Evaluating Educational Environments of Medical Programme: A Qualitative study

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Abstract: *Educational environment refers to the climate of where the learning happens and plays an important role in student's academic achievement, satisfaction and success. The evaluation of educational environment is important to identify strengths and weaknesses of educational programme. Objective of the study was to explore the perceptions of educational environment among preclinical and clinical year medical students of University Tunku Abdul Rahman (UTAR). The qualitative study was conducted among medical students of UTAR. Focus group discussion was conducted to explore the strength and weakness of educational environment. The data were analyzed by content analysis. The interview protocol was developed based on the Dundee Ready Environmental evaluation Measure (DREEM) and weak areas of the results of quantitative study were explored further. For the domain, student's perceptions of learning, both preclinical and clinical years students enjoyed their learning as they were encouraged to participate in class and teaching helped to develop their competence. However, preclinical year students preferred more discussion than factual learning during lecture classes. For the domain, student's perceptions of teaching, both clinical and preclinical year students perceived that the teachers are knowledgeable, and well prepared for their classes. But clinical year students perceived that that the clinical teachers were more authoritarian compare to preclinical year students and they experienced that the teachers angry in the classes because of the student's presentation and question and answer sessions. For the domain, student's academic self-perceptions, both preclinical and clinical year student were satisfied with their academic learning activities but the preclinical year students were less confident about passing the exam compare to clinical year students because of a lot of new things to study. They also thought that they had to memorize more of the subject than understanding because of the subjects are more factual learning. Regarding the domain, students' perception of atmosphere, both preclinical and clinical year student felt comfortable that the atmosphere was motivative and relaxed but clinical students prefer the timetable to be well prepared and more welcoming clinical environment. For the domain, students' social self-perception, both preclinical and clinical year students believed that they had good friends in class and satisfied with their social life. The concern for clinical year students was that they all busy with clinical work and less time to study and could not enjoy the course compare to the preclinical years. Both preclinical and clinical year students thought that the student support system is not effective enough for them to solve the problem. In conclusion it was recommended that the weak area of educational environment reported by students should be monitored closely and maintain an educational environment that would satisfy for all MBBS students.*

Keywords: Educational environment, Evaluation, DREEM, medical students, Malaysia
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1. Introduction

Educational environment refers to the climate of institution as the whole range of components and activities within which learning happens. This includes infrastructure of the campus, learning opportunities, teacher's skills and attitudes, their interaction with peers, teaching and learning methods, learning resources, monitoring and evaluation. Learning environment is a major determinant of developing motivation in students for their effective learning. Learning environment plays an important role in student's academic achievement, satisfaction and success. (Pai et al., 2014) In educational institution, it is important to evaluate the program for quality assurance for medical education accreditation (ACGME 2010b; LCME 2010), for funding sources, and for educators to gain useful knowledge about their program and sustain ongoing program development. (Goldie et al., 2006). The evaluation of learning environment of medical students has been carried out to identify strengths and weaknesses of learning environment, to monitor changes at times of curriculum reform, to compare learning environments across teaching sites and to compare staff and students' perceptions (Edgren et al, 2010; Miles et al., 2009).

It is important to monitor the student's perceptions of educational environment as part of curriculum evaluation especially if there is any modification or introduction of new curriculum or program and it will help to identify areas with deficiencies so that measures can be taken to improve them if required. The evaluation of curriculum plays important role to create effective educational environment that will enhance the prospects of success of the students. (Al-Naggar et al., 2014) The information from the results of evaluation of educational program are useful to make a decision about the value or worth of an educational program (Cook et al., 2010) and by provide evidence to support the need for implementation of effective evaluation tools for the MBBS program in UTAR.

2. Literature Review

- **Educational environment**

Educational environment is defined as the social context, psychological and pedagogical which can affect learning, achievement and attitudes of the students. Educational environment and features that are in it played a major role in improving learning in schools and is identified as major determinants of student learning. Educational environment capable of stimulating students to engage in the learning process and be able to influence the behaviour of students as well as to assist in the development of their skills or cognitive perception (Amirul et al., 2013). The learning environments have influence on student learning, including their engagement in what is being taught, their motivation to learn, and their sense of well-being, belonging, and personal safety. (Glossary of educational reform, 2014) Educational environment has been shown to directly affect students' performance and an excellent environment is reflective of a quality curriculum. (Audin et al., 2003) which influences on how, why and what students learn which is crucial in the success of the curriculum.

The term educational environment expresses that learning is dependent on various environmental factors, which are created to various degrees by external factors. A learning environment is made up of an arrangement of teaching strategies and methods, learning materials, and media (Mandl et al., 2001). A well planned and well-designed curriculum includes aims, objectives, and assessments that are aligned with teaching methods to build learners' experience. Moreover, the learning environment represents the current temporal, spatial, and social learning situation and also includes the relevant cultural context. The basis

for concrete measures to create learning environments provides a fundamental concept for teaching and learning. To maximize educational environment, it need to fulfil basic need of infra structure such as classrooms to have basic needs of room temperature, comfort of seating, etc which can affect concentration and motivation of learners. Teachers play an important role in controlling the learning environment in meaningful manner. The use of effective instructional design would create effective teaching and learning sessions, and the respect for the learners to their needs and encouragement of participation would lead to a positive learning experience. (Hutchison et al., 2003)

- **Evaluation of Educational environment**

The process of educational program evaluation can be defined as systematic collection and analysis of information related to the design, implementation, and outcomes of a program, for the purpose of monitoring and improving the quality and effectiveness of the program. (ACGME 2010a) The program evaluation is importance for quality assurance, funding for innovation, educators to gain useful knowledge about the program and sustain ongoing program development. (Goldie et al., 2006) It is important to choose appropriate evaluation model, measurement tools and strategies based on the objectives of the evaluation and educational theory that applied for the evaluation program (Scho¨nrock-Adema et al., 2012).

- **Theoretical framework of the study**

The educational environment is experienced by learners from different demographic characters such as age, gender and academic years and based on their demographic background, their underlying motivation and their social interaction also could be different. For example, learners from preclinical years experienced basic science medical curriculum taught by non-clinical lecturers conducted mainly at university campus with high facilities while clinical students exposed to clinical subjects taught by clinical lecturer conducted at various learning environments such as, hospitals, clinic, and rehabilitation centre.

To evaluate the student's perception of educational environment, two learning theories were applied in constructing theoretical framework of study, self-determination theory by Ryan and Deci and Vygotsky's social development theory by Lev Vygotsky.

According to Self Determination Theory by Deci and Ryan (Ryan & Deci, 2008), the students' motivation is effected by their learning environments in which students with positive perception on learning environment promote internal motivation which will be further motivated to self-determined lifelong learners, while students with negative perception on learning environment will have negative effect on their motivation which can effect on becoming self-determine life-long learner. Vygotsky theory focus on the social interactions of learners with tutor or peers and the theory emphasized the profound influence of social contexts in the process of cognitive development. for example, one of the domains, evaluation students' perception of learning determines the student's motivation as well as social interaction related with learning for example "i am encouraged to participate in the class". the evaluation of students' perceptions of teachers reflects the extent that the teachers encourage the student's ability solving the problem independently according to vygotsky theory. the evaluation of students' academic self-perceptions related with their competence and autonomy, human universal psychological needs, which are the foundation of self-determination theory. the evaluation of students' perception of atmosphere determines the environment which influence their critical thinking (vygotsky) as well as their motivation (self-determination theory). evaluation of students' social self-perception determines the student motivation which can be

explained as relatedness of self-determination theory. by evaluating all the important areas of educational environment played an important role to create effective educational environment that will enhance the prospects of the students to become self-determine lifelong learners. the learning theories applied in this study are self-determination theory and Vygotsky's social development theory.to evaluate an educational environment, it is important to choose appropriate evaluation model, measurement tools, strategies based on the objectives of the evaluation and educational theory applied for the evaluation program A literature review is a search and evaluation of the available literature in your given topic area. It documents the state of the art with respect to the topic you are writing about.

3. Methodology

This was a cross sectional qualitative study. among preclinical years and clinical years students to get in-depth qualitative information and perceptions of medical students regarding their educational environment. According to UTAR medical curriculum, year 1 and year 2 were considered to be as preclinical years, and from year 3 to year 5 were clinical years. The medical curriculum of UTAR was an integrated curriculum, and medical program was started in year 2010. The interview protocol was developed based on the results of quantitative data conducted to all medical students which was one month before the qualitative study. Dundee Ready Environmental evaluation Measure (DREEM) was used as tool to conduct the study and the interview protocol for discussion were based on five domains of DREEM inventory such as Domains 1: Student's perceptions of learning, Domains 2: Student's perceptions of teacher, Domains 3: Student's academic perceptions, Domains 4: Student's perceptions of atmospheres and Domains 5: Student's social self-perception. Among 50 items of DREEM inventory the selected items were included based on the perception scores of quantitative study. (Al-Naggar et al., 2014). Based on the objectives, there were four groups of FGD were identified, two groups from preclinical years (year 1 and year 2 students) and other two groups from clinical years (year 3,4,5). The participants students were selected by simple random selection, explained about the study and informed consents were taken. Each discussion group consists of 8-10 students, total 38 students were participated in the study.

The data obtained from FGD were transcribed and crosschecked. The data were coded, cleansed and then analysed. The interviews were analysed by using content analysis. Initially, interview transcripts were read for emergent themes, which were then coded. Care was taken to ensure the codes accurately captured the respondent's meaning. The codes in each interview were then compared with those in each other interview to create broader categories that linked codes across interviews. Care was taken to ensure that these broader categories did not distort the respondent's meanings.

The ethical approval has been taken from the Scientific and Ethical Review committee of UTAR.

3. Discussion and Conclusion

Focus Group Discussion sessions were conducted among preclinical years and clinical years students to get in-depth qualitative information and perceptions of medical students regarding their educational environment.

- **Perception of educational environments of preclinical year students**

Regarding the domain, **student perception of learning**, preclinical years students perceived that they enjoyed their classes as they were encouraged to participate in the class and the teaching is well focussed, student centres and helps them to develop the competence. However, they have concerned regarding the lecture classes had over-emphasized factual learning and less discussion time. To solve this issue, the students recommended to have recorded lecture session, to listen again the parts which they missed to understand during the class. For the domain of **student perception of teaching**, the preclinical year students stated that he teachers are knowledgeable, well prepared for their classes and provide feedback to students. They haven't had any issue like authoritarian teacher or teachers get angry in class. For the domain, **student academic self-perception,** the preclinical year students stated that they had good academic self-perception in term of developing skills required for competence. But they had a concern about lengthy lecture classes and they had to memorized most of the subjects for understanding. For the domain, **student perception of atmosphere**, the preclinical year students enjoyed their lecture classes as the atmosphere is motivating, relaxed as they can ask questions any time or participate in discussion freely.

For the domain, **student perception of social life**, all the preclinical year students had good friends and good social life not only with students from same faculty, but also with the students from other faculties who are studying in the same campus.

- **Perception of educational environments of clinical year students**

Regarding the domain, **student perception of learning**, clinical years students stated that their clinical teaching learning session were well focussed, student centres and helps them to develop required competence of clinical skills. They had concerned regarding the last minute changes in timetable and extra classes were useful but sometime difficult to concentrate because of too many classes in a day.

For the domain of **student perception of teaching**, the clinical year students agreed that he clinical teachers and hospital consultants were knowledgeable, well prepared for their classes and provide feedback to students. But the clinical year students encountered, the teachers angry to the students. This may be the common problem for clinical years students as the expectations of clinical teachers on the clinical year students may be higher because they were seniors students who will be house officers sooner but in real experience, the students could not make their clinical teachers proud and their perceptions tends to be negative. Similar to this study, in a study by Dunne, 2006, the students perceived that teachers were too authoritarian. The researcher explained that it may be a reflection of the 'older type' of senior teacher who taught by experience rather than by direction. The author recommended conducting teachers refresher course covering the concepts of adult learning such as small group teaching, bedside teaching and giving feedback. (Dunne, McAleer & Roff, 2006). For the domain, **student academic self-perception**, the clinical year students stated that they had good academic self-perception in term of developing clinical skills required for competence. They were confident about passing the exam and excited to sit for the exam especially for the final year students. For the domain, **student perception of atmosphere**, the clinical year students enjoyed their clinical teaching classes as the atmosphere is motivating, relaxed as they can ask questions any time or participate in discussion freely. For the domain, **student perception of social life**, all the clinical year students had good friends in their classes, but concerned about the social life. As for clinical year students, the clinical teaching campus is 20 kilometer away from main campus

and the facilities of clinical campus is limited compare to main campus. The clinical year students concerned about the social life staying away from main campus. It was recommended that the facilities at clinical teaching centres should be promoted.

- **Comparison of perception of educational environments of preclinical year students**

For the domain, student's perceptions of learning, both preclinical and clinical years students enjoyed their learning as they were encouraged to participate in class and teaching helped to develop their competence. However, preclinical year students preferred more discussion than factual learning during lecture classes. For the domain, student's perceptions of teaching, both clinical and preclinical year students perceived that the teachers are knowledgeable, and well prepared for their classes. But clinical year students perceived that that the clinical teachers were more authoritarian compare to preclinical year students and they experienced that the teachers angry in the classes because of the student's presentation and question and answer sessions. For the domain, student's academic self-perceptions, both preclinical and clinical year student were satisfied with their academic learning activities but the preclinical year students were less confident about passing the exam compare to clinical year students because of a lot of new things to study. They also thought that they had to memorize more of the subject than understanding because of the subjects are more factual learning. The clinical years students had more confidence to pass the exam compare with pre-clinical years students, as clinical years are more practical, work place based learning and more understanding of the medical subjects compare with junior pre-clinical years students. The result was similar in a study by Dunne, 2006. revealed preclinical years students had more positive perception compare with clinical years students regarding their learning which were related with career in biological science.

Regarding the domain, students' perception of atmosphere, both preclinical and clinical year student felt comfortable that the atmosphere was motivative and relaxed but clinical students prefer the timetable to be well prepared and more welcoming clinical environment. The result was similar to a study by Pale et al. 2015 that the timetable issue has been more problematic in clinical years. The results were also similar to Dunne, 2006 that clinical years students have more chance to ask the questions may be due to the small group teaching strategies in clinical years such as bedside teaching, case discussion and small group seminar classes compared with the large group lecture classes in preclinical years.

For the domain, students' social self-perception, both preclinical and clinical year students believed that they had good friends in class and satisfied with their social life. The concern for clinical year students was that they all busy with clinical work and less time to study and could not enjoy the course compare to the preclinical years. Both preclinical and clinical year students thought that the student support system is not effective enough for them to solve the problem. This result was similar to a study by Abraham, 2008 where by pre-clinical years had significant positive perception compared with clinical years students (Abraham et al., 2008). At UTAR Sungai Long campus, here were various social activities conducted almost every day by faculties and pre-clinical students have a chance to enjoy all the activities with friends from various faculties.The similar results had been which shown in studies conducted in United Kingdom, India and Pakistan (Dunne, McAleer & Roff, 2006; Abraham et al., 2008; Pale et al., 2015).

- **Conclusion**

Educational Environment affects student learning and development, and a poor educational environment can hinder the efforts of even the most valuable teachers. (Pamolo-Lopez et al.,

2018) The DREEM is a reliable and validated instrument which identifies problem areas in educational environment (Dunne, McAleer & Roff, 2006) and the use of the DREEM as a monitoring tool would permit timely interventions to remediate problematic educational environments.

According to the results from this study, the students perceived that the teaching helps them develop increases their self-confidence, their teachers were knowledgeable and well prepared for their classes. Students were very confident that they were going to pass their end-of year examinations and consider that a lot of what they were learning was highly relevant to their professional career. Additionally, the students reported positive attitudes regarding their friends and social life. Greater attention is required to improve the areas pointed out by the students. Additionally, it needs to improve the communication system for effective utilization of support unit at university to support for students suffering from stress and modify the timetable especially for clinical years to adapt them better to students' needs. The clinical year student perception of social self-perception should be monitored closely because clinical years' students are usually more preoccupied with a clinical attachment, case presentations, seminars, and workshops.

Study Implication

As the educational environment affects student motivation and achievement, it is important to get feedback from the students on how they are experiencing their learning environment. (Khan, 2019) This study provides information qualitatively about perceptions of the educational environment among medical students in private medical university and provides some guidance on what needs to be addressed in the curriculum. In addition, the information obtained from this study would be valuable feedback to review the teaching learning experiences and curriculum review process.

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