focused courses or lectures at clinical level including specialties, gender awareness could be achieved. None of the studies concerning about gender awareness conducted in Bangladesh.

According to our study findings, postgraduate medical students and students of Government medical college were found to have greater positive perceptions than others. This could be explained based on socio-cultural norms, including gender norms that differ across countries. It is assuming that due to higher burden of patients usually coming from lower economic status in government hospitals, students get greater chance of exposure with patients that could make them more sensitive. On the other hand, students studying in Government medical college generally belonging from lower- or middle- class families that also influence the positive perception towards gender sensitive health care. In addition, social environment, scientific and medical sectors are changing over time and gender inequalities has become the prominent topic that could also be the reason behind this positive perception (23, 25).

Findings of this study regarding gender sensitive health system and health service utilization in Bangladesh stated that majority respondents thought gender discrimination towards female, transgender and disabled exists in Bangladesh. Existing social norms, culture, practice, beliefs, male-centeredness or male dominated organizational structures act as a major barrier in getting equal health care (13), our findings support this view, not only the medical personnel but female, underprivileged and transgender people often preferred to get services from gender matched service providers because of insecurity or privacy issues (26). In previous studies, gender differences had been observed but their relevance to patient care was not always recognized (6). Consequently, these social and cultural differences and bias in gender role influences both medical education and service delivery (1).

An investment in medical education is legitimized by benefits for future patients and puts responsibility on medical sector to actively reflect on this. In medical and public health education and clinical practice, gender biasness has been inherent. Almost all respondents of this study mentioned that gender sensitive knowledge is needed to provide better quality health services that can eventually bring changes to the health system. Almost all respondents of this study mentioned that gender sensitive

knowledge is required to provide better quality health services that can eventually bring changes of health system. Identification of common gender related problems or concern in clinical practice and incorporation of that knowledge can effectively promote integration of gender into medical curriculum (27). Accordingly, this integration will provide appropriate and gender sensitive health care services (28). In this study, respondents recommended to consult the respective bodies or experts and review the medical curriculum to find out the gaps and possible areas in curriculum where the gender specific topics can be included.

Limitations of study:

There are three main limitations of this study. First, the quantitative survey was cross sectional in nature, so it does not permit any cause and effect relationship to be inferred. Second, the relatively small sample size has led to limiting generalizations. However, we did include key medical institutions that are leaders in medical education and can therefore potentially advocate for increased gender content across other medical institutions in Bangladesh as well as in other South Asian contexts. Third, there was no previously used validated tool for assessment of participant's gender related perceptions. However, our study managed to overcome this lacuna by developing our own measure that could be further tested and refined in future studies.

Conclusion

Education is the basic foundation for promoting equal health rights and eliminating health disparity. The Bangladesh medical education system lacks adequate gender orientation and therefore requires greater prioritization in the medical curriculum. Subsequently, this tends to be gender biased, hence substandard health care. We call for greater incorporation of gender and gender-specific topics in medical education. Further reviewing of the medical education curriculum and expert consultation towards identifying ways to effectively integrate gender in curriculum and training will benefit this transition to a gender transformative health care system in Bangladesh.

Abbreviations

BSMMU: Bangabandhu Sheikh Mujib Medical University; BMCH: Bangladesh Medical College and Hospital; GWH: WHO Geneva, Women and Health; GES: Gender Equity Strategy; GNSPU: Gender, NGO, Stakeholder Participation Unit; GS score: Gender Sensitivity score; GRIP score: Gender Role Ideology towards Patients; ICPD: International Conference on Population and Development; IRB: Institutional Review Board; KII: Key Informant Interview; MOHFW: Ministry of Health and Family Welfare; MMCH: Mymensingh Medical College and Hospital; SDG: Sustainable Development Goal; WHO: World Health Organization

Declarations

Ethics approval and consent to participate:

Ethical approval was taken from Institutional Review Board (IRB) of Bangabandhu Sheikh Mujib Medical University (BSMMU). Informed written consent was taken from all the respondents before participating in the study. All methods were carried out in accordance national ethical guidelines and regulations (which conforms to the declaration of Helsinki).

Consent for publication: Not applicable

Availability of data and materials: Data we used and/ or analyzed during the current study are not publicly available due to the data policy of BSMMU. Data are available upon reasonable request from the corresponding author (far_haseen@yahoo.com).

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Author's contribution:

Conceptualization: FH; Methodology: FH, SSI, SS, AAC, AMSA MSR, AGMMR, MSHM; Data curation: SH, SS, IK, FT, SA, SM; Analysis and interpretation of data: IK, SS, FH, KM; Writing- original draft preparation: FH, IK, SS; Writing-review and editing: FH, KM, SSI, SH, AAC, AMSA MSR, AGMMR, MSHM; Supervision: FH, Critical revision of the manuscript and approval: all authors

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References

1. Verdonk P, Benschop YW, De Haes HC, Lagro-Janssen TL. From gender bias to gender awareness in medical education. *Advances in health sciences education*. 2009;14(1):135–52.
2. Moynihan C. Theories of masculinity. *Bmj*. 1998;317(7165):1072–5.
3. Risberg G, Johansson EE, Hamberg K. A theoretical model for analysing gender bias in medicine. *International journal for equity in health*. 2009;8(1):1–8.
4. Ludwig S, Oertelt-Prigione S, Kurmeyer C, Gross M, Grüters-Kieslich A, Regitz-Zagrosek V, et al. A successful strategy to integrate sex and gender medicine into a newly developed medical curriculum. *Journal of Women's Health*. 2015;24(12):996–1005.
5. Diderichsen F. Gender inequalities in health: a Swedish perspective: Harvard University Press; 2001.
6. Verdonk P, Mans L, Lagro-Janssen A. Integrating gender into a basic medical curriculum. *Medical Education*. 2005;39(11):1118–25.
7. John P, Bavadekar A, Hasnain A, Karandikar A. Gender in medical education: Perceptions of medical educators 2015.
8. Iyer A, Sen G, George A. The dynamics of gender and class in access to health care: Evidence from rural Karnataka, India. *International Journal of Health Services*. 2007;37(3):537–54.
9. Rege S, Deosthali P-B. Integrating Gender in Medical Education. *eSocialSciences and Humanities*. 92.
10. Fincher RA. International Conference on Population and Development. *Envtl Pol'y & L*. 1994;24:309.
11. Mac Kune-Karrer B. The Fourth World Conference on Women Beijing, China, 1995. *Journal of Feminist Family Therapy*. 1997;8(4):1–3.
12. Risberg G, Johansson EE, Hamberg K. 'Important... but of low status': male education leaders' views on gender in medicine. *Medical education*. 2011;45(6):613–24.
13. Yang H-C. What Should Be Taught and What Is Taught: Integrating Gender into Medical and Health Professions Education for Medical and Nursing Students. *International Journal of Environmental Research and Public Health*. 2020;17(18):6555.
14. Doyle L, Payne S, Cameron A. Promoting gender equality in health. Manchester, UK: Equal Opportunities Commission; 2003.
15. Sanghvi R. Gender perspectives in medical education. 2018.
16. Berg M, Appelman Y, Bekker M. Gender and health knowledge agenda. 2015.
17. Färnert A, Färnert A, Kulane A, Schenck-Gustafsson K, DeCola PR, Pfaff DW, Pisetsky DS (eds): *Handbook of Clinical Gender Medicine*. Basel, Karger, 2012, pp 396–404 (DOI).
18. WHO. Meeting report of Integrating gender into the curricula for health professionals. 2006.
19. Ministry of Health and Family Welfare Gol. National Health Policy. 2017.

20. Rahman MM. Undergraduate Medical Education in Bangladesh: Facts & Challenges. Anwer Khan Modern Medical College Journal. 2010;1(1):3-.
21. Regitz-Zagrosek V. Sex and gender differences in health: Science & Society Series on Sex and Science. EMBO reports. 2012;13(7):596–603.
22. MoHFW G. Gender Equity Strategy. 2014.
23. Rustemi I, Locatelli I, Schwarz J, Lagro-Janssen T, Fauvel A, Clair C. Gender awareness among medical students in a Swiss University. BMC medical education. 2020;20:1–8.
24. Andersson J, Verdonk P, Johansson EE, Lagro-Janssen T, Hamberg K. Comparing gender awareness in Dutch and Swedish first-year medical students-results from a questionnaire. BMC medical education. 2012;12(1):1–10.
25. O'Neil A, Sojo V, Fileborn B, Scovelle AJ, Milner A. The# MeToo movement: an opportunity in public health? The Lancet. 2018;391(10140):2587–9.
26. Sen G, Östlin P. Gender inequity in health: why it exists and how we can change it. Taylor & Francis; 2008.
27. Kuhlmann E, Annandale E. The Palgrave handbook of gender and healthcare: Springer; 2010.
28. Wang L. The incorporation of gender perspectives into curriculum and instruction in Taiwan: Issues revisited. J Womens Gend Stud. 2013;32:1–41.