

Role Model Characteristics and Impact of Role Models on Medical Students' Specialty Choices

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Abstract

This was a descriptive type of cross-sectional study conducted to identify the characteristics of role model medical teachers as perceived by medical students and to identify the influence of role models in selecting subjects for their future careers. This study was conducted from July 2019 to June 2020. A semi-structured, self-administered questionnaire was used to collect data. A total of 868 medical students of phase III and phase IV were the respondents of the study. All available students who were willing to participate in the study were selected and medical colleges were selected purposively. The study revealed that out of 868 respondents 741 (85.4%) had identified role models during the course of their studies and 127 (14.6%) respondents could not identify any role models. It was observed that 91% of students opted for clinical subjects while 9% opted for preclinical and para-clinical subjects. With regards to their subjects of choice for future careers, 21.0% of the students preferred Medicine, followed by Surgery (20.0%), Gynecology (9.2%), and Orthopedics (3.8%). Two hundred and thirty-two (26.7%) of the students did not choose any subject for their future careers. Regarding the influence of role models in selecting subjects for future career, it was revealed that 334 (61%) respondents felt that role models had influence. Maintaining integrity and neutrality by role models was given the highest importance and general appearance of role models was considered least important by the respondents. The academic institutes should make an effort to develop the role modeling of faculty by highlighting positive attributes of role models. Teachers should be made aware of the influence of role models on their future colleagues

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Introduction

Role modeling is regarded as the primary source of learning humanistic and ethical aspects of healthcare. It is described as a cognitive process in which students actively observe and imitate the characteristics of their perceived models¹. Physician role models affect the attitudes, behaviors, and ethics of medical learners and foster professional values in trainees.

They also influence the career choices of medical students². The attributes of medical role models have been the subject of several interesting studies. Wright and colleagues looked at physicians who had been identified as excellent role models by students and residents. They found that the most important qualities in role models were a positive attitude to junior colleagues, compassion for patients, and

integrity. Excellent role models spent more time teaching and conducting rounds and were more likely to stress the importance of the doctor-patient relationship and psychosocial aspects of medicine³.

Choosing a medical specialty and making decisions concerning a future career comprise complex and difficult processes for medical students and newly graduated physician. These processes are important not only for individuals but also for healthcare systems, as they have implications in medical workforce planning. A number of different factors are known to influence medical specialty choice, including gender, personality features, academic interests, specialty characteristics and training demands, curricular and extracurricular past experiences, financial aspects and lifestyle expectations⁴. Positive role models influence the actions of those who consider them as role models and they also motivate them to uncover the true potentials to overcome their weaknesses. Role models are the living examples to set a standard to strive for or compare to be like them or exceed them.

This descriptive type of cross-sectional study was conducted to identify the characteristics of role model medical teachers as perceived by medical students

and to identify the influence of role models in selecting subjects for their future careers.

Methods and Materials

It was a descriptive type of cross-sectional study. The study period was from July 2019 – June 2020. The study places were three governmental and two non-governmental medical colleges of Bangladesh. Undergraduate medical students of phase III and phase IV were the study population. The sample size was 868 medical students. A self-administered semi-structured questionnaire was used to collect data. Questionnaires were distributed after a brief description of the purpose of the study and questionnaires were collected after 20 – 25 minutes. The Likert scale was used to measure responses. The students rated a number of skills and traits (domain/themes) pertaining to personality, teaching abilities, soft skills, emotional traits and moral elements on a 5-point scale (0= Not important to 5= Absolutely necessary) to assess the importance of those traits of role models as perceived by the respondent students. Medical colleges were selected purposively and available students who were willing to participate in the study were selected. After collection data were checked and then entered into Statistical Package for Social Sciences (SPSS) version 22.0 for analysis.

Results

A total of 868 medical students of phase III and phase IV took part in the study of which 307 (35.4%) were males and 561 (64.5%) were females. Of all the students 472 (54.4%) were from phase III and 396 (45.6%) were from phase IV. When the presence of role models was considered, it was found that 741 (85%) had role models

and 127 (15%) did not have any role models. More than 73% of students had chosen subjects for their future career while 26.73% could not choose any subjects for their career. It was observed that of the 572 student respondents, 520 (91%) students opted for clinical subjects while only 52 (9%) students opted for preclinical and para-clinical subjects.

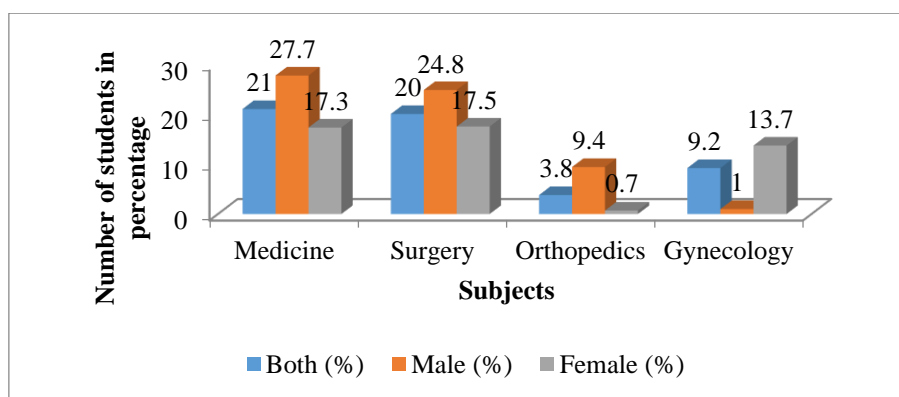


Figure 1 Bar diagram showing top four subjects chosen by respondent medical students for their future career(n=868)

Figure 1 shows the top four subjects chosen by respondent students. About 21%, 20%, 9.2% and 3.8% students decided to take

Medicine, Surgery, Gynecology and Orthopedics respectively as their subjects for future career.

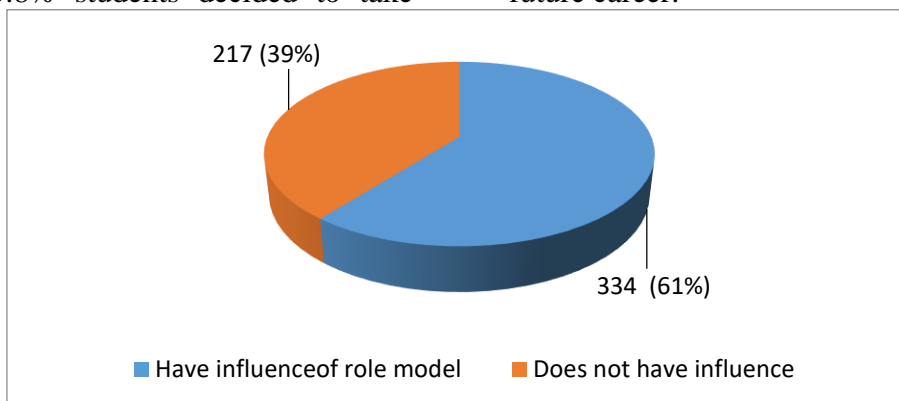


Figure 2 Distribution of the respondents as per their views regarding influence of role model in choosing subjects for future career (n=551)

Figure 2 reveals that role models played a positive role in choosing their subjects for future career in case of 334 (61%) students while 217 (39%) mentioned that their role models did not have any influence in choosing subjects for future career.

All respondents identified faculty and physician teachers as role models as defined

by the study. Respondents rated characteristics on a five-point scale. For each characteristic a mean score was calculated (see Table 1).

Table 1 Aggregated mean ratings of characteristics considered important in selecting role models (n=868)

Personality	Teaching abilities	Soft skills	Emotional skills	Moral elements
Positive attitudes displayed to colleagues and students (3.34) Having compassion for patients and their families (3.15) Integrity and neutrality (3.52) Interactions with other healthcare workers (2.54) Possessing leadership qualities (2.62) Having a sense of humor (2.56) Accessibility (3.24) Giving the importance of family (2.69) General appearance (1.17) Intelligence and brightness (2.98) Ability to think independently (3.01) Having an orderly and logical mind (3.13) Decisiveness (3.10) Having a likeable personality (2.51) Flexibility and adaptability (2.83)	Ability to teach in an exciting and stimulating manner (3.18) Speaking/presentation skills (3.19) Listening skills (3.16) Ability to make difficult topics understood (3.43) Patience (3.25) Nonthreatening teaching style (2.74) Ability to teach various levels of trainees (2.66) Strong knowledge base outside his/her specialty (2.25)	Trying to understand the culture and beliefs of patients (2.31) Ability to interact effectively with patients and their families (2.89) Proficiency as a diagnostician (3.35) Having knowledge about medical matters (3.46) Ability to explain things clearly (3.14) Keeps up-to-date with medical advances (3.06) Ability to perform various procedures (2.71) Awareness of his/her strength and weaknesses (2.92) Ability to communicate in patients' language (2.34) Enthusiasm in his/her work (2.95) Ability to work well in a team (2.82)	Having a positive outlook on life (2.78) Being emotionally stable (2.64) Being an understanding sort of person (2.85) Ability to remain calm under pressure (3.07)	Being inclined more toward helping people than to make money (3.06) Willing to make time to listen sympathetically (2.95) Respecting confidentiality (3.20) Being an honest person (3.49) Being responsible and trusted (3.47) Considerate of other's feelings (2.88) Working long hours in the time of need (2.20)

*Ranking of importance of various characteristics, grouped under 5 broad categories, is based on a five-point scale (0 = not important, 1=useful, 2=important, 3= very important, 4= absolutely essential)

Table 2 Domain-wise comparison of means between male and female students' perceived importance of qualities of good role models

Domain	Mean score (\pm SD)			P value
	Overall	Male	Female	
Personality traits	2.82 \pm 0.520	2.87 (\pm 0.521)	2.79 (\pm 0.518)	0.043
Teaching abilities	2.98 \pm 0.605	3.02 (\pm 0.589)	2.96 (\pm 0.613)	0.202
Soft skills	2.90 \pm 0.566	2.90 (\pm 0.588)	2.91 (\pm 0.554)	0.849
Emotional traits	2.83 \pm 0.728	2.86 (\pm 0.722)	2.82 (\pm 0.731)	0.396
Moral elements	3.03 \pm 0.627	3.04 (\pm 0.629)	3.03 (\pm 0.625)	0.959

Table 2 shows the average of the overall and gender-wise individual mean scores for the skills related to personality traits, teaching abilities, soft skills, emotional traits and moral elements. It was observed that moral elements scored highest (3.03 \pm 0.627) and personality traits elements scored lowest (2.82 \pm 0.520).

When gender was considered, it was observed that there was no important difference between the observations in teaching abilities, soft skills and emotional traits and moral elements. But the difference in the mean score of personality traits between males and females was significant (p<0.043).

Table 3 Mean responses of male and female and group differences with regard to characteristics considered important in identifying a role model

Important role model characteristics	Mean score(\pm SD)		p value
	Male	Female	
Positive attitudes displayed towards colleagues and students	3.44(\pm 0.830)	3.29(\pm 0.859)	0.017*
Integrity and neutrality	3.45(\pm 0.851)	3.56(\pm 0.736)	0.04*
Leadership qualities	2.73(\pm 0.977)	2.57(\pm 1.073)	0.032*
General appearance	1.24(\pm 1.237)	0.95(\pm 1.125)	0.001*
Having a likeable personality	2.62(\pm 1.095)	2.45(\pm 1.147)	0.035*
Flexibility and adaptability	2.92(\pm 1.023)	2.78(\pm 0.996)	0.038*
Being emotionally stable	2.72(\pm 0.906)	2.56(\pm 0.989)	0.057
Respecting confidentiality	3.29(\pm 0.872)	3.16(\pm 0.880)	0.035*

* *Differences are statistically significant*

When mean responses of males and females were compared significant differences were observed in few of the traits. Table 3 shows significant differences when mean responses of different characteristics of

males and females were compared. Male students rated seven characteristics significantly more highly while females rated only one characteristic significantly highly.

Discussion

According to social learning theory, learning is enhanced when students can observe and emulate the thinking and actions of role models⁵. In the present study 871 (85%) had role models and 127 (15%) did not have any role models. McGill University school of Medicine, Montreal, Canada supports the findings of this study⁶. In the present study 91% opted for clinical and 9% opted for preclinical and para-clinical subjects. A study conducted in Sardar Patel Medical College, Bikaner, Rajasthan showed a similar (99% vs 1%) trend⁷. The difference in findings between the two studies may have some socio-cultural contribution.

The career preference made by medical students and doctors and factors influencing these preferences are of importance to medical work force planners especially in times of oversupply or undersupply of doctors⁸. The top four subjects chosen by the students of the present study were Medicine (21%), Surgery (20%), Obstetrics and Gynecology (9.2%), and Orthopedics (3.8%). In a study conducted in Jordan University of Science and Technology, Irbid, Jordan showed Surgery, Internal Medicine, Pediatrics and Obstetrics and Gynecology as the top four subjects⁹. Another study showed top four subjects as Medicine (30.97%), Pediatrics (23.36%), Surgery (14.13%) and Obstetrics and Gynecology (11.95%)¹⁰.

In this study, 334 (61%) mentioned that role models played a positive role in choosing subjects for future career and 217 (39%) mentioned that their role models did not have any influence. Studies conducted in different places showed varied influences ranging from 38% to 82.8%^{4,11,12}. The differences may be due to socio cultural differences or because of the quality and character of role models.

When all traits of role models were considered as domains or themes it was observed that the elements under moral domain scored highest. It may be due to the fact that students are more aware of the moral pitfalls and ethical dilemmas that exist. It is encouraging that the moral and ethical compass of the future doctors is set in the right direction.

In personality traits' theme it was observed that top traits were positive attitudes to colleagues and students, integrity and neutrality and compassion for patients and their families and it has congruence with similar studies^{6,11,13}. When clinical skills or soft skills themes were considered it was observed that having knowledge about medical matters, proficiency as a diagnostician, ability to explain things clearly were given importance and these findings are almost similar in other studies⁶. When moral elements theme was considered it was observed that findings of present study are similar to other studies¹⁴.

Conclusion

In the present study it was revealed that most of the students had role models and they also felt that role models had influence in choosing the subjects of their future career.

Many of the positive attribute and behaviors students considered important could be modified or could be acquired. Academic institutions thus can make efforts to develop or improve the role modeling of faculty by highlighting the role of humanistic attributes in medical teachers across disciplines. Teachers are required to be aware of learners' opinions. Institutions are required to support faculty development activities to present students with a wide range of role models in the form of researcher, specialist, or teacher according to their disciplines and diverse expectations and needs.

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