Bangladesh Journal of Medical Education Vol.-16, Issue-02, July, 2025
ISSN: 2306-0654(Print), 2313-4224 (Online)
DOI: https://doi.org/10.3329/bjme.v16i2.83115

Original Article

Current Status of Postgraduate Medical Education in Medicine and Allied Disciplines in Bangladesh: Stakeholders' Views

Ahommed F[1], *Noman M U*[2], *Ahmed AKM S*[3], *Rahman I*[4], *Islam M S*[5] and Afrin M[6]

Abstract

Background: Bangladesh is experiencing advancements in postgraduate medical education day by day, but its effectiveness remains under scrutiny. The study achieved views from postgraduate medical course students, recently (within two years of passing) passed postgraduate doctors and postgraduate course teachers. In-depth interviews were recorded from various potentials stakeholders, including professors of medicine and allied disciplines, medical educationists, administrators and policymakers. **Methods:** The study was a descriptive type of cross-sectional study utilizing both the qualitative and quantitative approaches (mixed method study) for one year from 1 July/2023 to 30 June /2024. Quantitative part was done at different medical university/institutes/colleges (government and non-government) having postgraduate courses in Dhaka city and out of Dhaka city. Qualitative data were collected from six postgraduate medical institutes. **Results:** The study summarized the key findings regarding stakeholders' views. Majority students wanted to study in clinical subjects especially in Internal Medicine in post-graduation. Highest number of participants were male in post-graduation courses. The study emphasizes the need for significant reforms to enhance the quality and effectiveness of postgraduate medical education in Bangladesh. Key issues highlighted include the need for updated curricula, improved faculty development/teachers training, better infrastructure, logistic support, increased research opportunities, incorporation of modern assessments methods and supervision by local & higher authorities. **Conclusion:** This study would highlight the importance of addressing stakeholder concerns to create a robust postgraduate medical education system in Bangladesh.

Keywords: Postgraduate, Medical education, Medicine and allied disciplines, Bangladesh*Authors' information:*

1. Dr. Faruk Ahommed, Senior Consultant (Cardiology), Faridpur Medical College, Faridpur
2. Dr. Mesbah Uddin Noman, Associate Professor(Nephrology), Dhaka Medical College, Dhaka
3. Dr. AKM Shakir Ahmed, Associate Professor(Pediatrics), Mymensingh Medical College, Mymensingh
4. Dr. Inamur Rahman, Assistant Professor (Community Medicine), OSD,DGHS, Mohakhali, Dhaka
5. Dr.Mohammad Saiful Islam, Assistant Professor (Dermatology), OSD,DGHS, Mohakhali, Dhaka
6. Dr. Mahmuda Afrin, Associate Professor(Microbiology), Diabetic Association Medical College, Faridpur

Address of correspondence: Dr. Faruk Ahommed, Senior Consultant (Cardiology), Faridpur Medical College, Faridpur, E-mail: drfaruka2010@gmail.com

Introduction

Postgraduate medical education (PGME) is an important phase in the life of a doctor. The postgraduate training focuses on development of cognitive, psychomotor skills, communication skills, attitudinal changes, lifelong learning and teaching skills. During this phase, they are also encouraged for innovation and research. Such training is generally painful and requires dedication. It is expected that they will be able to be proficient enough to provide effective healthcare at all levels. Further, these specialists would be able to

ISSN: 2306-0654(Print), 2313-4224 (Online)
DOI:

provide a standard of care comparable to any other country.[1] However, performance of medical doctors and effective health care depend on quality medical education.[2] The subject, Medicine has evolved itself into a social system, which is heavily bureaucratized, politicized and truly commercialized. During the last two centuries, Medicine has made more complex and rendered medical education and more difficult is to take the benefit of medical knowledge to the common people [3].

Bangladesh College of Physicians and Surgeons (BCPS) has been developing postgraduate medical education and training in this country. The college has played a unique role in producing specialists in various disciplines of medical science who are working as medical teachers, consultants and specialists. Fellows and members of the college still constitute the majority of the specialist in the country. Fellows of the college are also performing as specialist abroad. The BCPS now (up to January 2023) runs two courses, fellowships in 27 general disciplines and 38 specialties i.e. total 65 disciplines and memberships in 16 disciplines thus grand total is 81 disciplines under 16 faculties (seats are not fixed). After establishment of BCPS in 1972, the total number of fellowships and memberships awarded through regular examinations until now are 8,169 and 3,570 respectively.[4]

Bangabandhu Sheikh Mujib Medical University (BSMMU) is the premier postgraduate medical institution of the country bearing the heritage to the Institute of Postgraduate Medical Research (IPGMR).[5] IPGMR was established in 1965.[6] In the year of 1998, the government converted IPGMR into a medical university for expanding the facilities for higher medical education and research in the country. It has an enviable reputation for providing high quality postgraduate education in different specialties. It has strong link with other professional bodies at home and abroad. The university has many departments equipped with modern technology for service, teaching and research. Besides education, it plays the vital role of promoting research activities in various discipline of medicine. Since its inception, the university has also been delivering general and specialized clinical service as a tertiary level healthcare center. Now, (up to January 2023) BSMMU runs under eight (8) faculties, eight (8) courses such as MD (Doctors of Medicine) in 37 disciplines, MS (Masters of Surgery) in 25 disciplines , Diploma in 17 disciplines, MPH (Masters of Public Health) in 8 disciplines, M.Phil. (Masters of Philosophy) in 6 disciplines, M. M Ed (Masters of Medical Education) in 1 discipline, PhD (Doctors of Philosophy) and MSN (Masters in Nursing Science) i.e. grand total 96 disciplines.[5]

Postgraduate medical education is based on adequate undergraduate training. Advanced learning necessarily demands sound understanding of the basics of the specialty. Therefore, postgraduate medical education cannot be considered in isolation. Considering the scenario of mushrooming of medical colleges without enough teachers, it is expected that outcome of postgraduate medical doctors will fall short.[7] Medical education, as a social science, tends to follow socially constructed values and ideas and varies between social and geographical contexts. The culture, epidemiology, the healthcare system and materials and human resources influence it. Therefore, what is right for one postgraduate program or one part of the world might not be right for another. In these standards, we encourage everyone to consider what is appropriate for their own

ISSN: 2306-0654(Print), 2313-4224 (Online)
DOI:

context and what might improve their own current practice.[8]

Bangladesh with 165 million people is facing many challenges in health care similar to other developing countries.[9] Bangladesh has witnessed rapid growth in medical education in the last two decades with trends of privatization. The past two decades have seen a prolific growth of many private or non-government medical institutes. The science and art of treating patients and preventive medicine is complex and multidimensional. It requires acquisition of broad range of competences in knowledge, communication skill, technical skill, teamwork, professionalism, leadership and others. The outcome should be comparable with the past and present and with the external world. Improving the quality in medical education is vital prerequisite to ensure quality of future physicians, researchers and teachers. The students of today are the physicians of tomorrow. The quality education should be the goal of each teacher and every academic institution.[10] Trends about the instructional methods, learning strategies, curriculum structure, aims and goals have been changing day by day. Medical education has been moving from traditional lectures to experienced based methods; from teacher-centered to learner-centered strategies; from rigid curricula towards a flexible one with core and electives and from a focus of knowledge to performance and outcomes.[11] The total postgraduate institutes in Bangladesh are now 52, among them 46 under BSMMU. Six autonomous institutes such as BCPS, Bangladesh University of Professional (BUP), Rajshahi Medical University (RMU), Chittagong Medical University (CMU), Sheikh Hasina Medical University (SHMU), and Sylhet Medical University (SMU) run several courses.[12] The annual intake of postgraduate medical students is total 2,426 under BSMMU in the year 2023.[5] BCPS conducts examination in two terms (January and July session). In 2023, number of FCPS part- 1 passed students were 2437. In 2023, number of FCPS passed were 455; MCPS passed were 237.[4] Large number of students in each year enter into the postgraduate courses among them 81 disciplines in BCPS [4] and 96 disciplines in BSMMU.[5] Therefore, it is very important to assess the postgraduate medical education status in our country for further improvement of the courses as per national needs and international standards. In the light of above mentioned facts, the researcher in this study tried to assess the current situation of the quality of postgraduate medical education practiced by the medical university/institutes/colleges in Bangladesh. Findings of the study may suggest necessary modification in existing courses, teaching methods and assessment for further improvement in medical education.

Materials and methods

The study was a descriptive type of cross-sectional study applied both the qualitative and quantitative approaches (mixed method study) over a period of one year from 1 July/2023 to 30 June /2024. Quantitative section was done at different medical university/institutes/colleges having post-graduation courses among them both government and non-government medical institutes in Dhaka city and out of Dhaka city were included. Qualitative data collected at the top managerial places of post-graduate medical institutes. The study population were teachers of post-graduate medical courses (n=40), students of post-graduate medical courses (n=300), recently passed post-graduate medical doctors (n=50), professors/policy makers/medical educationists/ Principals/heads of selected

ISSN: 2306-0654(Print), 2313-4224 (Online)
DOI:

medical colleges related to post-graduate courses (10).

Inclusion criteria were respondents who were present during data collection and respondents who were voluntarily participate in this study. **Exclusion criteria** were who did not give adequate time for data collection and who provided grossly incomplete data. Convenient sampling technique was used for quantitative data collection and purposive sampling technique was used for qualitative data collection.

Data collection instruments were a self-administered semi-structured questionnaires. Five point Likert's Scale was used for quantitative data collection from- post-graduate medical students, recently passed post-graduate doctors, the post-graduate course teachers. In-depth interview schedule for qualitative data were collected from- professors of postgraduate medicine and allied disciplines, policymakers related to post-graduate medical courses, medical educationists, principals of medical colleges and heads of medical institutes. Data collected by the self-administered semi-structured questionnaires were pre-tested where the quantitative data collected from- 5 (five) post-graduate medical students, two (2) recently passed post-graduate doctors, one (1) post-graduate medical course teacher. Data collected by in-depth interview was pretested where the qualitative data collected from- one professor or policymaker or medical educationist or principal or head of medical institutes. The results of the pre-tests were further modified and developed by the research instruments. A written requesting letter from the Director, CME, was obtained and forwarded to the institute head describing the purposes of the study and seeking co-operation to conduct the study. The researcher visited the institute principals/heads and policymakers/ senior professors, introduced himself, explained the title and purpose of study, finalized date and time for data collection. During data collection, the researcher provided some introduction, supply some printed documents related to the study. During interview, pre-designed in-depth schedule was used to collect data from institute principals/heads/ policymakers/ professors, and the response was written and recorded in mobile device with prior permission from them. Prior informed consent from the respondents (students/ recently passed post-graduate doctors/teachers) was taken before administering the questionnaires. They reserved freedom to participate or not to participate in the study. After briefly explaining the purpose of the study, the questionnaire was distributed to the respondents to get their response. The researcher was present to help, explained and clarified any question facing during their response. The filled up questionnaires was collected immediately by the researcher. Some data from the post-graduate students/teachers/recently passed post-graduate doctors was collected using the Google form. The Google link was sent to the respondents via email/SMS to response in the Google form.

Data processing and analysis The quantitative data obtained from in-depth interview was scrutinized immediately after the meeting and these was written manually in one or several sheets. Important opinion was noted on the left margin and comments and reactions was noted on the right margin of the sheets. The quantitative data from the questionnaires was processed and analyzed using Statistical Package for Social Science (SPSS) version 29. Interpretation of the means/medians score was as follows- 5= strongly positive agreement for the statement, 4= moderately positive agreement for the statement, 3 = mild positive agreement for the statement, 2=

ISSN: 2306-0654(Print), 2313-4224 (Online)
DOI:

negative agreement for the statement, 1= strong negative agreement for the statement. Appropriate statistical tests were performed to compare the means/medians.

Data presentation: The qualitative data obtained from in-depth interview, were presented in narrative form and useful quotation was presented in verbatim in English language. The quantitative data were presented in tables and graphs/figures with necessary description and statistical test for easy understanding and interpretation.

Results

The quantitative part of the results

This part contains the results of three self-administered semi-structured questionnaire from postgraduate medical course students, recently passed postgraduate medical doctors and postgraduate medical course teacher of different medical colleges, medical university and postgraduate medical institutes.

Basic information of the respondents

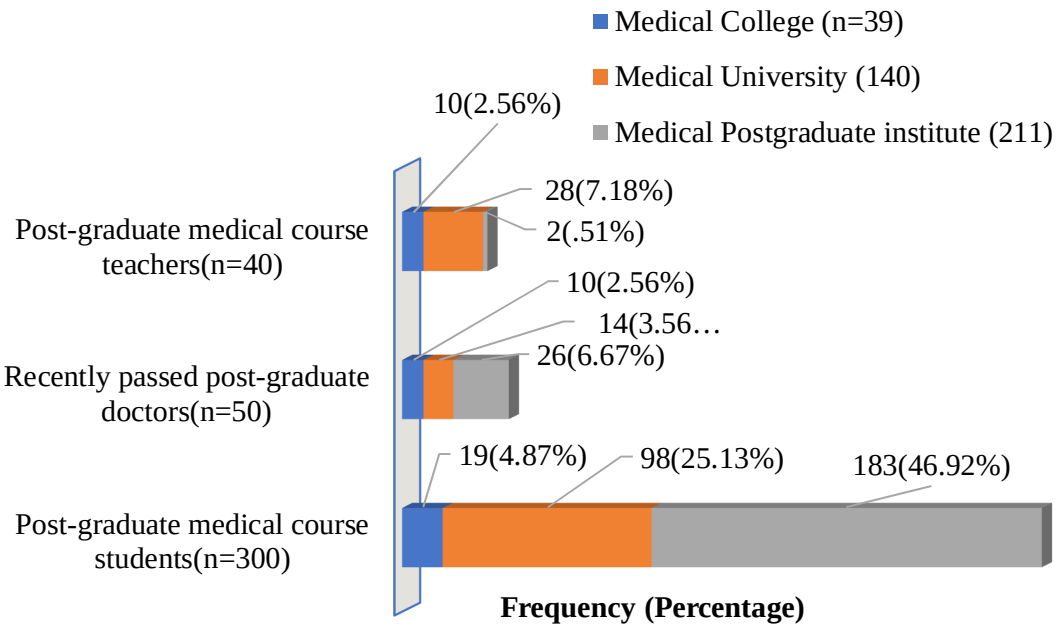


Figure 1: Distribution of the respondents by their type of institute (n=390)

Figure 1 shows that out of 390 respondents, majorities 76.92% were postgraduate medical students. Again, of the 390 respondents, majorities 54.1%were participated from postgraduate medical institutes.

Bangladesh Journal of Medical Education
ISSN: 2306-0654(Print), 2313-4224 (Online)
DOI:

Original Article

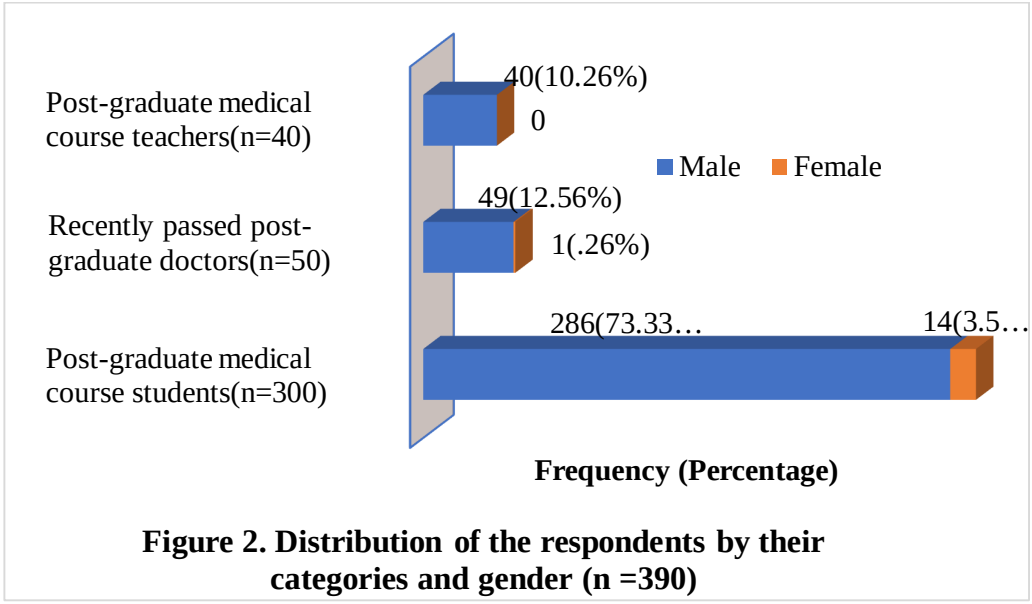
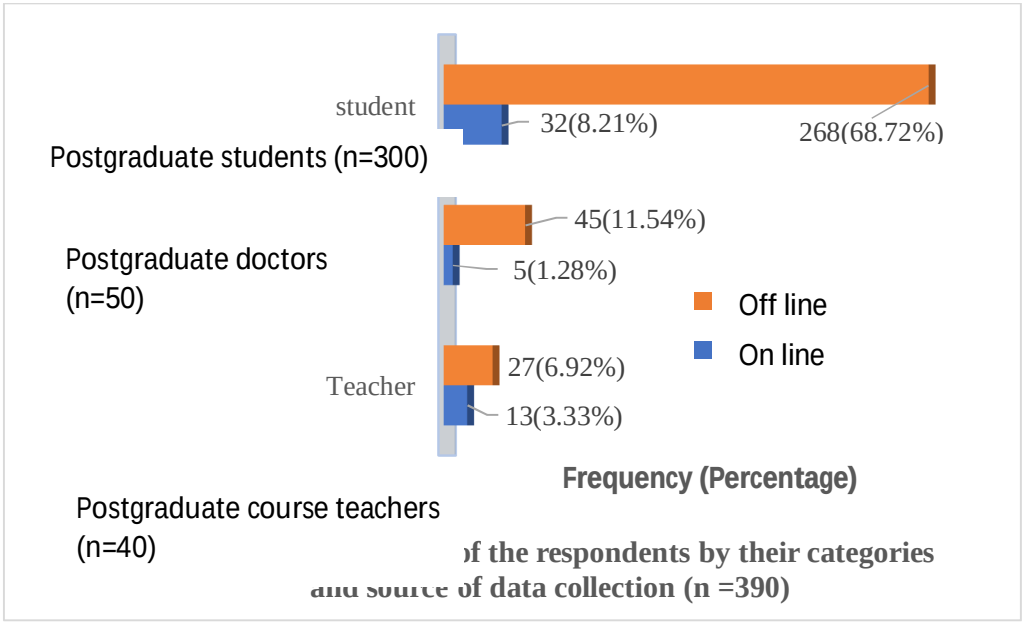


Figure 2. Distribution of the respondents by their categories and gender (n =390)

Figure 2 shows that out of 390 respondents, highest number of participants 73.33% were male and postgraduate medical course students



…f the respondents by their categories and source of data collection (n =390)

Figure 3 shows that out of 390 respondents, 68.72% data were collected by offline and 8.21% data were collected by online from postgraduate medical course students. The data were collected by offline 11.54% and by online 1.28% from recently passed postgraduate medical doctors. Out of the respondents 6.92% data collected by offline and 3.33% by online from postgraduate medical course teacher.

ISSN: 2306-0654(Print), 2313-4224 (Online)
DOI:

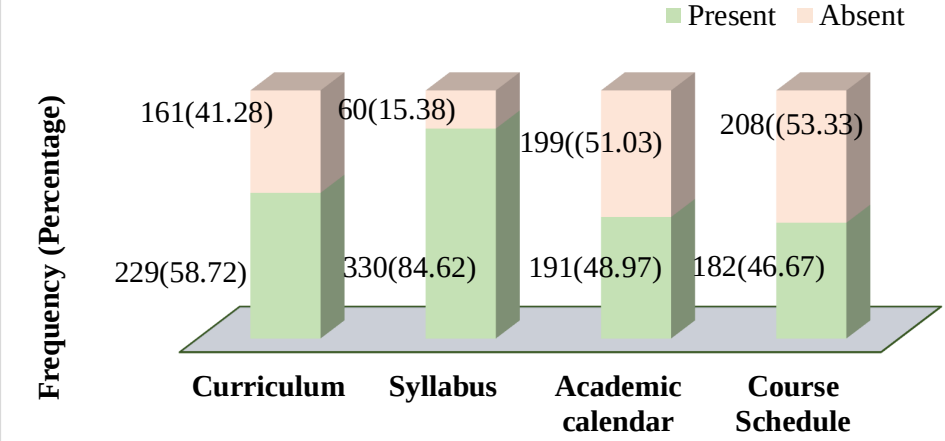
Table 1 distribution of postgraduate medical course students by their degree (n=300)

Name of Degrees	Frequency	Percentage
D card	17	5.67
DEM	5	1.67
Diploma in Transfusion Medicine	1	0.33
FCPS (Pulmonology)	10	3.33
FCPS, MRCP	1	0.33
FCPS(Cardiology)	3	1.00
FCPS(Gastroenterology)	2	0.67
FCPS(Hematology)	2	0.67
FCPS(Hepatology)	3	1.00
FCPS(Infectious Disease & Tropical Medicine)	7	2.33
FCPS(Medicine)	103	34.33
FCPS(Neurology)	3	1.00
FCPS(Palliative Medicine)	2	0.67
FCPS(Physical Medicine & Rehabilitation)	8	2.67
FCPS(Psychiatry)	3	1.00
FCPS(Rheumatology)	6	2.00
M. Phil (Psychiatry)	4	1.33
MCPS(Medicine)	6	2.00
MCPS(Psychiatry)	2	0.67
MD (Cardiology)	18	6.00
MD (Gastroenterology)	8	2.67
MD (Pulmonology)	3	1.00
MD (Endocrinology & Metabolism)	9	3.00
MD (Hematology)	2	0.67
MD (Hepatology)	4	1.33
MD (Internal Medicine)	29	9.67
MD (Nephrology)	11	3.67
MD (Neurology)	7	2.33
MD (Rheumatology)	6	2.00
MD(Palliative Medicine)	5	1.67
MD (Psychiatry)	2	0.67
MD(Chest Disease)	4	1.33
MD(Physical Medicine & Rehabilitation)	4	1.33
Total	300	100.0

ISSN: 2306-0654(Print), 2313-4224 (Online)
DOI:

Table 1 shows that out of 300 postgraduate medical course students, majorities had enrolled in postgraduate degree FCPS (Medicine) 34.33% then MD (Internal Medicine) 9.67%. The third and fourth groups were MD (Cardiology) 6% and Diploma in Cardiology (D. Card) 5.67% respectively.

Information regarding course documents



Figurre 4 : Distribution of the respondents by their views about presence of different course documents

Figure 4 shows out of 390 respondents, 58.72% respondents confirmed that they had curriculum and 41.28% had no curriculum. Among 390 respondents 15.38% mentioned that they had, no syllabus 48.97% respondents agreed that they had academic calendar. Among all respondents 46.67% confirmed that they had course schedule.

Table 2 distribution of the respondents by the type of institutes and by their views about presence of different course documents (n=390)

Presence of course documents	Frequency and percentage of respondents and their response								
	Medical College(n=39)		Medical University(n=132)		Postgraduate medical institute(n=219)		Statistical inference		
	Yes	No	Yes	No	Yes	No	χ^2	df	P
Curriculum	18(46.15)	21(53.85)	115(87.12)	17(12.88)	96(43.84)	123(56.16)	66.48	2	.000
Syllabus	8(20.51)	31(79.49)	83(62.88)	46(34.85)	197(89.95)	21(9.59)	96.01	2	.000
Academic calendar	30(76.92	9(23.08)	86(65.15)	46(34.85)	75(34.25)	144(65.75)	45.02	2	.000
Course Schedule	27(69.23)	12(30.77)	76(57.58)	56(42.42)	79(36.07)	140(63.93)	24.16	2	.000

ISSN: 2306-0654(Print), 2313-4224 (Online)
DOI:

χ^2= Pearson chi-Square value, df = Degree of freedom, P = Asymptotic Significance (2-sided value).

Table 2 shows that higher percentage of participants of medical colleges, medical university and postgraduate medical institutes agreed that they had curriculum (*p* =.000). The majority percentages of medical university and postgraduate medical institutes agreed that they had syllabus (*p* =.000) compared to medical colleges. On the other hand, the higher percentage of all group of respondents agreed that they had academic calendar. The higher percentage of participants of medical college and medical university agreed that they had course schedule (*p* =.000) compared to postgraduate medical institutes.

Information regarding teaching

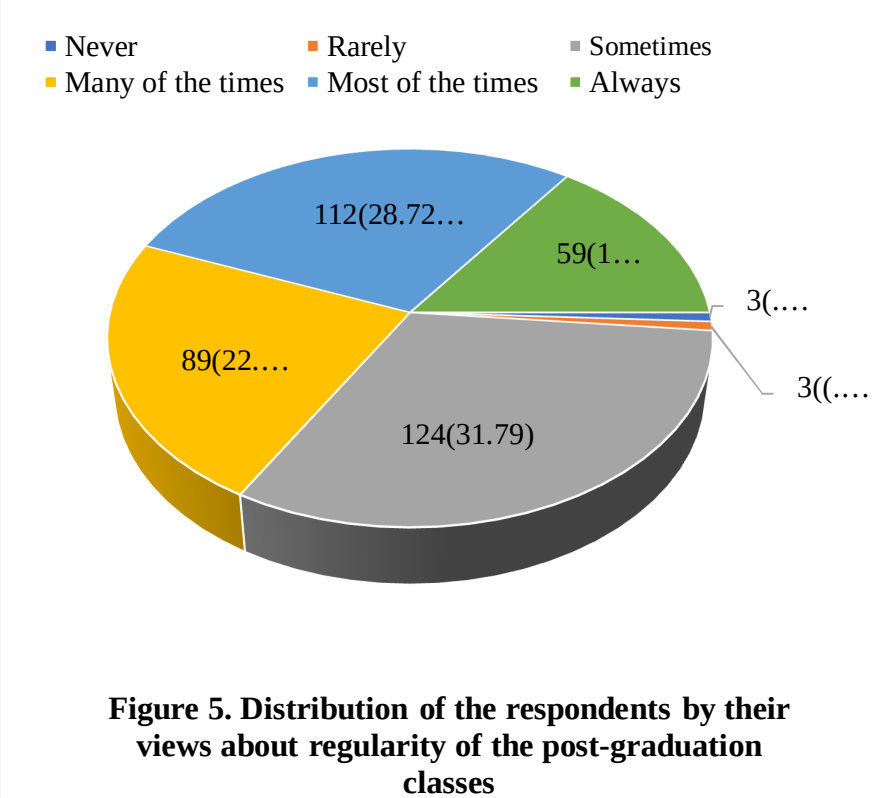


Figure 5. Distribution of the respondents by their views about regularity of the post-graduation classes

Figure 5 shows that out of 390 respondents, highest percentage 31.79% of participants agreed that the postgraduate classes held sometimes.

ISSN: 2306-0654(Print), 2313-4224 (Online)
DOI:

Table 3 comparison of the views about regularity of their postgraduate classes and by the respondent categories

Type of respondents	Mean (SD)	Comparison of means between groups	
		Between 3 groups	Post HOC LSD test between 2 groups
Postgraduate students(n=300)	3.19(1.184)	Welch ANOVA statistic = 4.782 $df_1 = 2$, $df_2 = 84.963$, **P = .011** Point estimate of Eta-squared = .016	P= .755 (PG St. vs. PG Dr.) P= .016 (PG St. Vs. PG Th.) P= .032 (PG Dr. vs. PG Th.)
Recent postgraduate doctors(n=50)	3.14(0.8084)		
Postgraduate medical teachers (n=40)	3.65(0.8929)		

PG St. = Postgraduate students, PG Dr. = Recent postgraduate doctors and PG Th. = Postgraduate medical teachers.

Table 3 shows the comparison of the opinion of the postgraduate medical students, recently passed postgraduate medical doctors and postgraduate medical course teachers about the regularity of the postgraduate classes in medicine and allied discipline that held in their institutes. The mean score of the opinion of the postgraduate course teachers were much higher than the postgraduate students were and recently passed postgraduate doctors (*p*=.011). Moreover, the differences were statistically significant by Post HOC LSD tests between the students and teachers (*p* =.016) and postgraduate doctors and teachers (*p*=.032) but the differences between the students and postgraduate doctors were insignificant (*p*=.755).

Table 4 comparison of the views about regularity of their postgraduate classes and by the type of their institutes

Type of respondents	Mean (SD)	Comparison of means between groups	
		Between 3 groups	Post HOC LSD test between 2 groups
Medical College (n=39)	3.18(1.097)	Welch ANOVA statistic = 117.395 $df_1 = 2$, $df_2 = 100.641$, **P = .000** Point estimate of Eta-squared = .319	P= .000 (MC vs. MU) P= .005 (MC vs. PGMI) P= .000 (MU vs. PGMI)
Medical University (n=132)	4.1(.6638)		
Postgraduate medical institute (n=219)	2.72(1.0272)		

MC = Medical College, MU= Medical University and PGMI = Postgraduate medical institute

Table 4 shows the comparison of the opinion of the respondents of medical colleges, medical university and postgraduate medical institutes about the

ISSN: 2306-0654(Print), 2313-4224 (Online)
DOI:

regularity of the postgraduate classes in medicine and allied discipline. The mean score of the opinion of the respondents of the medical university were higher than others (p=.000). Moreover, the differences were statistically significant by Post HOC LSD tests between the opinion of respondents of medical colleges and medical university (p =.000); medical colleges and postgraduate medical institutes (p=.005) and medical university and postgraduate medical institutes (p=.000).

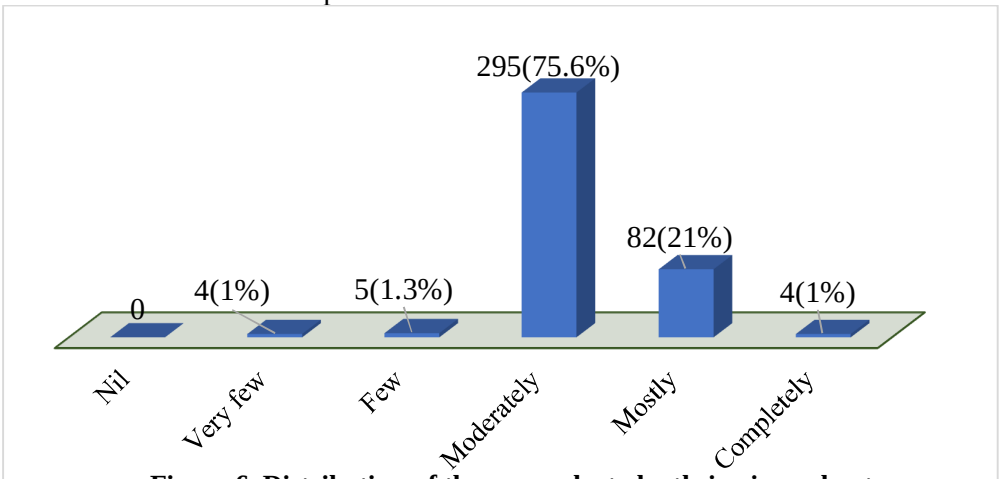


Figure 6. Distribution of the respondents by their views about content coverage with classes that held in the institutes(n=390)

Figure 6 shows that most of the respondents 76.5% agreed moderately about the content coverage of the classes that held in their institutes.

Table 5 distribution of the respondents by their views about different teaching methods that held to complete course of their discipline (n=390)

Type of teaching methods	Frequency and percentage of response and their correspond level						
	Never = 0	Rarely =1	Sometimes =2	Many times =3	Most of the times =4	Always =5	Mean (SD)
Lecture	110(28.2)	32(8.2)	46(11.8)	46(11.8)	107(27.4))	49(12.6))	2.40 (1.846)
Tutorial	21(5.4)	60(15.4)	177(45.4)	63(16.2)	58(14.9)	11(2.8)	2.28(1.142)
Practical	6(1.5)	9(2.3)	221(56.7)	25(6.4)	58(14.9)	71(18.2)	2.85(1.287)
Clinical	11(2.8)		113 (29.0)	49 (12.6)	106(27.2)	111(28.5)	3.47(3.467)
Seminar	4(1.0)	7(1.8)	32(8.2)	195(50)	77(19.7)	75(19.2)	3.43 (1.014)
Morning session	7(1.8)	5(1.3)	117(30.0)	11(2.8)	140(35.9)	110(28.2)	3.54 (1.307)

Death review	137(35.1)	76(19.5)	89(22.8)	74(19.0)	10(2.6)	4(1)	1.37 (1.264)

Table 5 shows respondents views about different teaching methods that held to complete course of their discipline. It shows that out of 5-point scales (0 to 5) the mean (± standard deviation) scores for lecture, tutorial, practical, clinical, seminar, morning session and death review were 2.40(1.846), 2.28(1.142), 2.85(1.287), 3.47(3.467), 3.43 (1.014), 3.54 (1.307) and 1.37 (1.264) respectively. In other words, the means for lecture, tutorial, practical, clinical, seminar, morning session and death review were obtained 48%, 45.6%, 57%, 69.4%, 68.6%, 70.8% and 27.4% scores of the 5-point scales respectively.

Table 6 comparison of the views of the respondents about content coverage of their postgraduate classes and by the type of their institutes

Type of respondents	Mean (SD)	Comparison of means between groups	
		Between 3 groups	Post HOC LSD test between 2 groups
Medical College (n=39)	3.15(.540)	Welch ANOVA statistic = 1.644 $df_1 = 2$, $df_2 = 102.079$, **P** = .198 Point estimate of Eta-squared= .009	Not applicable
Medical University (n=132)	3.27(.537)		
Postgraduate medical institute (n=219)	3.16(.498)		

MC = Medical College, MU= Medical University, Postgraduate medical institute=MI

Table 6 shows the comparison of the opinion of the respondents of medical colleges, medical university and postgraduate medical institutes about the content coverage of their postgraduate classes. The mean score of the opinion of the respondents of the medical university were higher than others (*p*=.198).

Table 7 distribution of the respondents by their views about different training that held to complete course of their discipline (n=390)

Sites of training	Frequency and percentage of response and their correspond level						
	Never = 0	Rarely =1	Sometimes =2	Many times =3	Most of the times =4	Always =5	Mean (SD)
Indoor training	3(.8)	0	4(1)	4(1)	52(13.3)	327(83.8)	4.78(.641)
Outdoor	32(8.2)	24(6.2)	330(84.6)	2(.5)	1(.3)	1(.3)	1.79(.621)
Emergency dept.	30(7.7)	25(6.4)	327(83.8)	4(1)	2(.5)	2(.5)	1.82(.646)

ISSN: 2306-0654(Print), 2313-4224 (Online)
DOI:

Invasive procedure	53(13.6)	26(6.7)	285(73.1)	24(6.2)	2(.5)	0	1.73(.790)
Skill lab	324(83.1)	0	31(7.8)	27(6.9)	7(1.8)	1(.3)	.45(1.045)

Table 7 shows that higher percentage of the participants agreed that postgraduate training always provided in indoor of the institutes 83.8%. The majority of respondents agreed that their training done sometimes-in outdoor, emergency department, and training on invasive procedures. Most of the respondents expressed that training was not provided in skill laboratory.

Table 8 comparison of the views about content coverage of different postgraduate training and by the respondent categories

Respondent categories	**Mean(±SD) of views about content coverage**	**Comparison of means between groups**	
		Between 3 groups	**Post HOC LSD test between 2 groups**
Postgraduate students(n=300)	2.68(.735)	F of ANOVA statistic = 94.696 $df_1 = 2$, $df_2 = 87.825$, **P =** .000 Point estimate of Eta-squared = .245	P= .000 (PG St. vs. PG Dr.) P= .000 (PG St. vs. PG Th.) P= .048 (PG Dr. vs. PG Th.)
Recent postgraduate doctors(n=50)	3.5 (.503)		
Postgraduate medical teachers (n=40)	3.75(.494)		

PG St. = Postgraduate students, PG Dr. = Recent postgraduate doctors and PG Th. = Postgraduate medical teachers

Table 8 shows the comparison of means of the opinion about content coverage of different postgraduate training and by the respondent categories. The mean and standard deviation of scores of the opinion of the postgraduate students (2.68±.735) were lower than recently passed postgraduate doctors (3.5±.503) and postgraduate course teachers (3.75±.494); these differences were statistically highly significant (p=.000). Moreover, the differences was statistically highly significant by Post HOC LSD tests between the students and postgraduate doctors (p=.000), postgraduate students and teachers (p=.000); the differences between the recently passed postgraduate doctors and teachers (p =.048) were also significant (p=.048).

Table 9 comparison of the views about content coverage of different postgraduate training and by the type of their institutes

Type of institutes	**Mean(±SD) of views about content coverage)**	**Comparison of means between groups**	
		Between 3 groups	**Post HOC LSD test between 2 groups**
Medical College (n=39)	2.90(.754)		

Medical University (n=132)	3.10(.640)	Welch ANOVA statistic = 9.014 $df_1 = 2$, $df_2 = 106.660$, **P** = .000 Point estimate of Eta-squared = .039	P= .156 (MC vs. MU) P= .000 (MC vs. MI) P= .302 (MU vs. MI)
Postgraduate medical institute (n=219)	2.76(.852)		

MC = Medical College, MU= Medical University, Postgraduate medical institute=MI

Table 9 shows Comparison of the views about content coverage of different postgraduate training and by the type of their institutes. The mean and standard deviation of scores of the opinion of postgraduate medical institute (2.76 ±.852) were lower than medical university (3.10 ±.640) and medical college (3.5±1.062); these differences were statistically highly significant (*p*=.000). Moreover, the differences was statistically highly significant by p Post HOC LSD tests between the medical college and postgraduate medical institute (*p*=.000), But the differences between the medical college and medical university was insignificant (*p* =.156) and medical university & postgraduate medical institute was insignificant (p=.302).

Table 10 distribution of the respondents by their views about different assessment system in postgraduate medical course

Type of assessment	Frequency and percentage(%) of response and their correspond level						
	Never= 0 Frequency (%)	Rarely=1 Frequency (%)	Sometimes=2 Frequency (%)	Many times=3 Frequency (%)	Most of the times =4 Frequency (%)	Always=5 Frequency (%)	Mean (±SD)
Formative	5(1.3)	159(40.8)	47(12.1)	59(15.1)	35(9)	85(21,8)	2.55(1.623)
Summative	17(4.4)	6(1.5)	52(13.3)	70(17.9)	48(12.3)	197(50.5)	3.84 (1.426)
Essay question	153(64.9)	20(5.1)	69(17.7)	18(4.6)	23(5.9)	7(1.8)	.87 (1.348)
MCQ	312(80)	8(2.1)	36(9.2)	16(4.1)	17(4.4)	1(.3)	.52(1.122)
SBA MCQ	305(78.2)	25(6.4)	21(5.4)	17(4.4)	19(4.9)	3(.8)	.54(1.166)
SAQ	109(27.9)	3(.8)	21(5.4)	50(12.8)	51(13.1)	156(40)	3.02(2.084)
SEQ	6(1.5)	32(8.2)	40(10.3)	48(12.3)	88(22.6)	176(45.1)	3.82(1.393)
SOE	23(5.9)	8(2.1)	25(6.4)	24(6.2)	88(22.6)	222(56.9)	4.08(1.42)
OSCE / OSPE	8(2.1)	7(1.8)	2(.5)	41(10.5)	22(5.6)	310(79.5)	4.54(1.057)
OSLER	330(84.6)	5(1.3)	7(1.8)	28(7.2)	20(5.1)	0	.47(1.155)
Long case	4(1)	1(.3)	37(9.5)	18(4.6)	3(.8)	327(83.8)	4.55(1.071)
Short case	1(.3)	0	24(6.2)	20(5.1)	18(4.6)	327(83.8)	4.65(.867)
WPBA	390(100)	0	0	0	0	0	.00 (.000)

ISSN: 2306-0654(Print), 2313-4224 (Online)
DOI:

Table 10 shows respondents views about different assessment system that held to complete course of their discipline. It shows that out of 5-point scales (0 to 5) the mean (± standard deviation) scores for formative, summative, essay question, MCQ, SBA MCQ, SAQ, SEQ, SOE, OSCE/OSPE, OSLER, long case, short case and WPBA were 2.55(1.623), 3.84(1.326), .87(1.348), .523(1.122), .54(1.166), 3.02(2.048), 3.82(1.393), 4.08(1.420), 4.54 (1.057), .47(1.155), 4.55(1.071), 4.65(.867) and .00(.000) respectively. In other words, the means formative, summative, essay question, MCQ, SBA MCQ, SAQ, SEQ, SOE, OSCE/OSPE, OSLER, long case, short case and WPBA were obtained 51%, 77%, 17%, 10.4%, 10.8%, 60.4%, 76.4%81.6%,90.8%, 9.4%, 91%, 93%and 0.0% scores of the 5-point scales respectively.

Table 11 distribution of the respondents by their views about different barriers exist in postgraduate medical course in medicine and allied disciplines in Bangladesh

Type of Barriers	SDA = 0	DA =1	NAND =2	A =3	SA =4	Mean(±SD)
Lack of number of teachers	33(8.5)	80(20.5)	43(11)	98(25.1)	136(34.9)	3.57(1.366)
Engagement of teachers in other purposes	13(3.3)	34(8.7)	31(7.9)	183(46.9)	129(33.1)	3.98(1.030)
Number of patients	91(23.3)	186(47.7)	40(10.3)	66(16.9)	7(1.8)	2.26(1.053)
Poor Infra-structure	17(4.4)	43(11)	44(11.3)	208(53.3)	78(20)	3.74 (1.039)
Poor logistics support	17(4.4)	23(5.9)	25(6.4)	248(63. 6)	77(19.7)	3.88(.937)
Lack of skill lab	19(4.9)	13(3.3)	11(2.8)	158(40.5)	189(48.5)	4.24(1.014)
Scope of hands on training	2(.5)	38(9.7)	47(12.1)	242(62.1)	61(15.6)	3.83(.827)
Noncooperation of staffs	4(1)	66(16.9)	201(51.5)	114(29.2)	5(1.3)	3.13(.734)
Large number students	37(9.5)	178(45.6)	44(11.3)	98(25.1)	33(8.5)	2.77 (1.174)

SDA=Strongly Disagree, DA= Disagree, NAND=neither Agree nor Disagree, A=Agree, SA=Strongly Agree

Table 11 shows the distribution of the respondents by their views about different barriers in postgraduate medical course in medicine and allied disciplines in Bangladesh. It shows that out of 5-point Likert's scales (0 to 5), the means (± standard deviations) of the scores of views about lack of number of teachers, engagement of teachers in other purposes than teaching and training, number of patients, infrastructure facilities, logistic supports, presence of skill laboratory, scope of hands-on practice, co-operation of staffs', number of students in the course were 3.57±1.366, 3.98±1.030, 2.26±1.053, 3.74± 1.039, 3.88± .937, 4.24± 1.014,

ISSN: 2306-0654(Print), 2313-4224 (Online)
DOI:

3.83± .827, 3.13± .734 and 2.77± (1.174) respectively. In other words, the means of views about the lack of number of teachers, engagement of teachers in other purposes than teaching and training, number of patients, infrastructure facilities, logistic supports, presence of skill laboratory, scope of hands-on practice, cooperation of staffs and number of students in the course were obtained 71.4%, 79.6%, 45.2%, 74.8%, 77.6%, 84.8%, 76.6%, 62.6% and 55.4% scores of the 5-point Likert's scales respectively.

Table 12 distribution of the respondents by their views about different Suggestions for improvement of the postgraduate medical course

Type of Suggestions	SDA = 0	DA =1	NAND =2	A =3	SA =4	Mean(±SD)
Teachers should be trained on teaching and learning	0	0	41(10.5)	129(33.1)	220(56.4)	4.46(.678)
Teacher student ratio should be optimum	0	1(.3)	43(11)	160(41)	186(47.7)	4.36(.684)
Regular supervision by local authority	0	1(.3)	50(12.8)	279(71.5)	60(15.4)	4.02(.541)
Regular supervision by higher authority	0	1(.3)	14(3.6)	282(72.3)	93(23.8)	4.20(.496)
Incorporation of modern assessment in postgraduate medical education	0	16(4.1)	13(3.3)	96(24.6)	265(67.9)	4.56(.748)

SDA=Strongly Disagree, DA= Disagree, NAND=neither Agree nor Disagree, A=Agree, SA=Strongly Agree

Table 12 shows the distribution of the respondents by their views about different Suggestions for improvement of the postgraduate medical course in medicine and allied disciplines in Bangladesh. The study shows that out of 5-point Likert's scales (0 to 5), the means (± standard deviations) of the scores of views about the teachers should be trained on teaching and learning, teacher student ratio should be optimum, regular supervision by local authority, regular supervision by higher authority, incorporation of modern assessment in postgraduate medical education were 4.46(.678), 4.36(.684), 4.02(.541), 4.20(.496) and 4.56(.748) respectively. In other words, the means of opinion about the teachers should be trained on teaching and learning, teacher student ratio should be optimum, regular supervision by local authority, regular supervision by higher authority, incorporation of modern assessment in postgraduate medical education were obtained 89.2%, 87.2%, 80.4%, 84%, and 91.2% scores of the 5-point scales respectively.

The qualitative part of result of the thesis

ISSN: 2306-0654(Print), 2313-4224 (Online)
DOI:

In-depth interviews
Results of in-depth interviews with policymakers, medical educationists and professors of medicine and allied disciplines in Bangladesh.

Verbatim data of in-depth interviews

There were ten in-depth interviews. The data were recorded numerically. Conversations were compiled and transcribed as data as below-

4.2.1 Issue 1: The existing quality of postgraduate medical education in Bangladesh fulfill the national goals as mentioned in the updated version of BMDC curriculum

Seven (70%) key informants stated that the existing qualities of postgraduate medical education in Bangladesh did not meet the demand of the national goals. Two (20%) key informants agreed that majorities of national goals were achieved. One (10%) participant expressed that moderate percentages of national goals were achieved.

Verbatim data-

"I think, the present quality of postgraduate medical education in Bangladesh does not fulfill the national goals". Interview 01

4.2.2 Issue 2: Suggestions to update the present curriculum to meet the growing needs of the society

Six (60%) key informants stated that the present curriculum need to be updated including all domains of education with equal importance. Two (20%) respondents agreed to include current important topics in curriculum. One (10%) respondent expressed it needs to be updated in international standard. One (10%) informant proposed to review the curriculum after taking views from stakeholders.

Verbatim data-

"I think all domains of medical education should be included in postgraduate medical course curriculum with equal emphasis" Interview 01

4.2.3 Issue 3: The public expectations from postgraduate doctors in Bangladesh

Nine (90%) key informants stated that the public expect well behavior with the patients from the doctors. Two (20%) respondents mentioned that doctors should provide adequate time to the patient. One (10%) respondent expressed that doctors should practice the standard ways for breaking bad news. One (10%) respondent agreed that for any limitation of service to patient, doctors should address it properly and offer alternative ways to solve the problem.

Verbatim data-

"I think public expects, proper patient management and well behavior from doctors" Interview 01

"Doctors should practice the standard ways to breaking bad news" Interview 04

4.2.4 Issue 4: Improvement of the quality of postgraduate medical education and training in Bangladesh

Four (40%) key informants expressed that the training for teachers need to be increased. Two (20%) respondents advised that training should be under regular supervision by related authorities. One (10%) respondent expressed to ensure adequate time for the postgraduate students by teachers. One (10%) respondent agreed to increase the number of postgraduate teachers. One (10%) respondent expressed

that it is needed to open medical education unit in every postgraduate medical institute. One (10%) respondent expressed that adequate facilities and logistic support should be ensured in postgraduate medical institutes.

Verbatim data-

"The quality can be improved by increasing the number of trained personnel for the post graduate medical course" Interview 02

4.2.5 Issue 5: The number and quality of postgraduate government/private medical institutes in Bangladesh

Four (40%) key informants stated that the quality of postgraduate medical institutes should be at the level of international standard. Four (40%) key informants stated that relevant authorities should monitor the quality of postgraduate institutes regularly. Two (20%) key informants stated that number and quality should be supervised by relevant authorities.

Verbatim data-

"The quality of postgraduate medical institutes should be at international standard level and under regular supervision by related authorities" Interview 01

4.2.6 Issue 6: Teacher and student ratio of postgraduate government/private medical institutes in Bangladesh

Eight (80%) key informants stated that the teacher-student ratio was not adequate in postgraduate medical institutes in Bangladesh. Two (20%) key informants stated that the teacher- student ratio was adequate in Bangabandhu Sheikh Mujib Medical University (BSMMU).

Verbatim data-

"I think teacher: student ratio is severely inadequate for postgraduate medical course" Interview 06

"I think teacher-student ratio is adequate in BSMMU" Interview 01

4.2.7 Issue 7: The patient and student ratio of postgraduate government/private medical institutes in Bangladesh

Ten (100%) key informants stated that the patient and student ratio was adequate in postgraduate government medical institutes. However, the ratio is inadequate in postgraduate private medical institutes.

Verbatim data-

"In government institutes, the patient: student ratio is adequate" Interview 01

4.2.8 Issue 8: The availability of training /faculty development program of postgraduate medical course teacher of government/private medical institutes in Bangladesh

Four (40%) key informants stated that the government should ensure adequate teachers training or faculty development programme for postgraduate medical course. Three (30%) key informants stated that teachers training or faculty development are not adequate in postgraduate level. Two (20%) respondents advised to train teachers/ faculty to an international standard level. One (10%) respondent agreed to arrange faculty based multidisciplinary sessions, prioritized for knowledge and experience sharing.

Verbatim data-

"CME should consider the special/separate training /faculty development programmes for postgraduate medical course teachers" Interview 03

ISSN: 2306-0654(Print), 2313-4224 (Online)
DOI:

4.2.9 Issue 9: The barriers of quality of postgraduate medical education/training in government/private postgraduate medical institutes in Bangladesh

Six (60%) key informants stated that the lack of trained teachers & regular supervision by local and higher related authorities are the main barriers. Two (20%) key informants stated that engagement of teachers in other purposes than teaching and learning are the barriers. Two (20%) key informants stated that there is lacking of facilities.

Verbatim data-

"There is lacking of proper maintaining of the log books" Interview 01

"I think it is necessary to provide regular supervision by local and higher related authorities" Interview 06

"There are lacking of adequate training programmes" Interview 07

4.2.10 Issue 10: Suggestions regarding the efforts of National Quality Assurance Body (NQAB) to maintain and develop the quality of postgraduate medical education

Six (60%) key informants stated that the activities and qualities were necessary to be monitored and supervised regularly by internal and external audit. Three (30%) participants stated that NQAB should be strengthened at international level and make suitable for the society needs & formed by related experts. One (10%) key informant stated that they were known about the medical education of undergraduate course but not about the postgraduate medical course.

Verbatim data-

"The activities of NQAB should be monitored and supervised regularly by internal and external audit" *Interview 02*

4.2.11 Issue 11: Rotation placement in multiple centers/sites/ hospitals for the every student of postgraduate medical course to improve the quality of training

Ten (100%) key informants stated that the rotation placement in different relevant medical departments and institutes must be present to improve the quality of postgraduate medical course training.

Verbatim data-

"I feel rotation placement in different relevant medical departments and institutes must be present to improve quality of postgraduate medical course training" Interview 01

4.2.12 Issue 12: The overall impression regarding the level of knowledge, skills and attitude of the newly passed postgraduate doctors

Ten (100%) key informants stated that the postgraduate medical doctors are getting more recall knowledge and less practical/hands on training & communication skills.

Verbatim data-

"Skills and attitude are less practiced in teaching and in practical life" Interview 03

4.2.13 Issue 13: Financial support for postgraduate medical course student during course period by the academic institute/the government

Ten (100%) key informants stated that the students must have a handsome incentives or financial support by government/academic institutes

ISSN: 2306-0654(Print), 2313-4224 (Online)
DOI:

Verbatim data-

"I feel postgraduate medical students must have a handsome incentives or financial support by government/academic institutes thus he/she can give adequate concentration in their academic activities" Interview 01

4.2.14 Issue 14: Suggestions for bringing any change in the assessment process during course period of postgraduate medical students in Bangladesh

Seven (70%) key informants stated that the assessment process should be changed and need to incorporate less recall knowledge level and more higher level of cognitive domain such as understanding and up to creation level. Two (20%) key informants stated that assessment process should be world class standard. One (10%) respondents advised to change both the formative and summative examination with provision of rapid feedback to the students addressing their knowledge gap.

Verbatim data-

"Assessment process of the postgraduate medical course should be changed and provide equal importance to all domains of knowledge" Interview 01

4.2.15 Issue 15: Suggestions regarding any change in the admission process of postgraduate medical students in medical institutes

Four (40%) key informants stated that the admission process should include all Single Best Answer (SBA) type of MCQ. If it is not applicable, then include multiple true/false type of MCQ or higher level such as matching type of MCQ. Three (30%) respondents advised to include less recall level and more understanding, clinical scenario based or problem solving questions in postgraduate admission process. Three (30%) respondents expressed that the postgraduate medical admission process should be a holistic, unique, excellent process applying to all postgraduate institutes.

Verbatim data-

"Postgraduate medical admission process should include all Single Best Answer (SBA)type of MCQ or multiple true/false type of MCQ or higher level such as matching type of MCQ" Interview 01

4.2.16 Summary of in-depth interviews

The study collected the opinions or views from ten key informants. After receiving in-depth interviews by face-to-face or over online, audio recorded with the prior permission, the data were transcribed, categorized and condensed.

Summary report of opinions/ views are as follows-

1. The existing quality of postgraduate medical education in Medicine and allied disciplines in Bangladesh was not fulfilling the national goals as per updated version of the BMDC curriculum
2. The curriculum should include all domains of knowledge
3. Public expects proper patient management and well behavior with the patients
4. Doctors should practice standard & expert ways for breaking bad news
5. For any limitation of service to the patient, doctors should address it properly and offer alternative ways to solve the problem
6. The quality of postgraduate institutes should be of international standard and it should be under regular supervision by related authorities
7. Teacher-student ratio is adequate in BSMMU but not adequate in others institutes.

ISSN: 2306-0654(Print), 2313-4224 (Online)
DOI:

8. Needs separate postgraduate course teachers for postgraduate medical education
9. Governments should ensure adequate teachers training or faculty development programmes
10. National Quality Assurance Board (NQAB) is needed for postgraduate medical education
11. Rotation placement of postgraduate medical course students must be present in postgraduate medical courses
12. Postgraduate doctors are getting more recall knowledge but less practical skills. Attitude domain is less practiced
13. All postgraduate course students must have handsome financial support/ incentives by government/academic institutes
14. The assessment system should be changed and to incorporate recall knowledge & more higher cognitive domain such as understanding and up to creation level
15. Admission process for postgraduate medical course should include Single Best Answer (SBA) type of MCQ or higher-level of multiple true-false type of MCQ

Discussion

Discussion on quantitative part of the results

Based on data analysis, this study tried to assess the current status of Postgraduate Medical Education (PGME) in Medicine and allied disciplines practiced by the medical university/institutes/colleges in Bangladesh. Bangladesh offers a variety of postgraduate medical specialization programs through university, postgraduate medical institutes and medical colleges. There is a growing emphasis on incorporating practical training, hands-on practical training and clinical exposure into postgraduate programs. This can help to fulfill the gap between theoretical knowledge and practical skills needed for successful practice. Efforts are available to improve the quality of PGME by improving teacher training/faculty development programs to ensure teachers have the necessary skills and knowledge to train future specialist physicians.

This study (Figure 1) shows that majorities among the percipients 76.92% were postgraduate medical students and majorities 54.1% were participated from postgraduate medical institutes. Therefore, the study mainly representing the views of postgraduate medical students compared to postgraduate medical teachers and recently passed postgraduate doctors. These findings were due to majorities of postgraduate medical institutes of Bangladesh are government institute and they located at Dhaka. [12] Figure 2 shows highest number of participants 73.33% were male in the postgraduate medical courses. In undergraduate medical education (UGME) of Bangladesh, majorities were female students but in this study, in postgraduate medical education (PGME), male doctors were high in number. These findings were due to female doctors were less interested in postgraduate, more engaged with family matters and they had high number of defaulter rate from undergraduate and postgraduate medical courses.[13]

This study obtained information from the respondents (Figure 3) 12.82% responded by online and 87.18% by offline. These lower numbers of online participation were due to inadequate online response by participants even after repeated reminding and lack of practice online responses by them. Most of the participants 80% were assistant professor of different disciplines in this study (Figure 4). Because number of assistant professors were more in medical institutes and they were comparatively less

ISSN: 2306-0654(Print), 2313-4224 (Online)
DOI:

busy than associate professors and professors. Only 2.5% lecturers were included in this study, because they had postgraduate degree & they provide teaching & training to the postgraduate medical course students. The lecturers were more closely to students in some institutes, where assistant professors and associate professors to professors were less in number. Therefore, their participation was less.

Table 1 shows that out of 300 postgraduate medical course students, majorities had enrolled themselves in postgraduate degree FCPS in Medicine 34.33% then MD in Internal Medicine 9.67%. The third and fourth groups were MD in Cardiology 6% and Diploma in Cardiology 5.67% respectively.

Majority (88.5%) students wanted to study clinical subjects in post-graduation. General Medicine and General Surgery were the most coveted specialties. The three main bases for the choice of specialty were passion for the subject, monetary gains and how well the subject taught. Majority of students wanted to work in government sector after study. Clinical branches remain preferred over non-clinical specialties and research remains a low priority among students.[14]

Our research revealed some interesting trends in the career preferences over time among medical students in Bangladesh. One trend that stands out is the increasing interest in pursuing a career in Internal Medicine and Cardiology over time. This evidence has also been observed in other studies, which suggests that medical students are becoming more attracted to the field of medicine.[15] This could be due to various factors, such as the growing demand for medicine due to more opportunities for private practice or more job opportunities, perceived income potential, the scope of attending a wide range of patients, lifestyle, prestige etc.

Regarding course documents

This study (Figure 5) shows that out of 390 respondents, mentioned that 41.28% had no curriculum, 15.38% had no syllabus, and 48.97% respondents agreed that they had academic calendar. Among all respondents, 53.33% confirmed that they had no class routine or course schedule. The course documents like curriculum, syllabus, academic calendar and course schedule or class routine are very important to complete a course smoothly. Therefore, these documents should be available to the students, teachers and related stakeholders.

Table 2 shows that higher percentage of participants of medical colleges, medical university 87.12% and postgraduate medical institutes 96% agreed that they had curriculum (p =.000). The majority percentages of medical university 62.88% and postgraduate medical institutes 89.95% agreed that they had syllabus (p =.000) compared to medical colleges 20.51%. On the other hand, the higher percentage of all group of respondents agreed that they had academic calendar. The higher percentage of participants of medical college 69.23% and medical university 57.58% agreed that they had course schedule (p =.000) compared to postgraduate medical institutes 36.07%. The medical university and postgraduate medical institutes were well organized. Therefore, they had recently developed syllabus and then medical colleges. The medical colleges and medical university were more concerned about the course schedule compared to postgraduate medical institutes.

Regarding teaching

This study reveals (Figure 6) that out of 390 respondents, highest percentage 31.79% of participants agreed that the postgraduate classes held sometimes out of five point Likert's scale. This study (Table 8) shows the mean score of the opinion regarding

ISSN: 2306-0654(Print), 2313-4224 (Online)
DOI:

class regularity of the postgraduate course teachers (3.65) were much higher than the postgraduate students (3.19) and recently passed postgraduate doctors (3.14) (p=.011). Moreover, the differences were statistically significant by Post HOC LSD tests between the students and teachers (p =.016) and postgraduate doctors and teachers (p=.032) but the differences between the students and postgraduate doctors were insignificant (p=.755). This study shows that the postgraduate medical course teachers agreed about the more class regularity but postgraduate medical students & recently passed doctors were less agreed about class regularity. Students expect more class regularity & their opinions were more important than postgraduate medical teachers were.

The study shows the mean score of the views about regularity of their postgraduate classes by the respondents of the medical university (4.1) were higher than other institutes (p=.000) (Table 3). This study reveals that there were higher regular class held in medical university than other postgraduate medical institutes. Because medical university is well organized and postgraduate medical course teachers were higher in number than other postgraduate medical institutes. The mean score of the opinion of the respondents regarding class regularity in the postgraduate medical institutes located in Dhaka (3.19) was lower than out of Dhaka (3.51) but the differences was not statistically significant (p=.100). This may be less number of postgraduate medical students in postgraduate medical institutes in out of Dhaka and they were engaged in academic issues.

This study (Figure 7) shows that the most of the respondents 76.5% agreed about the content of the classes that held in their institutes were moderately covered. This finding reveals that though most of the postgraduate courses did not have any documented curriculum in the postgraduate institutes even that they were conducting the classes adequately.

Regarding teaching methods

This study (Table 4) shows the means for different teaching methods like lecture, tutorial, practical, clinical, seminar, morning session and death review were obtained 48%, 45.6%, 57%, 69.4%, 68.6%, 70.8% and 27.4% scores of the 5-point Likert's scales respectively. The doctors are busier with service to the patients and teaching related with direct service to patient like clinical class at bedside was more 69.4%. The lectures, tutorial class and death review were significantly less in postgraduate medical courses and these demand further study.

The study compared (Table 5) of the opinion of the respondents of medical colleges, medical university and postgraduate medical institutes about the content coverage of their postgraduate classes. The mean score of the opinion of the respondents of the medical university (3.27) were higher than the other (p=.198). This was because medical university had more teachers, facilities and academic environment than medical colleges and other medical institutes.

These significant differences may be due to regular classes and regular, proper supervision by their own authority. It suggested that modification of teaching methods for further improvement in medical education is very important. Introducing innovative methods in teaching pre and para clinical subjects and making medical teaching a more attractive career prospect can help to improve this picture.[14]

Training related

The study (Table 6) explores that higher percentage 83.8% of the participants agreed about the postgraduate training provided in

ISSN: 2306-0654(Print), 2313-4224 (Online)
DOI:

indoor 83.8% of the institutes were always and it was assessed by five point Likert's scale. The majority of respondents agreed that their training done in outdoor 84.6%, emergency department 83.8%, and training on invasive procedures 73.1% were sometimes. Most of the respondents expressed that training for the students was not provided in skill laboratory. There was lack of proper facilities, trained personnel, manpower or staff in outdoor, emergency department, skill laboratory. These may be the major causes and these need to be further studied. Table 7 of this study shows the comparison of means and standard deviations of the views about content coverage of different postgraduate training and by the respondent categories. The mean and standard deviation of scores of the views of the postgraduate students (2.68±.735) were lower than recently passed postgraduate doctors (3.5±.503) and postgraduate course teachers (3.75±.494); these differences were statistically highly significant (p=.000). There are variation of training facilities in different medical institutes and the facilities should be equally distributed in all institutes as far as possible.

The current study (Table 8) shows the mean and standard deviation of scores of the views about content coverage of postgraduate medical institute (2.76 ±.852) were lower than medical university (3.10 ±.640) and medical college (3.5±1.062); these differences were statistically highly significant (p=.000). Table 25 of this study shows the comparison of the views about satisfaction with the training and by the type of their institute. Table 9 of this study shows the mean and standard deviation of scores of the views about satisfaction with the training of postgraduate medical institute (2.76 ±.856) were lower than medical university (3.03 ±.751) and medical college (2.77±.872); these differences were statistically significant (p=.009). The medical university and medical colleges are well organized than other postgraduate medical institutes for postgraduate medical courses in Bangladesh.

It suggested that modification of training sites/ process and hands on practical training for further improvement in medical education is essential. Many stakeholders reported a lack of qualified trained teachers and inadequate infrastructure, logistics support in postgraduate medical institutes and medical colleges. This can hamper effective teaching, training and practical skill development. There might be a neglect of clinical teaching in emergency department, skill laboratory, invasive procedure laboratory, limiting students' opportunities to hands on-practice their skills on real patients. Overall, the PGME system in Bangladesh is evolving with a focus on practical training and faculty development. There are challenges remain in terms of quality variations across institutions. Newer learning technologies of postgraduate medical education such as use of simulators and e -learning should also be considered to include in PGME.[16]

Regarding assessment

The study (Table 10) shows respondents views about different assessment system that held to complete course of their discipline. The means of formative, summative, essay question, MCQ, SBA-MCQ, SAQ, SEQ, SOE, OSCE/OSPE, OSLER, long case, short case and WPBA were obtained 51%, 77%, 17%, 10.4%, 10.8%, 60.4%, 76.4%81.6%,90.8%, 9.4%, 91%, 93%and 0.0% scores of the 5-point Likert's scales respectively. The study (Table 31) shows the mean scores of the views about the content coverage with different postgraduate medical courses assessments of the recently passed

ISSN: 2306-0654(Print), 2313-4224 (Online)
DOI:

postgraduate doctors were higher than the postgraduate students and postgraduate course teachers (p=.000). The study (Table 32) shows the mean scores of the views about content coverage with different postgraduate course assessments of the medical colleges were higher than other institutes (p=.032). It suggested that modification of assessment systems for further improvement in medical education is necessary.

This study (Table 11) shows the mean scores of the views about different barriers exist in postgraduate medical courses in medicine and allied disciplines in Bangladesh were lack of teachers, engagement of teachers in other purposes than teaching and training, large number of patients, lower infrastructure facilities, lack of logistic supports, absence of skill laboratory, poor scope of hands-on practice, non-co-operation of staffs and large number of students in the course and hey were obtained 71.4%, 79.6%, 45.2%, 74.8%, 77.6%, 84.8%, 76.6%, 62.6% and 55.4% scores of the 5-point Likert's scales respectively. This study (Table 34) shows that out of 5-point Likert's scale (0 to 5), the mean scores of the views about different suggestions for improvement of the postgraduate medical courses in Medicine and allied disciplines in Bangladesh, were the teachers trained on teaching and learning, optimum teacher student ratio, regular supervision by local authority, regular supervision by higher authority, incorporation of modern assessment systems. They were 89.2%, 87.2%, 80.4%, 84%, and 91.2% scores respectively. The majority of the respondents suggested to improving training of teachers on teaching and learning, optimum teacher student ratio, regular supervision by local and higher authorities, incorporation of modern assessment system in postgraduate medical education in Bangladesh.

There is a need for a strategic vision of the future for postgraduate medical education. This study addresses the themes to improvement of postgraduate medical education by reform the curriculum, incorporating new learning technologies, proper assessment and professionalism in medical education. The limitations in implementing a vision for postgraduate medical education are not only to be technical, pedagogical, or even logistical but also to be the result of a lack of imagination by those concerned with planning postgraduate medical education and their ability to bring about the necessary changes.[17] They emphasized incorporating medical ethics, communication skills and behavioral sciences, including modern assessment system and using advanced technologies in postgraduate medical education programmes. Medical university has adequate teachers and infrastructure. However, medical colleges and postgraduate medical institutes faced limitations in terms of trained teachers, infrastructure and resources to accommodate a larger number of postgraduate students effectively. There are four themes in PGME such as postgraduate medical curriculum, application of learning technologies, assessment of competence and professionalism in medical education.[16] The quality of PGME varies across different institutions, highlighting the need for standardization and better accreditation processes. Innovative approaches to teaching, development of skills, high quality assessment and development of professionalism require resources in terms of time and finances.[18]

Discussion on the qualitative part of the results

The study collected the opinions or views from ten key informants. After receiving in-depth interviews by face-to-face or over

ISSN: 2306-0654(Print), 2313-4224 (Online)
DOI:

online, audio recorded with the prior permission, the data were transcribed, categorized and condensed. Report of the views were as follows-

The existing quality of postgraduate medical education in Medicine and allied disciplines in Bangladesh was not fulfilling the national goals as per updated version of the BMDC curriculum. The curriculum should include all domains of knowledge and should give relevant importance. Public expects proper patient management and well behavior with the patients from the doctors. Doctors should practice standard and expert ways for breaking bad news and it may decrease the unwanted or unusual incidence/harassment of doctors or patients, patient party. For any limitations of service to the patients, doctors should address properly and offer alternative ways to solve the problem(s). The key informants feel that the number of postgraduate medical institutes are adequate in Bangladesh. They commented that the number and quality of postgraduate institutes should be of international standard and under regular supervision by related authorities. This study revealed from in-depth interviews that the teacher-student ratio was adequate in BSMMU but not adequate in others institutes. They suggested to reform separate postgraduate medical course teachers board to conduct the postgraduate medical course properly. They expressed that the government should ensure adequate teachers training or faculty development programmes. The respondents advised to reforming or generating a separate National Quality Assurance Board (NQAB) for postgraduate medical course. The rotation placement of students in discipline related sites or hospitals must be present in postgraduate medical course. They also agreed that the postgraduate doctors are getting more recall knowledge but less practical skills and attitude domain. All postgraduate course students must have handsome financial support/incentives by government/academic institutes. A study by Knapp (2002) about financing of medical education describes that inadequate financing is one of the major problems of the medical education.[19]

The assessment systems should be changed as per need or demand of the society. It is necessary to incorporate less recall knowledge and more cognitive domain such as understanding and up to creation level in postgraduate medical courses. Admission process for postgraduate medical course should include single best answer (SBA) type of MCQ or higher-level true-false type of MCQ. The genuine problems whether unaddressed or neglected faced by the postgraduate medical students during their course period needs to be taken care of at all levels. Therefore, the students can put their best performance and contribute to the health care delivery system and academics.[1]

Conclusion

The study highlights the ongoing development of postgraduate medical education in Bangladesh. Stakeholders acknowledge positive steps to increasing the emphasis on practical training, communication skills, and attitude and faculty development initiatives. However, challenges persist; including limited postgraduate trained teachers, infrastructure constraints, logistic constraints and limited hands-on training. There are potential variations in quality among institutes like medical colleges, medical university and specialized postgraduate medical institutes. The study emphasizes the need for significant reforms to enhance the quality and effectiveness of postgraduate medical education in Bangladesh. Key issues highlighted include

the need for updated curricula, improved faculty development, better infrastructure. The study calls for collaborative efforts among educational institutions, policymakers, and international organizations to address these challenges. The study highlights that the postgraduate medical education in Bangladesh needs to meet the global standards and effectively serves the healthcare needs of the population. By addressing these challenges, Bangladesh can create a robust postgraduate medical education system that equipped doctors with the necessary skills and knowledge to deliver high-quality healthcare to the population.

Declaration of patient consent

Patient's consent not required as there no patients in this study

Financial support and sponsorship

Nil

Conflicts of interest

There are no conflicts of interest

References

1. Mohan L, Pant J, Agrawal M, Shah Z. Post graduate training in medical colleges of India: Resident Physicians' perspective. Indian Journal of Physiology and Pharmacology 2021; 65: 245-55.
2. Majumder MAA 2003. 'Medical Education in Bangladesh: Past Successes, Future Challenges'. Bangladesh Medical Journal 2003; 32:37-39.
3. Sayeed, M A. Medical education in Bangladesh - past, present and future.Article *in* Ibrahim Medical College Journal · November 2010DOI: 10.3329/imcj.v4i2.6493
4. Bangladesh College of Physicians & Surgeons, Excellence is the Only Mark 2023.Available from: https://www.bcps.bd.org. [Last accessed on 2023 Aug 22]
5. Bangubandhu Sheikh Mujib Medical University (BSMMU) 2023. Available from: https://www.bsmmu.gov.bd. [Last accessed on 2023 Aug 23]
6. Malik A 2016. Post Graduate Medical Education in Bangladesh. Journal of National Heart Foundation of Bangladesh 2016; 5:2-7
7. Chowdhury, HK. Post graduate Medical Education: An overview. Journal of BCPS 2014.32; 1: 1-4.
8. WFME GLOBAL STANDARDS FOR QUALITY IMPROVEMENT OF MEDICAL EDUCATION the 2023 Revision.
9. Bangladesh Bureau of Statistics 2022. bbs.gov.bd. [Last accessed on 2023 Nov 22]
10. Kulike K. 'Quality Assurance and Quality Improvement: The students' perspective'. German Medical Association 2004. Website www.kulike-vortrage [1].pdf.
11. Montemayor LLE. 'How We Assess Students Using A Holistic Standardized Assessment System; Medical Teacher 2004.26; 5: 400.
12. Medical Education Bulletin, 2022.www.dgme.gov.bd. [Last accessed on 2023 Aug 29]
13. Akhter N. Views of the female graduate doctors regarding why not involved in healthcare services / health professional education : A qualitative study. Bangladesh Journal of Medical Education · January 2024 DOI: 10.3329/bjme.v15i1.70949
14. Chawla J et al. Factors affecting the choice of postgraduate specialty among undergraduate medical students: a prospective observational study from India. South-East Asian Journal of Medical Education 2018; 12(2):35 DOI:10.4038/seajme.v12i2.50
15. Elzain YI, Alawad AAM, Khan WS, Khalil HO, Abdelrazig YM, Ahmed OB, et al. Factors influencing the choice of internal medicine as a career

ISSN: 2306-0654(Print), 2313-4224 (Online)
DOI:

among undergraduate medical students. Int J Health. 2014;2(2):22–5.
16. Dutta PK. POSTGRADUATE MEDICAL EDUCATION: THEMES AND TRENDS. JCMCTA 2016;27 (1):1-3
17. R M Harden. Trends and the future of postgraduate medical education. Emergency Medical Journal. October 2006; 23 (10)
Cox M, Irby DM, Cooke M, Sullivan W, Ludmerer KM. Medical Education American Medical Education 100 Years after the Flexner Report. *N Engl J Med.* 2006;13355:1339–44.
19. Knapp R. Financing graduate medical education and limiting resident work hours:a political assessment. *Am J Surg*. 2002;184(3):187–195.

How to cite this article: *Ahommed F, Noman M U, Ahmed AKM S, Rahman I , Islam M S,* Afrin M. Current Status of Postgraduate Medical Education in Medicine and Allied Disciplines in Bangladesh: Stakeholders' Views: Bangladesh Journal of Medical Education 2024;00:000-000.