

ORIGINAL ARTICLE

**QUALITY OF EDUCATIONAL ENVIRONMENT AT WAH MEDICAL COLLEGE: ASSESSMENT BY USING DUNDEE READY EDUCATIONAL ENVIRONMENT MEASURE**

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**Background:** Educational environment not only has an impact on the students during the academic years but has its reflections throughout their medical career. The Dundee Ready Educational Environment Measure (DREEM) is an internationally accepted useful tool to analyse undergraduate educational environments in the health professionals. The purpose of this study was to assess how students, across all the five years in a private medical college, perceive their educational environment. **Methods:** It was a cross sectional study, which used the DREEM inventory at Wah Medical College over the course of 6 months (January–June 2015). All 500 students were included in the study. The fifty items DREEM inventory, having the maximum score of two hundred indicating ideal educational environment was used for data collection. **Results:** The questionnaire was completed by 400 undergraduate medical students (response rate 80%). The overall DREEM score was 122.63/200 (61.3%), indicating that the perception of the learning environment was more positive than negative. Among the highest scoring categories were students' participation in classes, relaxed atmosphere and confidence in passing the annual exams. However, many areas requiring improvement were also brought to attention. **Conclusion:** Overall, the student's perception of their learning environment at Wah Medical College was found to be positive. This study did bring to light some areas that could be improved upon. This should enable the faculty to adopt changes in their teaching methods to make the learning process more productive and enjoyable for future students.

**Keywords:** Medical students; Perception; Educational environment; DREEM inventory

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**INTRODUCTION**

As the demand for healthcare professionals is constantly increasing throughout the world, more and more emphasis is being put on the assessment of the institutes that train these future doctors. In a field so erudite, it is vital that students, who undertake the responsibility of becoming a doctor, are able to function and thrive academically at their educational institute. For this, a sound learning environment is crucial. An educational environment includes everything that happens within the classroom, department, faculty and institution both physically and psychologically.<sup>1</sup> A positive environment leads to academic achievements while a negative one hinders the progress of students. By assessing these environments, the success or failure of an institute can be determined. Earlier studies have proved that the educational environment has a significant impact on a student's behaviour, academic performance and overall motivation.<sup>2</sup>

Because of this role determining the student's perception of their educational environment is critical. In this way, strengths and weaknesses of the institute are identified, and modifications can be made in order to enhance the learning experience

within the environment. Efforts to reform these environments are being made all over the world in hopes of increasing students productivity, without giving up the quality of learning.<sup>3</sup> This is only plausible with constant assessment and the perception of the students. Recent studies have also shown the association between a malfunctioning learning environment and the poor educational outcomes of the students.<sup>4</sup> It is, therefore, important to take the input of students into great consideration while planning a curriculum. The DREEM questionnaire is commonly used to determine students' perception.

The Dundee Ready Educational Environment Measure (DREEM) is an internationally accepted useful tool to analyse undergraduate educational environments in the health professionals. It may highlight the collective areas of concern of the majority of students that might be inadvertently neglected by the educators. DREEM has been used in a number of surveys to find out the strengths and weaknesses of the educational institutions. Most of the studies showed positive environment though not ideal. Institutes that harbour a positive learning environment produce good doctors, while other institutes that provide demotivating elements need to identify and eliminate these problems before any

detriment to the students.<sup>5</sup> The importance of a good environment is demonstrated by a student's performance throughout the program. It not only has an impact on a student during the academic life but also during their medical career. Until recently, determining student perspectives was not a priority for most medical institutes, probably owing to the hectic and demanding routines of both students and faculty. In the past few years, more and more studies have been conducted in order to improve the educational environment in terms of curriculum, teaching methods and any other factors affecting a student's performance. This study will allow us to perceive how our fellow students perceive the educational environment at Wah Medical College. It will also demonstrate areas that can be improved for better learning experience.

## MATERIAL AND METHODS

It was a cross sectional study carried out at Wah Medical College from January to June 2015, wherein all the medical students of Wah Medical College were included. The questionnaires were distributed among all the undergraduate medical students after explaining the purpose and process of data collection. The 50 item DREEM inventory was used with each item scoring 0–4 on a 5-point scale having a maximum score of 200 which indicates ideal educational environment. The DREEM inventory consisted of five sub-scales as under:

- Student's perception of learning (SPL) includes 12 questions with maximum score of 48
- Student's Perception of course organizers includes 11 questions, with maximum score of 44
- Student's Academic Self Perception (SAP) includes 8 questions with maximum score of 32
- Student's perception of Atmosphere includes 12 questions with maximum score of 48
- Student's Social Self Perception (SSP) includes 7 questions with maximum score of 28

The guidelines for the interpretation of scores are as follows:

- Individual DREEM-item scores (>3=Strong areas, 2–3= areas that could be improved, <2=areas that need particular attention)
- Students perception of learning (0–12 very poor, 13–24 Teacher is viewed negatively, 25–36 A more positive approach, 37–48 Teaching highly thought of)
- Students Perception of course organizers (0–11 Abysmal, 12–22 In need of some retaining, 23–33 Moving in right direction, 34–44 Model teachers)
- Student's Academic Self Perception (0–9 Feeling of total failure, 10–16 Many negative

aspects, 17–24 Feeling more on positive side, 25–32 Confident)

- Student's perception of Atmosphere (0–12 A horrible environment, 13–24 Many issues which need changing, 25–36 A more positive attitude, 37–48 A good feeling overall)
- Student's Social Self Perception (0–7 Miserable, 8–14 Not a nice place, 15–21 Not too bad, 22–28 Very good socially)
- Total DREEM scores (0–50 Very Poor, 51–100 Plenty of problem, 101–150 More positive than negative, 151–200 Excellent)

Results were summed and statistically analysed using SPSS 19.0. Mean and standard deviation of all the variables were calculated and presented in the form of graphs and tables.

## RESULTS

The research was conducted at Wah Medical College, Wah Cantt. The questionnaires were distributed among all 500 students of the college. A total of 400 students completed the questionnaire; among them 202 (50.5%) were males and 198 (49.5%) were females (Y1=85, Y2=80, Y3=71, Y4=80, Y5=84) giving an overall response rate of 80%. The total average DREEM score was found to be 122.63±20.51; which reflects more positive than negative perception. Results of the student's perception of five sub-scales of the educational environment were as follows:

- Student's perception of learning 29.084±6.02; A more positive perception.
- Student's perception of course organizers 24.74±4.93; Moving in the right direction.
- Student's academic self-perception 20.9±4.88; Feeling more on positive side
- Student's perception of atmosphere 29.84±6.62; A more positive attitude.
- Student's social self-perception 17.43±4.07; Not too bad.

Following items scored maximum

- I am encouraged to participate during teaching sessions 2.94±1.0
- The atmosphere is relaxed during lectures 2.91±1.03
- I am confident about passing this year 2.91±0.94

## DISCUSSION

DREEM is a useful tool for evaluating educational environments because it is highly reliable in this profession and culturally non-specific.<sup>1,2,4</sup>

The study was conducted with the objective to gauge students' perception of this institute's educational environment. Wah Medical College represents a competitive private sector medical college with

students from privileged backgrounds. The study endeavoured to involve the participation of each student. The response rate in this study was 80%.

The total DREEM score of  $122.63 \pm 20.51$  (61.3%) showed that the students think their educational environment to be more positive than negative. The total DREEM score for boys was  $122.2 \pm 19.89$  and in the case of girls it was  $123.06 \pm 21.15$ . Similar studies conducted in our country and Malaysia showed the same results, i.e., more positive than negative,<sup>1,6,8,9</sup> accounting for the fact that all of them are teacher-centred institutes. Other studies with slightly lower scores but similar results were from KSA, India and Pakistan respectively.<sup>2,3,3</sup> Studies conducted in UK, KSA and Pakistan had higher scores with the students regarding their environment as excellent.<sup>4,5,11,12</sup> It is imperative to note that the high scoring institutes had student-centred curriculum<sup>4,5</sup> while all teacher-centred curricula report almost similar results<sup>1-3,6,7</sup>. Hence, we assume from the results that there is definite room for reforms by carrying out innovations in the curriculum and making it student centred.

Total score for students' perception of learning was  $29.840 \pm 6.02$ , which showed a more positive perception. Our results are comparable to a research conducted at AMC, Rawalpindi ( $28.07 \pm 6.58$ ).<sup>10</sup> It is higher than researches from India<sup>3</sup> and the medical college at Lyari, Karachi.<sup>8</sup> Lowest scores reported from this domain is for item 25 and 48 pertaining to factual and teacher centred learning. Factual learning is probably driven by pattern of formative and summative assessments that students encounter. A problem based evaluation might be the key to doing away with both factual and teacher centred learning. Our research scored higher for all items except item 25 (1.64) that scored less than the research at Taibah University of Saudi Arabia<sup>2</sup> and item 48 that scored less than that of the medical college of Lyari, Karachi.<sup>8</sup> Item 1 (2.94), item 7 (2.860) and item 47 (2.71) scored highest from this domain in our research which depicted active participation by students and co-operative behaviour of teachers in the direction of giving confidence to students and supporting them.

Looking at the demands of medical profession, teachers stimulate the students to focus on long term learning. Only one research has item 1 and item 16 scoring more than our result that is from Medical College at Lyari, Karachi.<sup>8</sup>

Total score for student's perception of course organizers was  $24.74 \pm 4.93$  comparable to research at AMC, Rawalpindi ( $26.14 \pm 6.5$ ).<sup>10</sup> Lowest score was reported for item 9 ( $1.47 \pm 1.01$ ). It is a negative question. Low scores were showing authoritarian teachers, poor feedback skills, angry

and impatient teachers who ridicule and lack of constructive criticism. It is important to remind teachers that show respect for students is critical to learning process. All other items show higher scores as compared to other researches.<sup>2,10</sup> Highest scores were reported for item 2 and item 40 showing that the teachers are well educated and well experienced in their field and good at providing feedback to their students. Ability to give timely and specific feedback is an important skill that sets the right path of learning. Our research scored less for item 29 than the research at Taibah University, Saudi Arabia<sup>2</sup>. Overall scores showed that students are satisfied with course organizers.

Total score from students' academic self-perception was  $20.94 \pm 4.88$  which is more on positive side as compared to that from UK and KSA.<sup>5,7</sup> No item in this domain scored less than 2 points. The item that scored lowest in this domain was (item 27) *\*(I am able to memorize all I need)\**. Most studies had reported low scores in this domain i.e. Leed's University of UK<sup>7</sup> and Umm-Al-Qura University of KSA<sup>5</sup>. The highest score (2.91) was for item 10 *\*(I am confident about passing this year)\**, higher than that of India and KSA,<sup>3,5</sup> which showed students' satisfaction about their preparation and ability to cope with workload. Academic self-perception is related to the ability to cope with the academic workload, more studies<sup>6,7</sup> had reported low scores in this domain, suggesting curriculum overload to be a universal problem and needs revision in methodological terms and also by judicious reconsideration. Items 41,31,5 scored high 2.64, 2.63 and 2.60 respectively which showed that student's strategies for previous years were helpful and will work for them now as well. They had learned empathy in this profession and their problem-solving skills were being well prepared here. These scores were higher compared to College of Delhi, India and Umm-Al-Qura University, KSA.<sup>3,5</sup>

The total score for students' perception of atmosphere was  $29.82 \pm 6.62$  which shows a more positive attitude of the students to the institute's atmosphere. Item that scored less in this domain was item 17 *\*(cheating is a problem in this course)\** compared to Umm-Al-Qura University of KSA.<sup>5</sup> Other low scoring items were *\*the atmosphere is relaxed during seminars/tutorials, \*(I find the experience disappointing)\**, compared to researches of UK and India<sup>7,3</sup> which shows lack of interest for seminars/tutorials among the students and their disappointment with the experience. The highest scoring item in this domain is item 23, *\*(the atmosphere is relaxed during lectures)\** which depicts that the students find the atmosphere comfortable during lectures and they gain as much as they should. The score is higher compared to that

of Karachi and KSA.<sup>4,2</sup> Other items scored nearly same as the other universities.

The total score for students' social self-perception was  $17.43 \pm 4.07$  which is not too bad for the overall scores of the domains in our research. The lowest scoring item *\*(I am too tired to enjoy this course)\**, indicated high level of stress which hampered their tendency to enjoy the course. The scores of three items (15, 28, and 46) were higher compared to researches in UK and India,<sup>3,7</sup> which showed that the students believed their social lives were stable with regards to friends and company. They were also satisfied about their accommodation.

## CONCLUSION

This study revealed that most of the student from Wah Medical College, for all five years perceived their learning environment as positive. While many students thrive academically, there is always room for improvement. This study identified major defects and areas that need to be improved upon in order to facilitate student learning. Remedial measures need to be implemented in low scoring areas to ensure a sound learning environment for medical students. This will help improve academic performance as well as personal growth, two of the most important aspects of becoming successful doctors.

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## AUTHORS' CONTRIBUTION

RM: Conception and design. AM, AZ, AA, AA, AB: Collection and assembly of data. RM, AA: Analysis and interpretation of the data. RM: Drafting of the article. MR: Critical revision of the article for important intellectual content. RM, AA, AB: Literature search. RM, AA: Proof reading: Robina.

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