

MEDICAL STUDENTS' PERCEPTIONS OF EDUCATIONAL ENVIRONMENT IN REMOTE AND URBAN AREA MEDICAL COLLEGES OF PUNJAB, PAKISTAN

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ABSTRACT

BACKGROUND The quality of educational environment has been identified as crucial for effective learning. Learning environment may vary from one institute to another.

AIM This study was designed to compare the educational environments of two medical colleges, namely: Shaikh Zayed Medical College, located in a remote area of Punjab and Services Institute of Medical Sciences, established in a metropolitan city.

METHODS It was a cross sectional descriptive study conducted in February 2014, using DREEM questionnaire. All students from the final year MBBS class of the two medical colleges (n=220) were included in the study.

RESULTS An overall DREEM score was 90.4 in the remote area college, as compared with 113 in the metropolitan city college. Four out of the five subscales of DREEM showed a significant difference between the two medical colleges and female students perceived the environment more negatively at the remote area.

CONCLUSION The study highlighted major gaps in the educational environment of the two medical colleges. Negative perceptions of students from remote area college emphasize the need for careful planning before the opening of medical colleges in such areas. The Pakistan medical and Dental Council should develop standards of undergraduate medical education and implement them strictly in all medical institutes.

KEY WORDS Academic perception, Educational environment, DREEM (Dundee Ready Educational Environment Measure), Pakistan

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INTRODUCTION

The success of a medical institution depends upon the environment in the classroom, departments, hostels and other facilities associated with the institution. These domains make up the total educational environment.¹ Understanding the educational environment can help develop effective strategies for appropriate changes. The students' perceptions

of the educational environment have a significant impact on their behaviour, academic progress and sense of well-being.² A motivating educational environment is expected to foster deep learning among students, eventually leading to good medical practice in physicians. Learning outcomes can be achieved once demotivating elements, such as poor role modelling, information overload, stress and teacher centred

training etc., have been identified and eliminated.^{3,4} In recent years there has been an increasing interest in the role of learning environment in undergraduate medical education.

There has been a rapid increase in the number of medical colleges in both private and public sectors in the last few decades in Pakistan. However, these medical colleges may not provide the educational environment necessary for success. The government may not be able to provide an equitable and standard educational environment comparable to the medical colleges located in urban areas. Often, inadequate planning and premature opening of colleges in the remote areas, results in poor quality of teaching and learning due to lack of proper infrastruc-

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ture, and qualified staff vital for their functioning.

The present study was conducted to measure the educational environment in a remote area medical college with one located in a cosmopolitan city, with presumably better facilities. Shaikh Zayed Medical College (SZMC), located in the city of Rahim Yar Khan (RYK), Pakistan was chosen as a remote area medical college. RYK is a small city located at the southern end of Punjab, with population of approximately 330,000 in 2007. The government of Punjab has established the college in 2003 and it was approved by the Pakistan Medical and Dental College (PM&DC) in 2005, though the building is still under construction at the time of conducting this study in 2014. The second college is the Services Institute of Medical Sciences, which is located in a metropolitan city (Lahore) with relatively well developed facilities and adequate faculty prefer to work in Lahore due to better civic facilities. The government has provided state of the art facilities in this medical college.

The aim of this study was to compare the perceptions of medical students about the educational environment of a less developed remote area medical college with a medical college located in a well-developed metropolitan city, using Dundee Ready Educational Environment Measurement (DREEM) questionnaire and to identify any gender differences in perceptions of educational environment in the two colleges.

METHODS

It was a quantitative cross-sectional descriptive survey, conducted in February 2014, after taking ethics approval from the Ethics Review Board of Khyber Medical University in January 2014. Data were collected from a total of 220 final-year medical students in both colleges.

The DREEM questionnaire was administered to the students at the end of scheduled lecture to maximize response rate (91.3%).

Before administration of the questionnaire, students were thoroughly briefed about the purpose of the study and data collection process. They were advised to maintain anonymity and confidentiality of their responses.

Furthermore it was explained that this data will be used for research, quality assurance and improvement purposes.

English version of the questionnaire was used to avoid any bias due to translation of instrument. All students were well versed in English language.

The 50 item DREEM questionnaire was developed by an international Delphi panel of professional health educationists.

The inventory was validated by over 1,000 students world-wide and is now being used widely in order to measure and 'diagnose' undergraduate educational environment in the health professions institutes.⁴ It has been translated in several languages and applied to several undergraduate courses worldwide.⁵⁻¹⁰

These items are distributed into the following five sub-scales: students' perceptions of learning (SPL); Students' perceptions of course teachers (SPT); Students' academic self perceptions (SASP); Students' perceptions of atmosphere (SPA); and Students' social self perception (SSSP).

Statistical analysis was carried out through SPSS version 19. The analysis of the students' perception of individual items was based on mean scores and the frequency distribution of responses. For the review of frequency distribution of responses, a score of 3 and 4 (agree and strongly agree) was aggregated to indicate positive perception and 0 and 1 (strongly disagree and disagree) were aggregated to indicate negative perception.

The non-parametric Mann Whitney U Test was used to determine the significance of differences (proportion of frequencies) for individual items ($p < 0.05$).

RESULTS

Students' Perceptions of Educational Environment at remote area medical college (SZMC)

Out of a total of 110 students selected from final year, 100 (response rate = 90.9%) filled the questionnaire, including 52 females (52%) and 48 males (48%). The overall DREEM score for SZMC was 90.4 (45.2%), Results show that the students perceived teaching negatively and the faculty needed more training regarding teaching and other academic activities. Regarding academic self perception many negative aspects were observed. Students also perceived that the 'place was not nice'.

Table 1 provides the overall score and individual subscale scores for SZMC. Average score for SPL subscale was 21.8 (45.4%). Mean score for males in the subscale was 23.8, while for females, it was 19.8 ($p < 0.05$). Average score for SPT was 20.4 (46.3%), while the total mean score for males was 21.1 and for females, 19.9 ($P < 0.05$). The mean score for SASP subscale was 13.5 (42.2%), with males score as 13.8 and females as 13.2 ($P = \text{Not Significant}$). The total mean score of SPA subscale was 22.6 (47.1%), while total mean score for males was 23.4 and females 21.8 ($p < 0.05$). SSSP subscale had a mean score of 12.3 (43.3%), while the mean score for males was 12.1 and for females was 12.4 ($p = \text{Not Significant}$).

The total scores for all subscales between males and females was 94.4 and 87.5 respectively ($p < 0.05$). The overall perception of female students in almost all the subscales was more negative as compared to males. Table 2 provides the distribution of scores for males and females, at SZMC.

Following four items scored least on the list of 50 items, by females, indicating serious deficiencies in the system.

- I am confident about my passing this year (Score = 1.0).
- I have learnt a lot about empathy in my profession (Score = 1.3)

TABLE 1: STUDENTS' OVERALL PERCEPTIONS OF EDUCATIONAL ENVIRONMENT AT SZMC

DREEM and its sub-scales	Number of items	Maximum score	Mean Score	Percentage	Interpretation
SPL	12	48	21.8	45.3	Teaching is viewed negatively
SPT	11	44	20.4	46.3	In need of some retraining
SASP	8	32	13.5	42.1	Many negative aspects
SPA	12	48	22.6	47.1	Many issues which need change
SSSP	7	28	12.3	43.8	Not a nice place
All items	50	200	90.4	45.2	Plenty of problems

Key: SPL: Students' perceptions of learning SPT: Students' perceptions of teaching
 SASP: Students' academic self perceptions SPA: Students' perceptions of atmosphere
 SSSP: Students' social self perceptions

TABLE 2: DISTRIBUTION OF MALE AND FEMALE RESPONSES ABOUT EDUCATIONAL ENVIRONMENT AT SZMC

Domains	Male	Female	P Value	SZMC Mean
SPL	23.8	19.8	<0.05	21.8
SPT	21.1	19.9	<0.05	20.4
SASP	13.8	13.2	NS	13.5
SPA	23.4	21.8	<0.05	22.6
SSSP	12.1	12.4	NS	12.3
Total	94.4	87.5	<0.05	90.4

- The atmosphere is relaxed during seminars / tutorials (Score = 1.3)
 - My social life is good (Score = 1.3)
- Students' Perceptions of Educational Environment at a Metropolitan City medical college (SIMS)**

Out of a total of 110 students, 100 (90.9%) filled the questionnaire. There were 43% males and 57% in the sample. SPL subscale had average score of 26.2 (54.6%). Mean score for males in the subscale was 26.5, while for females, it was 25.9 (p = NS). SPT subscale had mean score of 24.2 (55.0%), while the total mean score for males was 25.2 and for females, 23.5 (p =NS). SASP subscale

had a mean score 15.1 (47.1%) with mean score for males as 17.5 and for females as 13.8 (p=NS). SPA subscale had mean score of 28.7, while mean scores for males and females were 28.4 and 28.9 respectively (p=NS). SSSP subscale had a total mean score of 19.1 (68.0%), while the mean score for males was 18.8 and for females was 19.2 (p=NS). Table 3 provides the distribution of overall score and individual subscale scores for SIMS. As evident from the Table, Students' academic self perception (SASP) got the least score indicating 'many negative aspects' in the system.

Individual item scores and the subscale scores were compared for a difference between the perceptions of males and females at SIMS. The total scores of all subscales between males and females was 115.0 and 110.8 respectively (p=NS). The overall perception of females was however more negative than the perceptions of males about educational environment. Following items were perceived more negatively by female students (p<0.05)

- The course teachers have good communication skills with patience.
- The course teachers are good at providing feedback to the students.
- The last year work has been a good preparation for this year work.

The following item was perceived more negatively by male students (p<0.05)

- The students irritate the course teacher.

Table 4 provides the distribution of male and female responses for the DREEM scores at SIMS. There

TABLE 3: STUDENTS' OVERALL PERCEPTIONS OF EDUCATIONAL ENVIRONMENT AT SIMS

DREEM and its subscales	Number of items	Maximum score	Mean Score	Percentage	Interpretation
SPL	12	48	26.2	54.5	A more positive perception
SPT	11	44	24.2	55.0	Moving in right direction
SASP	8	32	15.1	47.1	Many negative aspects
SPA	12	48	28.7	59.9	A more positive attitude
SSSP	7	28	19.1	68.0	Not too bad
All items	50	200	113.0	56.6	More positive than negative

TABLE 4: DISTRIBUTION OF MALE AND FEMALE RESPONSES ABOUT EDUCATIONAL ENVIRONMENT AT SIMS

Domains	Male	Female	P Value	SZMC Mean
SPL	26.5	25.9	NS	26.2
SPT	25.2	23.5	NS	24.2
SASP	17.5	13.8	<0.05	15.1
SPA	28.4	28.9	NS	28.7
SSSP	18.8	19.0	NS	19.1
Total	115.0	110.8	NS	113.0

was no significant difference between the scores of males and females for four subscales, the only significant difference was seen in subscale for students' academic self perception (SASP).

It is interesting to note that when similar differences are compared between SZMC and SIMS (Table 2 vs Table 4), most of the differences between males score and female scores at SZMC are significantly different than most of score between males and females at SIMS. This indicates that the male and female students at SZMC rate the educational environment very differently than male and female students at SIMS.

The objective of the study was to compare the educational environment between the remote area medical colleges (SZMC) and the cosmopolitan area medical college (SIMS). Table 5 shows the distribution of responses between the two medical colleges. As evident from the Table, there was a significant difference in the educational environment of the two colleges.

Table 6 shows the distribution of total mean scores for each subscale

for the two colleges and the interpretation of scores. As evident from the Table, overall educational environment was relatively better at SIMS compared to SZMC. Although improvements were required at SIMS as well, educational environment at SZMC showed some major flaws in almost all subscales that need to be addressed seriously.

DISCUSSION

The overall mean DREEM score of SZMC was 90.4 (45.2%) and the overall score of SIMS was 113 (56.6%). There is no universal agreement on what is an acceptable score based on DREEM but low scores of 102, 103, 100, and even 90 and higher scores of 130 and 132 have been reported by different investigators from different countries.^{12,13,15}

Educational Environment at remote area medical college (SZMC)

The total and mean score of all the subscales of SZMC was low (ranged between 42.1 and 47.1), revealing plenty of problems needing serious attention. The teaching was viewed negatively. The teachers needed retraining and the students'

perceptions of academics and atmosphere were negative. Students perceived that it was 'not a nice place' regarding learning environment. In this study, SZMC students scored 31 items (62%) less than two out of a total of 50 items. Less than two score in individual item might be due to our content overload, teachers' attitude towards students, academic elitism, stressful and threatening environment, and too much unstructured formative assessment system. Further research is needed on these issues. The SZMC Medical College does not have a purpose-built building and the old district hospital is converted to a tertiary care center for teaching purpose. The Medical college does not have purpose built accommodation for students. The curriculum is traditional, disciplined based with minimal integration. The teaching faculty is mainly from Central Punjab which do not like to be posted in this remote area. Hence they find every excuse to be absent from their duties. Moreover the weather is extremely hot and the social activities are restricted due to unstable law and order in the city. These factors contribute to creating negative impact on students' perceptions especially among females who feel more home sick in this remote harsh environment.

Educational Environment at metropolitan area medical college (SIMS)

In this study, SIMS scored 113 (56.5%). Although the score is comparable with the studies done in different medical institutions of Punjab⁹ but is lower when compared

TABLE 5: COMPARISON OF SUBSCALE SCORES BETWEEN THE TWO MEDICAL COLLEGES

DREEM subscales	Number of items	Max score	SZMC		SIMS		P Value
			Mean	%	Mean	%	
SPL	12	48	21.8	45.3	26.2	54.5	<0.05
SPT	11	44	20.4	46.3	24.2	55.0	<0.05
SASP	8	32	13.5	42.1	15.1	47.1	NS
SPA	12	48	22.6	47.1	28.7	59.7	<0.05
SSSP	7	28	12.3	43.8	19.1	68.0	<0.05
All items	50	200	90.4	45.2	113	56.6	<0.05

TABLE 6: DISTRIBUTION OF SCORES IN DIFFERENT SUBCALES AND INTERPRETATION OF SCORES FOR THE TWO HOSPITALS

DREEM and its subscales	SZMC Mean Score	Interpretation	SIMS Mean Score	Interpretation
All items	90.4	Plenty of problems	113	More positive than negative
SPL	21.8	Teaching is viewed negatively	26.2	A more positive perception
SPT	20.4	In need of some retraining	24.2	Moving in the right direction
SASP	13.5	Many negative aspects	15.1	Many negative aspects
SPA	22.6	There are many issues need to change	28.7	A more positive attitude
SSSP	12.3	Not a nice place	19.1	Not too bad

TABLE 7: KEY ATTRIBUTES OF THE TWO MEDICAL COLLEGES

Attribute	SZMC	SIMS
College established	2005	2002
Building	No purpose built building	Has purpose built building
Hostels	No purpose built hostels	Has purpose built hostels
Hospital	Old building	Old building/ new blocks constructed
Faculty	Senior Faculty mostly transferred from central Punjab	The college has surplus teaching faculty
Library	One library both for undergraduates and post graduates.	Two libraries well equipped with modern facilities.
External environment	The amusement and entertainment opportunities are limited and are mostly within the college campus.	Plenty of amusement and entertainment opportunities in a metropolitan city
Law & order	The students are strictly prohibited regarding their movements without permission. The sense of insecurity limits their activities within the college premises	Relatively better than Rahim Yar Khan
Opportunities for educational activities	Limited, mainly due to lack of experienced faculty, limited library resources and internet resources and equipment,	Comparatively much better resources in terms of faculty, library, internet, equipment etc.
Funds supply from Punjab Government	Limited	Better than SZMC due to its central location

internationally.⁵⁻⁷ For SIMS, total mean score for different subscales ranged between 47.1% and 68.1%, indicating better educational environment than SZMC. In this study, SIMS students rated only nine items (18%) as less than two, indicating far less environmental problems than SZMC at micro level. There was more positive perception in general. Regarding the subscales, academic self perception was viewed negatively.

The SIMS medical college building

is purpose built and the college has its own hostels for students within the college campus. The college library, play areas and better social environment provide ample opportunities for co-curricular activities. Although the curriculum is traditional but there is enough teaching faculty both at basic and clinical health sciences. Table 7 provides the differences in the two medical colleges under study that may have attributed to their high or low scoring.

The study shows that the DREEM inventory can be used to identify strengths and weaknesses of educational environment. Items scoring less than or equal to two might be due to traditional curriculum with content overload, authoritative attitude of teachers with the students, stressful environment and an unstructured assessment system. Moreover ineffective hidden curriculum also explains low scoring among the students regarding perceptions of atmosphere and social self perception. The study demonstrates the challenges of maintaining a positive and equitable teaching and learning environment at all medical colleges either located at metropolitan or remote areas. It also underlines the need for a careful ongoing evaluation of the learning environment. An atmosphere of cooperation and coordination among medical colleges located at different sites is required to execute timely remedial actions. Educational leaders and policy makers will have to come up with innovative ways to improve educational environment to educational environment in limited resource, remote area colleges.

The study was conducted at only two medical colleges due to time and financial constraints. Results should be generalized to other colleges cautiously as each college has its own unique educational environment. The subscales in the educational environment may differ considerably.

CONCLUSION

The results of the study indicate that there was a significant difference between the educational environments of the two colleges, with the metropolitan college environment significantly better than the remote area medical college. The study provides useful information to planners to improve the environment in remote area medical colleges. A number of factors have been identified through the study that should be considered while planning the commissioning of colleges in remote ar-

eas. There are a few factors such as the minimum infrastructure, faculty, academic facilities, support services etc. that cannot be negotiated in the opening of a new medical institute. Both, political and educational leadership must realize that new health institutes in the public and private sectors cannot operate without the minimum defined facilities. Careful planning is required before the opening of such colleges.

The study provides useful information about the perceptions of male and female students in the two medical colleges. Since there is a vast majority of female students in the medical colleges now a days, the college educational environment should be conducive to female students in an already deprived social environment of a medical college in a remote area. SZMC educational environment exposes many negative aspects regarding learning environment especially for females. Minimum educational standards can be developed for institutions either located in metropolitan or remote cities to ensure a healthy, positive and equitable environment. Pakistan Medical and Dental Council, as the prime regulatory body, needs to re-define its role in the monitoring and evaluation of the educational environment of the institutes.

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The study was part of MSA Masters in Health Professions Education. IA supervised the dissertation, and was involved in every part of the analysis, idea's development, and write-up. TG contributed significantly to the research that resulted in the submitted manuscript.

CONFLICT OF INTEREST

Authors declare no conflict of interest.

ETHICS APPROVAL

The approval/permission was obtained from Khyber Medical University Research and Ethics Board.

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