

Measuring empathy of medical students studying different curricula; a causal comparative study

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Abstract

Objective: To determine the difference in empathy level of undergraduate medical students studying two different curricula.

Methods: This cross-sectional study was conducted at Independent Medical College of Faisalabad and Islamic International Medical College of Islamabad, both in Pakistan, from July to September 2016. The two medical colleges had two different types of curriculum systems; the integrated modular system and the discipline-based curriculum. The Toronto empathy questionnaire was used to calculate empathy scores. The responses were scored between 0 and 64 by taking sum of all the 16 questions. T-test was used to compare the mean scores and empathy levels between the two groups. SPSS 20 was used for data analysis.

Results: Of the 160 students, there were 80(50%) belonging to each institute. In the integrated modular system, 44(55%) students were females, whereas in the discipline-based system 45(56%) students were males. Students enrolled in the integrated modular system had a higher mean empathy score than students in the discipline-based system (44.2 ± 6.59 versus 39.7 ± 6.54 , $p < 0.001$).

Conclusion: Interventions during the educational journey about empathy had positive influence on students' personalities and their future practices.

Keywords: Empathy, Undergraduate medical students, Educational intervention, Curriculum. (JPMA 67: 1238; 2017)

Introduction

Empathy is considered to be an essential component of medical education as it affects the relationship between doctors and patients.^{1,2} Patient participation which depends upon this mutual relationship plays a major role in accurate diagnosis and management,³ hence important for maintaining the standards and ensuring safety of both doctors and patients.^{3,4} Health outcomes are influenced mainly by the mutual understanding and trust between the doctors and patients.⁴ On the other hand, patient safety is becoming a major concern for medical education internationally.⁵ So, great emphasis is now being given to train and assess medical students in a way to enhance their empathetic nature.⁶

How to increase empathy in medical students is a question the accurate answer to which is still in debate. It is reported that interventions during educational journey enhance the empathy of the students and are very helpful for them in future professional life.² Conducting different workshops on communication skills and doctor-patient

relationship have a direct positive influence on the participants.^{7,8} Teaching students about humanity, ethics and professionalism has a significant positive effect on their future working practices.^{9,10} Previous studies have shown to increase the empathy level of students after attending workshops related to the subject.¹¹

The current study was planned to measure the effect of educational intervention on the empathy level of medical students in Pakistan and to determine the difference in empathy level of students coming from two different set-ups, one studying ethics and professionalism during their educational journey and others not having any such intervention during their educational period.

Subjects and Methods

This cross-sectional study was conducted at Independent Medical College (IMC), Faisalabad, and Islamic International Medical College (IIMC), Islamabad, both in Pakistan, from July to September 2016. The two medical colleges had two different types of curriculum systems, the integrated modular system and the discipline-based curriculum. Students were divided into two groups based on the institution they were enrolled in. Only those students who were in their final year were included. Students enrolled in the integrated system were being taught about different domains of empathy (cognition, communication, understanding and intention to help:

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World Health Organisation's (WHO) definition of empathy)¹² as a part of their curriculum. Students in the traditional discipline-based system had no such intervention formally present in their curriculum. Simple random sampling technique was used to take samples from both colleges to keep the sampling error minimum. To calculate the sample size, OpenEpi was used which is a valid and reliable tool for the mentioned purpose. Confidence limit was set at ± 5% which gave a sample size of 80 students from each college with 95% confidence interval (CI).

The Toronto Empathy Questionnaire (Supplement) is a previously tested and validated tool, utilised previously by studies to calculate empathy scores and was used after taking permission from the original authors.^{6,13} The questionnaire comprises 16 questions testing empathy (Appendix). The questionnaire was scored between 0 and 64 by taking sum of all the 16 questions according to the set marking criteria. For items 1, 3, 5, 6, 8, 9, 13, 16: never = 0; rarely = 1; sometimes = 2; often = 3; always = 4.

The items 2, 4, 7, 10, 11, 12, 14, 15 are reverse scored. The questionnaire was distributed to the students after approval from the ethics committees of both institutions. Further, items 1 and 4 check perception of others' emotions and stimulation of the same response in one self. Item 8 was about emotional comprehensions in others. Items 2, 7, 10, 12 and 15 address emotional state assessment and demonstration of behaviour with appropriate sensitivity. Sympathetic physiological arousal was checked by items 3,6,9 and 11 while items 5,14 and 16 checked altruism. Item 13 was about higher order

empathetic responses.

Data was analysed using SPSS 20. Student's t-test was used to calculate the difference between mean scores between the two groups. $P \leq 0.05$ was considered statistically significant.

Results

Of the 160 students, there were 80(50%) in each group. Students enrolled in the integrated modular system were predominantly females 44(55%), compared to the discipline-based system which predominantly consisted of males 45(56%). Students enrolled in the integrated modular system had a higher mean empathy score than students in the discipline-based system (44.2±6.59 versus 39.7±6.54). The significance was <0.001 with 0.9 standard error of mean, hence proving the positive impact of educational interventions on empathy of students in their training period (Table-1).

The mean score of perception of other responses and stimulation of the same response out of 8 was 5.3 for IIMC students while it was 4 for those of IMC. Comprehension

Table-1: Mean scores for Toronto empathy questionnaire.

	independent medical college	Islamic international medical college
Mean	39.6125	44.2375
N	80	80
Std. Deviation	6.53616	6.58584
Mode	39.4	44
Median	39.2	44.1

Appendix: Toronto empathy questionnaire.

	Never	Rarely	Sometimes	Often	Always
1. When someone else is feeling excited, I tend to get excited too	0	1	2	3	4
2. Other people's misfortunes do not disturb me a great deal *	0	1	2	3	4
3. It upsets me to see someone being treated disrespectfully	0	1	2	3	4
4. I remain unaffected when someone close to me is happy*	0	1	2	3	4
5. I enjoy making other people feel better	0	1	2	3	4
6. I have tender, concerned feelings for people less fortunate than me	0	1	2	3	4
7. When a friend starts to talk about his\her problems, I try to steer the conversation towards something else *	0	1	2	3	4
8. I can tell when others are sad even when they do not say anything	0	1	2	3	4
9. I find that I am "in tune" with other people's moods	0	1	2	3	4
10. I do not feel sympathy for people who cause their own serious illnesses *	0	1	2	3	4
11. I become irritated when someone cries *	0	1	2	3	4
12. I am not really interested in how other people feel*	0	1	2	3	4
13. I get a strong urge to help when I see someone who is upset	0	1	2	3	4
14. When I see someone being treated unfairly, I do not feel very much pity for them*	0	1	2	3	4
15. I find it silly for people to cry out of happiness *	0	1	2	3	4
16. When I see someone being taken advantage of, I feel kind of protective towards him\her	0	1	2	3	4

*Items in red text will be scored reverse, i.e. 0 = always, 1 = often, 2 = sometimes, 3 = rarely and 4 = always.

Table-2: Individual mean score along with standard deviations for different components of empathy.

Component:	IIMC	IMC
Perception of other responses and stimulation of same response	5.3±1.6	4±1.9
Comprehension of emotion	2.56±0.09	2±0.07
Assessment of emotional response and demonstration of appropriate behaviour with sensitivity	13.3±3.4	11±2.9
Sympathetic physiological arousal	11±2.56	9.7±3
Altruism	13±4	13±4
Higher order empathetic responses.	3±1	2±1

IIMC: Islamic International Medical College

IMC: Independent Medical College

SD: Standard deviation.

of emotions out of 4 was also found to be higher in students having integrated modular system, i.e. 2.65 versus 2. The mean score for the assessment of emotional response and demonstration of appropriate behaviour with sensitivity was 13.3±3.4 in case of IIMC and 11±2.9 in case of IMC. Sympathetic physiological arousal was also high in students studying professionalism and ethics (11±2.56 versus 9.7±3). Altruism was the only area which was equal for both. The mean score of higher empathetic response was 3±1 for students of IIMC while 2±1 for students of IMC (Table-2).

Discussion

Relationship between the doctors and the patients depends upon the mutual understanding, communication, cognition and intention of the doctor to help the patient physically, socially and mentally, which all comes under the umbrella of empathy.^{14,15} Strong relationship leads to active patient participation which plays a key role in management process, hence essential to maintain the standards of health care.⁴ To achieve this goal, it is greatly emphasised nowadays to train medical professionals in a way which will produce safe empathetic doctors, both for the patients and themselves.^{16,17}

In our study, the students from college with integrated modular curriculum getting formal training about ethics and professionalism showed greater level of empathy as compared to the students from college with traditional discipline-based curriculum who were not receiving such intervention during their educational training period. Increase in empathy level have also been reported in response to educational interventions in medical professionals in various previous studies.^{7,18,19}

Empathetic response of teachers towards children have shown to improve the behaviour and attitude of students.²⁰ Similarly, empathetic behaviour of medical professionals have shown to increase the trust of patients on their health teams and results in better management

of patients.^{21,22} Students have also reported that improvement in professional development during their clinical practice have occurred after receiving training about professional relationships and stress management.²³ Similar findings were noted in experimental studies showing increase in empathy level of groups receiving intervention as compared to controls group without any intervention.^{24,25}

Current curriculum in Pakistan has not been able to promote empathy in medical students during their educational period and to produce doctors who are capable of building a strong relationship with their patients.^{26,27} Studies have shown average level of empathy among the medical students of Pakistan rather a decline in empathy as the students go through the whole programme.²⁸ But colleges having educational interventions regarding professionalism have shown to prevent the decline in empathetic attitudes of students in those institutes.²⁹ Proper educational interventions and instructional designs in medical curriculum are needed to improve the professional attitudes of our future doctors and strengthen doctor-patient relationship for better health care system.³⁰

It is the need of time to re-evaluate our medical curriculum across the country, and incorporate ethics, professionalism and humanities as an essential component of the medical training programme to overcome the shortcomings in our health care system and meet the international requirements.^{17,31} It is also required to improve the health of our community and raise the standards of health care in Pakistan.³²

Conclusion

Doctor-patient relationship is vital for better patient care. Empathetic behaviour of doctor helps the patients to build trust on doctors which leads to improvement in health of the community. Training medical students during their educational life about empathy using

different interventions, such as communication skill workshops, seminars on ethics and professionalism and course modifications, results in increased level of empathy in students and greatly influences their future practices in a positive way. There is a need to reshape medical curriculum all over Pakistan in the areas of ethics, professionalism and empathy to bring about a change in professional personalities of our future doctors according to the global needs and standards.

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