

## Research Article

### Role Modeling in Medical Education and its Influences on Professional Behaviours

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#### Abstract

**Background:** Role modeling plays a major role in shaping the identity of a medical graduate. Medical students adopt various characteristics of their teacher's role modelling.

**Objective:** The objective of the study was to explore factors influencing medical teacher's own behavior as a professional due to role modeling of their teachers during their college life.

**Methods:** This explanatory sequential mixed method design involved medical teachers of three prominent medical colleges of Punjab, Pakistan from January 2018 to November 2018. Seventy-five medical teachers filled a pre-designed questionnaire after informed consent followed by eighteen semi-structured face to face interviews. Quantitative data was analyzed via SPSS software and transcribed interviews were organized in Atlas ti software for data analysis.

**Results:** Participants ranked individual's behaviour as topmost influencing factor for role modelling followed by professionalism, clinical competence and teaching skills during phase one. In phase two, one hundred and sixty-one open codes were generated out of the eighteen interviews analysis and were grouped in two themes: (1) positive role models and its influences and (2) negative role models and its influences. Effective teaching, clinically competent doctor and better personal qualities influencing attributes of positive role models whereas negative role models attributes included being an incompetent doctor, ineffective in teaching and having unpleasant personal qualities.

**Conclusion:** Medical students can acquire both positive and negative attributes through role modelling of their teachers. Faculty must be encouraged to adapt to reflective practices in order to improve as role models.

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#### Introduction

A medical student's identity formation is a complex phenomenon which is created not only by the formal curriculum but also through informal curriculum. These identities are developed and transformed during various interactions with their

teachers who act as role models during lectures, ward rounds, small group teaching, bedside teaching and communication during informal settings encompassing a major part of the students' educational environment.<sup>1</sup>

Students' interactions with their teachers have a large

impact on the professional identity.<sup>1</sup> A medical undergraduate student adopts the particular behaviours which seem rewarding to them. On the contrary, there is an equal opportunity of exposure and chances of students having a negative impact by few poor role models in the same institution.<sup>2</sup> Hence, medical teachers should be very well aware of the significant impact of role models on the identity formation and behaviours of medical student.

It is imperative for educators to provide the students not only a sound updated professional curriculum but also a comfortable learning environment. Not considering these issues can have a very significant negative impact on development of professional behaviours of future healthcare providers.<sup>3</sup>

Studies have been done showing that there is a strong association between exposure of medical students to the role models and choice of the field for the future career<sup>(4)</sup>. It was found that a significant number of medical students choose a career specialty because of the positive impact of the role models showing professional skills during their training. The effect can be discouraging sometimes as the unethical and negative attitude of the teacher can push away students from choosing a certain specialty as a career. Hence, their entire perception of medical profession can be affected by role modeling provided by their medical teachers in school life.<sup>5</sup>

A factor highlighted in certain studies about role modeling is the potential negative impact of lapses in the professional behaviour of the teachers and clinician, as surprisingly the trainees or the students may unintendedly reproduce those particular poor behaviours in their own clinical practice.<sup>(5)</sup> It is very difficult to assess ethics and professionalism at the end of a medical program as there are no authentic tools currently available till date to measure professional competencies.<sup>6</sup> The ethics and behaviours overall were seen to be patterned unconsciously by the undergraduates.<sup>6</sup>

The purpose of the study was to find out about various factors influencing a medical teacher's professional behavior with reference to their teachers as role models.

## Methods

This study was conducted using an explanatory sequential mixed method design, in a two-phase scheme from January 2018 to November 2018. In the first phase, we gathered quantitative data and analyzed the findings, and in the second, we used the results to design (or build onto) the qualitative part. The general purpose of this project was to collect qualitative data that would help explain in more detail the initial quantitative results and explore them in more depth. Ethical approval was taken vide reference number MME/12/B/05 dated 21-12-2018 from University of Lahore, Lahore.

After IRB approval, a questionnaire with 20-items was designed after literature review and was distributed among medical teachers of three well reputed medical colleges of Punjab, Pakistan (Sargodha Medical College Sargodha, Rai Medical College Sargodha and Aziz Fatimah Medical and Dental College Faisalabad). The items were grouped under the headings of a role model having "clinical competencies, teaching skills, professional skills, and personal behavior". The participants were asked to rank the above categories according to importance on a five-point Likert scale. Continuous data was represented by means and standard deviation, and categorical data was represented by frequencies and proportion. Test of significance was applied taking p value of less than 0.05 significant between the ranked values of attributes by basic and clinical sciences.

This was followed by eighteen face to face interviews including six medical teachers from each of three medical colleges. Out of given six, three teachers of basic sciences and similarly three of them from clinical side were included. Following guidelines of a qualitative study, the numbers of interviews were done till the data saturation was observed.

To maintain the quality of the study the interviews were recorded on two different devices. The recordings were transcribed completely so as to not miss any information. Credibility of the study was ensured by doing member checking, intercoder reliability and using technique of reframing questions. Transferability, dependability and conformability were done for quality assurance of the study.

## Results

Total of one hundred participants were invited for filling the questionnaire but seventy-five returned giving a response rate of 75%. Descriptive statistics were used to analyze demographic variables and determine the influencing attributes of a medical teacher as perceived by the participants. Mean score was calculated for each of the categories (clinical competencies, teaching skills, professional skills, and personal behavior) Table 1 shows participants' characteristics in the study with equal representation from Basic and Clinical Sciences.

**Table 1:** Participants Characteristics

Characteristic	Frequency	Percentage
<b>Gender</b>		
Male	41	55%
Female	34	45%
<b>Age group</b>		
25-40	30	40%
40-60	45	60%
<b>Specialty</b>		
Basic sciences	38	50.6%
Clinical sciences	37	49.4%

Table 2 below shows Rank wise distribution of influencing attributes of a role model.

**Table 2:** Rank Wise Distribution of Influencing Attributes of a Role Model

Characteristic	Mean	Standard Deviation
Individual behaviour	4.47	0.51
Professionalism	4.42	0.56
Clinical Competence	4.16	0.51
Teaching Skills	3.97	0.61

Test of significance was applied to the two groups of specialties (basic and clinical sciences for their ranking of influencing attributes of role modeling. Table 3 depicts that the basic sciences teachers ranked 'individual behaviour' the topmost influencing attribute for role modeling whereas the clinical sciences teacher ranked 'Professionalism' as the top most attribute. There was no statistical significance between the ranking of clinical and basic sciences for the individual behaviour, professionalism and teaching skills. However, significant difference was found between the ranking of basic and clinical sciences teachers for clinical competence as an attribute of role modeling ( $p=0.444$ ) (Table 3)

**Table 3:** Rank Wise Distribution of Influencing Attributes of a Role Model.

Characteristic	Basic Sciences (n=37)	Clinical Sciences (n=38)	p-value
Individual behaviour	4.51 ± 0.49	4.43 ± 0.53	0.4997
Professionalism	4.38 ± 0.57	4.46 ± 0.552	0.5388
Clinical Competence	4.04 ± 0.51	4.28 ± 0.506	0.0444
Teaching Skills	4.01 ± 0.62	3.93 ± 0.59	0.5687

During phase two, eighteen participants (six from each college) participated in individual, face to face interviews. Table 4 depicts the interviewees' academic profile in terms of experience, post graduate qualification, academic post and years since graduation.

**Table 4:** Teacher's Academic Profile Undergoing Individual Interviews.

Characteristic	Frequency (n=18)
<b>Teaching experience</b>	
1 to 3 years	13
3 to 5 years	5
<b>Post graduate Qualification</b>	
FCPS	11
Others	7
<b>Year of graduation</b>	
After 2008	14
Before 2008	4
<b>Post held</b>	
Assistant Professors	16
Senior Lecturers	2

Data was analyzed for Themes emerging out of the listed codes were:

**Table 5:** List of Themes and Subthemes Found in the

THEMES	SUBTHEMES	No. of Codes (161)
<b>Positive Role Models and their Influences</b>	Effective Teacher	69
	Good Clinical Competencies	
	Good Personal Qualities	
	Good Role Models Influences	
<b>Negative Role Models and their Influences</b>	Imitation of Good Role Models	92
	Ineffective Teacher	
	Incompetent Clinician	
	Poor Personal Qualities	
	Negative Role Model's Influences	
	Imitation of poor Role Models	
Choice Influenced by Intrinsic Factors	92	
Choice Influenced by Extrinsic Factors		
Choice Influenced by Role Models		

- 1) Positive Role models and their Influences
- 2) Negative Role models and their Influences

Interviewees had range of impressions about their role models; few of the quotations are as followed. Participant H recalled being bullied in the ward rounds for most of his training Participant H said: *“It was so distressing to observe the unnecessary shouting of Professor X during the journal club as well as grandround”*.

Few of them very keenly explained about the lack of clinical expertise in their teachers. Participant K who in now working as Assistant Professor biochemistry narrated: *“I was so surprised to see simple cases like hernia repair and cholecystectomies ending up in serious complications, he was surely not up to the mark as a surgeon”*.

Unethical and no professional behaviours were intensely and accurately recalled; interestingly these teachers now categorically avoid all the bad and poor habits they observed in their role models.

Participant D said: *“we all wanted to talk to him and seek advice about our career planning but for some unknown reason he always kept a distance with all of us. Now recalling those, I sit with almost each of my residents and talk to them about most of their queries.”*

Keeping Pakistani culture in mind, it is quite predictable to see the lady doctors opting out for obstetrics as a future field. One good reason for that is that it is a high female populated department. Participant A said: *“not only me but my family also had the opinion right from the outset that I should go in obstetrics and gynecology. To be honest I was in fact at most ease during maternity duties of final year”*

Few participants were extremely focused regarding the monetary benefits of the specialty to be chosen.

## Discussion

A teacher in the role of role model has to end up in either a good or a bad example in his or her career. The educator should be very careful and well aware of various characteristics a poor or a good role model acquires. Talking about the good role models, the characteristics they were found to have were namely;

good at communications, better patient care and being excellent teachers.<sup>7</sup> Holding a title post or working in some high rated specialty was thought to be a positive attribute of a teacher but Wright reported against this argument in his research. He further concluded that even before the starting of clerkship some of the students had already made up their mind about their future.<sup>7</sup> Hence it is necessary for all stake holders to persuade the educators for excellence in teaching and training. Encouraging the better performing role models by awarding those certificates and other appreciating activities is also suggested. The educators by faculty development programs across the board must be made aware of their influence on trainees.<sup>8</sup>

The professional development of future physicians is influenced by positive role models. Passi in a famous study revealed that the process of role modeling is a three stage process, firstly observation, then comes reflection and in the end their is reinforcement.<sup>2</sup> Many of the participants experienced that in their current professional life, many of their teaching habits were exactly like their role models.

All the meaningful interactions between the teachers and students both on campus and off campus will in turn play a role in the student’s own behaviours. Even the smallest of habits are observed, retained and reproduced later in their own life.<sup>9</sup>

Negative or poor role models exhibited many bad traits, few of them noticed by majority of participants were, teachers exhibiting insufficient patient care, average teaching skills and unpleasant personal qualities. Reasons beyond individual capacity noted were very interesting. Pronounced hierarchies and deficiency in team building quality may represent poor role modeling.<sup>10</sup> It is therefore very important for medical institutions to reach out in finding these negative role models and the subsequently plan to correct the issue by taking necessary measures.

Students mistreatment should be strictly addressed in planning the training program and once found out must be settled by counseling as many of the discouraged students actually ended up leaving the medical profession.<sup>5</sup>

Gender discrimination was observed mostly by the female participants. Equal opportunities to learn



surgical procedures were not provided to few female doctors of this study. Few senior teachers had the habit of complaining about the whole system during the lectures and ward rounds which was surprising and discouraging.<sup>11</sup>

The most interesting finding while conducting the interviews was the positive role of teachers now in their personal life as a teacher, in response to the negative role models behaviours they experienced so that their current student don't go through the same trauma. Few international studies also concluded this positive impact of negative role models.<sup>3</sup>

Choice of specialty for a medical student is probably the most important decision and many of the participants chose a specialty in response to the majestic personality of a subject specialist at a very early stage of studies.<sup>4</sup>

The significance of involvement of all the stakeholders is highlighted time and again in relevant literature for the reason that sometimes it is merely the system which is making the teachers exhibit poor behaviours. One example of that is overworked teachers specially of the clinical specialty<sup>12</sup>

Poor role modeling pose is a big challenge for stakeholders, it is time to create a system which can reduce these examples. BEME guide 27 suggested involvement of all the stakeholders including the governmental institution who make policies so that an organizational broad based structure is made.<sup>2</sup>

## Conclusion

Twenty first century health professionals are trained to acquire knowledge along with skill and attitude but role of role models in development of their professional behaviours shall be accounted for. The huge impact of a teacher can be analyzed by finding out a huge number of student's imitation of their teachers. Positive role models will invariably produce positive behaviours whereas poor role models can have a lifelong impact on the behaviours of future doctors. Awareness activates like seminars, workshops regarding the positive and negative role model's traits shall be integral part of a medical college.

## Limitations of the Study

The study was done on teachers from MBBS programs only, teachers from allied health

professionals could be added in further studies. Credibility was done through member checking but was limited to triangulation of data from another source. Transferability was limited to one domain of medical education and in future more domains can be added.

**Ethical Approval:** Given

**Conflict of Interest:** The authors declare no conflict of interest

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