

Students' perception about the educational environment in a physiotherapy college in India using DREEM Questionnaire

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Abstract

The objective of this study was to know the perception of students about overall educational environment in a Physiotherapy College using Dundee Ready education environmental measure questionnaire so that a corrective action can be taken if needed.

A Cross sectional study was undertaken wherein 79 students of all professional years participated voluntarily. DREEM has 50 items, each rated from 0-4 (Likert scale: 0, strongly disagree to 4, strongly agree). It measures five domains: students' perceptions of learning; perceptions of teachers; academic self-perception; perceptions of the atmosphere; and social self-perception.

Overall score of the questionnaire was 138 which is interpreted as 'more positive than negative'. The three highest rated items were knowledgeable teachers, relevance of teaching to clinical practice, and confidence about passing; whereas the problematic areas were a poor support system for stressed students, poor feedback by the teachers. Five domains in the DREEM indicated that students' perception of learning was positive, and their perceptions of the teachers were that they were "moving in the right direction". Their academic self-perception & their perception of atmosphere was positive. The students' social self-perception was "not too bad".

The perception of students put the institute in the highest but one category. This indicates that there is a good standard maintained by the institute but there is a definite scope of improvement. Strengths & weaknesses identified through the analysis will help the course organisers to take definitive steps in the direction of improvement.

Keywords: Perception, Educational, Learning environment, Students.

Introduction

The educational environment is defined as everything that happens within the classroom, department, faculty or university.⁽¹⁾ It is also defined as the interactive network of forces (i.e. physical, social, and intellectual), conditions and external stimuli within the teaching and learning activities which challenge, surround, engulf, and play on the students' learning outcomes.⁽²⁾ The educational environment is not restricted to student-teacher interaction, teaching and learning activities, but also includes having good facilities and physical structures provided by the institution. The learning environment is not only a significant determinant of curriculum but is as well as salient index of the behavior of both the students and teachers.⁽³⁾ A favorable environment has a positive and significant impact on students' learning, academic progress and wellbeing⁴. The learning environment has a significant impact on students' achievements and learning outcomes. It is one of the most important factors determining the success of an educational curriculum.⁽⁵⁾ Eliciting students' perception of the learning environment is a useful basis for modifying it and improving its quality, and provides students with a voice through which they can share their experience in the school⁶. Evaluation of the educational environment comprehensively assesses what is happening and how things are in the school.⁽⁴⁾ An effective training programme is that which provides students with a variety of learning experiences and that which involves them

during the real learning process.⁽⁷⁾ Respect for the learners and their needs, encouragement of participation can all result to a positive learning experience.⁽⁸⁾ A variety of methodologies have been used to explore and quantify the presence of somewhat ethereal features of an educational environment, including qualitative, quantitative,⁽¹⁰⁻¹⁴⁾ and mixed-method.^(15,16) Many instruments are available to measure educational environments in undergraduate professional healthcare education, each of which has its own strengths and weaknesses in terms of design, validity and reliability. Arguably, the most widely used instrument is the Dundee Ready Educational Environment Measure (DREEM).⁽¹⁷⁾

The Dundee Ready Educational Environment Measure (DREEM) is a culturally non-specific, generic instrument; it was developed to analyze undergraduate educational environments in the health professions.⁽¹⁰⁾ DREEM has been found to be highly reliable in a variety of settings; with its help, institutions can identify shortcomings and formulate changes in curriculum.⁽¹⁸⁾ The DREEM inventory is an instrument that measures the perception of an educational environment and has been widely used in different educational contexts. It has been shown to have good psychometric properties with evidence based on test content (content validity) and internal structure (construct validity),⁽¹⁹⁾ and has consistently displayed good reliability in diverse settings.⁽²⁰⁾

In spite of its wide use of DREEM all over the world among various health professionals, very few studies have been done in Physiotherapy institutes and none is reported from India. Applying the DREEM to our institute students would be invaluable to explore various aspects. Firstly it would provide an insightful snapshot of the way our students view their course and enable the institution to address any key issues. This would have a positive impact on the training being imparted to the students. Secondly, it will help to explore areas of strength and weakness in the educational environment as perceived by undergraduate physiotherapy students and thirdly to investigate these in relation to the respondents' demographic characteristics.

Methodology

Study design: A qualitative methodology was used to investigate the students' perceptions of their learning environment. The study sought to explore individual student experiences, which are considered valuable for improving understanding of aspects of the experience of the education environment. The study could be described as phenomenological in nature. The completion of the DREEM inventory was undertaken on a voluntary basis, and none of the information collected was identifiable, thereby maintaining data anonymity. All the data was handled and stored in accordance with the tenets of the Declaration of Helsinki.

Setting: The study was conducted at PDVVPF's College of Physiotherapy, Ahmednagar Maharashtra, India, a Physiotherapy institute offering a four and a half year, full-time undergraduate programme that culminates in a professional qualification and a Bachelor degree in physiotherapy.

Participants: 79 undergraduate Physiotherapy students participated voluntarily in the study. A notice in this regard was displayed on the institute notice board & a fixed time was announced for filling up the questionnaire. The DREEM inventory was administered during this time to ensure high response rate. Anonymity was maintained during filling up the questionnaire.

Research Instrument: The DREEM is a 50-statement, closed-ended questionnaire developed to assess the learning environment of educational establishments. Each of the 50 items falls into 1 of 5 categories: students' perceptions of learning; students' perceptions of teachers; students' academic self-perceptions; students' perceptions of atmosphere; and students' social self-perceptions. Each item is scored by respondents from 4 to 0 with a 5-point Likert response as follows: 4= strongly agree; 3 = agree; 2 = unsure; 1= disagree and 0 = strongly disagree. It has a maximum score of 200. Item scores count towards an overall environment score as well as one of five subscales or domains (abbreviations and maximum subscale scores are in parenthesis):

Students' Perceptions of Learning (SPL, 48), Students' Perceptions of Teaching (SPT, 44), Students' Academic Self-perception (SAP, 32), Students' Perception of Atmosphere (SPA, 48) and Students' Social Self-perception (SSP, 28).⁽¹⁰⁾

Data Analysis: The responses of completed questionnaires were manually entered into a Microsoft Excel data sheet and exported to the Statistical Package for the Social Sciences (SPSS) version 20.00 (IBM Corporation, Armonk, NY) for descriptive statistical analysis. As nine items (4, 8, 9, 17, 25, 35, 39, 48 and 50) from the instrument are negatively stated, corrections were made, thus resulting in higher scores designating disagreement with these items. Overall, subscale and individual scores were analysed if all items were completed by the respondents. The criterion variables were the perceptions of the educational environment as measured by the overall, subscale and individual scores of the DREEM inventory.

Results

79 students in the age range of 18 yrs to 21 yrs participated in the study. The mean age was 19.78±2.98 yrs with 58 females and 14 males. There were 22 (15 females & 2 males) final year students, 28 (22 females & 6 males) third year students and 27 (21 females & 6 males) second year students.

Students' perception of their learning environment: The overall mean score for students' perception of their learning environment was 137.8±21.06 which is interpreted as "more positive than negative". Overall subscale analysis score for the component Student Perception of Learning (SPoL) was 33.9 which is considered to be positive, Student Perception of Teachers (SPoT) was 30.6 which is interpreted as Model course organisers. Subscale of Students' Academic Self-perception (SASP) scored 23.2 which indicate a feeling more on positive side, subscale of Student's perception of Atmosphere (SPoA) scored 32.3 indicating a more positive attitude, and a subscale of students social self-perception had a score of 17.8 which means not too bad. It can be noted that, in each case, students' scores are at the middle of the scoring band. Thus, the Physiotherapy students perceived their learning environment as positive although there is room for improvement in some areas.

Table 1

Subgroup	Total	Interpretation
Student Perception of learning SPoL	31.7±3.21	Teaching highly thought of
Students perception of teachers SPoT	32.5±4.15	Model course organisers
Students' academic self-perception SASP	23.7±2.34	Feeling more on positive side
Students' perception of atmosphere SPoA	32.3±3.25	A more positive attitude
Students' Social Self - perception SSSP	17.3±1.24	Not too bad
Total	138.7±13.26	More positive than negative

Item wise analysis: The mean scores for each individual DREEM items are shown in Table 2. These analyses allowed us to identify specific strengths and weakness within the learning environment. There was only one item which score less than 1 i.e. item no 29 -the teachers are good at providing feedback. Item no 3, 5, 8, 28, 32, 34, 43 scored in between 2 & 2.1. There were no items in student perception of learning which scored less than 2.5 whereas there were 2 items (item no 8 & 32) in the subscale of student perception of teachers which scored less than 2.5. Subscale Student academic self-perception had only one item (item no 5), subscale Student perception of atmosphere SPoA had two items (item no 34, 43) and subscale Students social self-perception SSSP had only one item (item no 3 & 28). Rest 41 items scored between 2.5 & 3.5.

Table 2: Student perception of learning

Q. No.	Item	Total
1	I am encouraged to participate during teaching sessions.	2.6±0.8
7	The teaching is often stimulating.	2.6±0.7
13	The teaching is student centred	2.6±0.9
16	The teaching helps to develop my competence	2.9±1.2
20	The teaching is well focused	3.2±2.1
22	The teaching helps to develop my confidence	2.8±0.9
24	The teaching time is put to good use	2.6±1.5
25	The teaching over emphasizes factual learning*	2.8±1.3
38	I am clear about the learning objectives of the course	2.8±1.9
44	The teaching encourages me to be an active learner	2.7±1.1
47	Long term learning is emphasized over short term learning	2.7±0.9
48	The teaching is too teacher centred*	3.4±1.4
	Total	32.8±1.2

Table 3: Students perception of teachers spot

Q. No.	Item	Total
2	The teachers are knowledgeable	3.2±1.2
6	The teachers espouse(support) a patient centred approach to consulting	2.9±0.9
8	The teachers ridicule the students*	2.2±1.2
9	The teachers are authoritarian *	2.6±1.2
18	The teachers have good communication skills with patients	3.1±1.2
29	The teachers are good at providing feedback to registrars	1.9±1.2
32	The teachers provide constructive criticism here	2.4±1.2
37	The teachers give clear examples	2.8±1.2
39	The teachers get angry in teaching sessions*	3.3±1.2
40	The teachers are well prepared for their teaching sessions	3.1±1.2
50	The students irritate the course organisers *	3.1±1.2
	Total	30.6±1.2

Table 4: Students' academic self-perception SASP

Q. No.	Item	Total
5	Learning strategies which worked for me before continue to work for me now	2.4±0.8
10	I am confident about my passing this year	3.2±0.4
21	I feel I am being well prepared for my profession	2.8+ 0.9
26	Last years work has been a good preparation for this years work	2.8±1.1
27	I am able to memorise all I need	2.8±0.8
31	I have learnt a lot about empathy in my profession	3.1±0.6
41	My problem solving skills are being well developed here.	3.2±0.4
45	Much of what I have to learn seems relevant to a career in healthcare.	3.2±0.2
	Total	24.1±5.8

Table 5: Students' perception of atmosphere SPOA

Q. No.	Item	Total
11	The atmosphere is relaxed during consultation (Clinical) teaching	3.1±0.6
12	This course is well timetabled	2.9±0.9
17	Cheating is a problem on this course*	3.1±0.9
23	The atmosphere is relaxed during lectures	2.9±0.7
30	There are opportunities for me to develop interpersonal skills	2.9±0.5
33	I feel comfortable in teaching sessions socially	3.0±0.3
34	The atmosphere is relaxed during seminars / tutorials	2.3±0.9

35	I find the experience disappointing	2.8±0.9
36	I am able to concentrate well	2.5±0.8
42	The enjoyment outweighs the stress of the course	2.8±1.1
43	The atmosphere motivates me as a learner	2.1±0.4
49	I feel able to ask the questions I want	2.5±0.9
	Total	33.1±7.2

Table 6: Students' social self-perception SSSP

Q. No.	Item	Total
3	There is a good support system for students who get stressed	2.0±0.6
4	I am too tired to enjoy the course*	2.6±0.5
14	I am rarely bored on this course	2.5±0.9
15	I have good friends on this course	2.9±0.7
19	My social life is good	2.9±0.9
28	I seldom feel lonely	2.2±0.6
46	My accommodation is pleasant	2.6±0.5
	Total	17.9±3.9

Discussion

This study used DREEM questionnaire to explore the learning environment as perceived by the students. The overall DREEM mean score was 137.8±23.07, indicating that the perceptions of the physiotherapy students of their learning environment were "more positive than negative". Other studies reported in the literature has reported similar scores on DREEM questionnaire for example in Nigeria Physiotherapy students 131/200(Adesola C. Odole, 2014); 150/200 in Sweden (Per J. Palmgren et al 2014); medical and allied health sciences schools 133/200 and 125/200 in Malaysia (Lai et al, 2009; Zamzuri, Azli, Roff, & McAleer, 2004); 119/200, 114/200, and 117/200 in India (Abraham et al, 2008; Mayya & Roff, 2004); and 139/200 in the United Kingdom (Varma et al, 2005) . The present study included all the students in the clinical phase of their study like most of these previous studies although some included other students at different phases with varied sample sizes. The score of 137 in the present study reflects satisfaction and might indicate a student-centred curriculum.

Student perception of learning (SPOL): The total mean score of subscale students perception of learning SPoL is 33.4 which indicates a more positive approach. The items such as well focused teaching and negative item teaching being teacher centric scored better than other items (3.2 and 3.4 respectively). Higher scores for focused teaching are probably due to monthly teaching

pan being prepared by the institute which is followed to the maximum extent. The teaching is perceived to be student centric by the students which is probably due to the fact that students are prepared to present seminars during the regular course of time. During one academic session each student needs to present at least one seminar. The items that scored less were 'teaching time was put to good use' & 'I am encouraged to participate in teaching sessions'. These are the problem areas which needs attention & compliance.

Student perception of teachers (SPOT): The total mean score of this subscale is 30.6 which indicates that the course organisers are 'moving in right direction'. This indicates that students are satisfied about the conduct of routine teaching whether in the form of didactic teaching or clinical teaching. The items that contributed to this better score are 'teachers are knowledgeable' and 'teachers are well prepared for the teaching sessions' (3.2 & 3.1). This implies that the quality of teachers is the contributing factor for their satisfaction. Similar findings are reported in the previous studies

A knowledgeable, motivated, skilled and approachable teacher is likely to increase learners' motivation, which in turn leads to better engagement in learning and improved.⁽²²⁾ Hence teachers are an asset to the institute. The items that scored less in this subscale were the 'teachers are good at providing feedback' which is infact the lowest score in the questionnaire itself (1.9). This suggests an area of improvement & teachers need to learn the art of giving feedback. This can be done by incorporating a module on giving feedback in the regular faculty development programmes.

Students' academic self-perception (SASP): The total score of this subscale is 23.2 which is interpreted as feeling more on positive side. Academic self-perception is related to the ability to cope with the academic workload; most studies have reported low scores in this domain.⁽⁵⁾ In the present study 'I am confident about my passing this year' is the item which scored maximum (3.4) followed by 'Much of what I have to learn seems relevant to a career in health care' (3.1). Confidence was more or less in all three years whereas relevance of teaching is more in 4th year students. This is probably because the 4th year students are posted in clinical side for comparatively more time which allows them to apply what is learnt in theory on real patients. However the item that scored least is 'Learning strategies which worked for me before continue to work for me now' (2.4). This warrants attention, as helping the students to modify their strategies may further increase their confidence of passing. The strategies may change with the different professional years as the pattern of curriculum is a bit different in each year. In the 2nd year it is more practical oriented whereas 3rd and 4th year is more of clinical oriented, where dealing with patients is

a primary area. Students need to understand this change & teachers can be the best guide for them to explain it.

Students' perception of atmosphere (SPOA): The total score on this subscale is 32.3 which indicate 'a more positive attitude'. In the initial years it is more of protected environment where mistakes can be accepted but clinical side mistakes are unpardonable. The clinical environment is rich with real-world exposure but tends to degenerate into a disorganized, stressful experience because patient overload ensures that teachers are kept busy; priority is given to the patients first and students later.⁽¹⁸⁾ This may have an effect on the scores on various items by different professional year students. However, the students in present study there was not much difference in their perception across all professional years. This may be contributed to near peer mentoring programme in which there is a very good communication between senior & junior students. The highest score item is 'The atmosphere is relaxed during consultation (Clinical) teaching' in which senior & junior students need to work as a team under the supervision of a teacher. In spite of this the item 'The atmosphere motivates me as a learner' has scored least (2.1). An attempt will be made to find out the factors behind this & appropriate action be taken.

Students' social self-perception (SSSP): Total score in this subscale is 17.8 which indicate 'not too bad'. A social learning environment equips students with the tools necessary to collaborate with teachers and peers and participate in activities both inside the classroom and beyond the walls of the school.⁽¹⁹⁾ In the present study, the item 'There is a good support system for students who get stressed' got a least score (2.0). It suggests that the institute needs to develop a strategy which will help the students to relieve their stress. Students guidance unit is available in the institute but needs to function more efficiently. Items related to social life & good friends on the course(2.9) got maximum score. It indicates that students have optimum time to enjoy their social life & are not overburdened due to the curricular or institutional liabilities.

The educational environment is a complex mix of multiple factors, specific to each institution. This DREEM analysis has helped us to identify the strengths and weaknesses of our institute. Strengths of our institute lies in the knowledgeable teachers, student centric teaching, well focused teaching, students confidence, better atmosphere, preparation of students for profession. However, weak areas such as developing a good support system for students under stress, providing constructive feedback to the students needs due attention.

To conclude, the overall perception of students about the institute is more positive than negative & with some more efforts the learning environment can be made more positive. Since a favorable learning environment

is linked to improved student learning; further research will be taken up to correlate perceptions of the environment with academic success.

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