

Year 4 Bachelor Of Medicine And Bachelor Of Surgery (Mbbs) Students Perception On Anatomy Teaching Environment In University Of Cyberjaya

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Abstract

BACKGROUND: Anatomy is one of the most important subjects encountered by any medical students. Perception towards the teaching environment is important for the students and also teachers to know the weakness surrounding the subject's environment, so that changes and improvement can be made. Thus, this study aimed to evaluate medical students' perception on anatomy teaching environment during preclinical years in University of Cyberjaya.

METHODOLOGY: All 92 students of Year 4 Bachelor of Medicine and Bachelor of Surgery (MBBS) in University of Cyberjaya have been recruited as the subject for this study. A questionnaire entitled Anatomy Education Environment Measurement Inventory (AEEMI) consisting of six constructs was used and then interpreted based on the AEEMI interpretation guideline.

RESULTS: There are three positive areas which are the students' perception towards anatomy teachers and instructors (mean score of 4.28), the importance of anatomy knowledge (mean score of 4.08) and their effort in learning anatomy (mean score of 4.37). Two areas need improvement which are the students' intrinsic interest of learning anatomy (mean score of 3.74) and the anatomy learning process itself (mean score of 3.71). The histology practical facilities are the area of concern with a mean score of 2.73.

DISCUSSION: Positive areas should be maintained. Some areas need improvement while the area of concern need more attention so that changes can be made for a better anatomy learning environment in the university.

KEYWORDS: Anatomy Learning Environment; Students' Perception.

1.0 METHODOLOGY

1.1 Background

The study was conducted as a part of the Research and Evidence Based Medicine (REBM) course. It was done amongst Year 4 MBBS students 2019/2020 in University of Cyberjaya (UC). The university is a private university in Malaysia offering health related diploma, undergraduate and postgraduate programmes. One of the programmes offered is a five years undergraduate programme which is the MBBS programme.

The five years MBBS programme comprised two years of preclinical teaching (campus based) and three years of clinical teaching (hospital based). The 2 years of preclinical study covers basic medical sciences. It offers 20 introductory subjects: Anatomy, Behavioural Sciences, Physiology, Molecular Basis of Medicine Nutrition (MBMN), Pathology, Community and Health Exposure Training (CHET), Medical Microbiology and Immunology (MMI), Pharmacology, Cardiovascular System, Musculoskeletal System, Endocrinology, Haematology, Reproductive System, Nervous System, Gastrointestinal System, Respiratory System, Urinary System, Infectious Diseases, Public Health, and Disaster and Relief Medicine.

Learning content of anatomy subject can be categorized into the following modalities: (1) interactive lecture, (2) student-centred teaching and learning, (3) prosecuted specimens for surface and clinical anatomy, (4) histology imaging practical. The multimodal teaching has been implemented.

1.2 Participants

92 students which is the total number of MBBS Year 4 2019/2020 students who have completed the preclinical phase in 2018 were included in this study. None of the batch members were excluded. All participants provided written consent to participate in this study.

1.3 Procedure

The participants were gathered in a large lecture hall and questionnaires were distributed. The Anatomy Education Environment Inventory (AEEI) questionnaire by Hadie et al (2017) was used to evaluate students' perception on anatomy teaching environment during the preclinical years in University of Cyberjaya. It consists of 25 items. The participants were required to rate each item based on the following scale (1: strongly disagrees, 2: disagree, 3: not sure, 4: agree and 5: strongly agree).

Six constructs were assessed in the questionnaire, including:

- i. Students' perception of anatomy teachers and instructors (7 items)
- ii. Students' perception of the importance of anatomy knowledge (7 items)
- iii. Students' intrinsic interest of learning anatomy (3 items)
- iv. Students' perception of learning anatomy process (3 items)
- v. Students' effort on learning anatomy (4 items)
- vi. Students' histology practical facilities (2 items)

The mean score then will be interpreted based on the AEEMI interpretation guideline:

1 - 2.99 = Area of concern

3 - 3.99 = Needs Improvement

4 - 5 = Positive Area

2.0 STATISTICAL ANALYSIS

All the data were analysed using IBM SPSS Statistics 2.0 software to calculate the frequency, standard deviation and mean scores of each item.

3.0 RESULT

3.1 Demographics

The response rate was 100% where all 92 students of MBBS year 4 from University of Cyberjaya participated in this research study. The male and female distribution was 31.1% male and 68.9% female, respectively. The average age of the students was 23 years old. There was no demonstrable relationship between our results (students' perception) and the students' gender and age.

3.2 Perception

Anatomy teachers are	Score						Total, n(%)	Mean (SD)	Mean Score
	0, n(%)	1, n(%)	2, n(%)	3, n(%)	4, n(%)	5, n(%)			
Knowledgeable	1 (1.1)	0 (0.0)	0 (0.0)	6 (6.6)	43 (47.3)	41 (45.1)	91 (100)	4.34 (.763)	4.28
Available to help students	2 (2.2)	0 (0.0)	0 (0.0)	7 (7.7)	62 (68.1)	20 (22.0)	91 (100)	4.05 (.808)	
Enthusiastic	1 (1.1)	0 (0.0)	0 (0.0)	7 (7.7)	42 (46.2)	41 (45.1)	91 (100)	4.33 (.775)	

Friendly	1 (1.1)	0 (0.0)	1 (1.1)	2 (2.2)	51 (56.0)	36 (39.6)	91 (100)	4.31 (.741)
Well prepared	1 (1.1)	0 (0.0)	1 (1.1)	6 (6.6)	44 (48.4)	39 (42.9)	91 (100)	4.30 (.796)
Good role model	1 (1.1)	0 (0.0)	1 (1.1)	7 (7.7)	47 (51.6)	35 (38.5)	91 (100)	4.24 (.794)
Approachable	1 (1.1)	0 (0.0)	0 (0.0)	5 (5.5)	42 (46.2)	43 (47.3)	91 (100)	4.37 (.755)

Table 1: Student's Perception of Anatomy Teachers and Instructors

Anatomy knowledge is important	Score						Total, n (%)	Mean (SD)	Mean Score
	0, n(%)	1, n(%)	2, n(%)	3, n(%)	4, n(%)	5, n(%)			
To understand other subjects	2 (2.2)	0 (0.0)	2 (2.2)	15 (16.5)	51 (56.0)	21 (23.1)	91 (100)	3.93 (.917)	4.08
Preparation for clinical years	1 (1.1)	0 (0.0)	1 (1.1)	9 (9.9)	53 (58.2)	27 (29.7)	91 (100)	4.13 (.778)	
Application in clinical years	1 (1.1)	0 (0.0)	3 (3.3)	11 (12.1)	54 (59.3)	22 (24.2)	91 (100)	4.01 (.823)	
For future profession	1 (1.1)	0 (0.0)	2 (2.2)	6 (6.6)	50 (54.9)	32 (35.2)	91 (100)	4.20 (.806)	
To be a good doctor	0 (0.0)	0 (0.0)	2 (2.2)	4 (4.4)	42 (46.2)	33 (47.3)	91 (100)	4.38 (.679)	
Reemphasized in clinical years	1 (1.1)	0 (0.0)	9 (9.9)	3 (3.3)	54 (59.3)	24 (26.4)	91 (100)	3.99 (.937)	
Feeling of becoming good doctor	1 (1.1)	1 (1.1)	2 (2.2)	14 (15.4)	55 (60.4)	18 (19.8)	91 (100)	3.92 (.846)	

Table 2: Student's Perception of The Importance of Anatomy Knowledge

Interest in learning	Score						Total,	Mean	Mean
	0,	1,	2,	3,	4,	5,			

anatomy	n(%)	n(%)	n(%)	n(%)	n(%)	n(%)	n(%)	(SD)	Score
Fun	2 (2.2)	0 (0.0)	6 (6.6)	6 (6.6)	59 (64.8)	18 (19.8)	91 (100)	3.91 (.939)	3.74
Confident to answer anatomy question	1 (1.1)	2 (2.2)	15 (16.5)	40 (44.0)	28 (30.8)	5 (5.5)	91 (100)	3.18 (.926)	
Interesting	1 (1.1)	0 (0.0)	0 (0.0)	7 (7.7)	59 (64.8)	24 (26.4)	91 (100)	4.14 (.708)	

Table 3: Student's Intrinsic Interest of Learning Anatomy

Anatomy Learning Process	Score						Total, n(%)	Mean (SD)	Mean Score
	0, n(%)	1, n(%)	2, n(%)	3, n(%)	4, n(%)	5, n(%)			
Practical session well organized	1 (1.1)	0 (0.0)	0 (0.0)	15 (16.5)	63 (69.2)	12 (13.2)	91 (100)	3.92 (.687)	3.71
Accessibility cadaveric specimen	1 (1.1)	1 (1.1)	7 (7.7)	19 (20.9)	50 (54.9)	13 (14.3)	91 (100)	3.70 (.925)	
Well maintained facilities	1 (1.1)	1 (1.1)	13 (14.3)	20 (22.0)	47 (51.6)	9 (9.9)	91 (100)	3.52 (.970)	

Table 4: Student's Perception of Anatomy Learning Process

Student's effort in learning anatomy	Score						Total, n(%)	Mean (SD)	Mean Score
	0, n(%)	1, n(%)	2, n(%)	3, n(%)	4, n(%)	5, n(%)			
Utilize anatomy museum	0 (0.0)	0 (0.0)	3 (3.3)	9 (9.9)	41 (45.1)	38 (41.8)	91 (100)	4.25 (.769)	4.37
Use anatomy models / specimens	0 (0.0)	0 (0.0)	3 (3.3)	4 (4.4)	40 (44.0)	44 (48.4)	91 (100)	4.37 (.725)	

Examinations helps to identify weakness	1 (1.1)	0 (0.0)	0 (0.0)	10 (11.0)	53 (58.2)	27 (29.7)	91 (100)	4.14 (.754)	
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Table 5: Student's Effort on Learning Anatomy

Histology Practical Facilities	Score						Total, n(%)	Mean (SD)	Mean Score
	0, n(%)	1, n(%)	2, n(%)	3, n(%)	4, n(%)	5, n(%)			
Poor microscope quality	1 (1.1)	5 (5.5)	33 (36.3)	24 (26.4)	27 (29.7)	1 (1.1)	91 (100)	2.81 (.999)	2.73
Poor quality of histology slides	1 (1.1)	3 (3.3)	45 (49.5)	19 (20.9)	23 (25.3)	0 (0.0)	91 (100)	2.66 (.934)	

Table 6: Student's Histology Practical Facilities

Overall, students' perception of the importance of anatomy knowledge (4.08), students' perception of anatomy teachers and instructors (4.28) and students' effort on learning anatomy (4.37) are all in positive areas. However, the results suggest that students' histology practical facilities (2.73) is the main area of concern. It can also be observed that students' perception on anatomy learning process (3.71) and students' intrinsic interest in learning anatomy (3.74), both also still need improvement.

4.0 DISCUSSION

The first construct is the perception of students towards anatomy teachers and instructors. Having a mean score of 4.28, which was in the positive area. This result shows that the students have a positive perception towards their anatomy lecturers and instructors. This finding was quite consistent with a study by Samian & Noor (2012) which stated that in general, student express satisfaction in teaching and learning performance delivered by academic staff in UTM as it falls within the range of very good and excellent performance (mean scored by lecturers ranged from 4.23 to 4.70). Ahmad & Aziz (2009) also stated that teachers had a positive attitude towards literature and literature teaching as perceived by the students, having a mean score of 4.22 which was within the high-level range. The positive feedback or perception by students towards their teachers and instructors might be due to the teacher's positive behaviour and attitude itself. As stated also by Ahmad & Aziz (2009), being responsible (84.3%) and enthusiastic (79.0%) yet fair to

every student, they (70.6%) showed concern in students' progress and achievement in subjects. Thus, the respondents felt that teachers were always there to give assistance when needed in whatever form, giving fair attention in either advice or knowledge.

Students also have a positive perception towards the importance of having knowledge on anatomy with a mean score of 4.08. One of the reasons is that anatomy have quite significant relevance in clinical settings. Students agreed that anatomy topics prepared them for clinical years and they can apply the knowledge in clinical years, with mean of 4.13 and 4.01 respectively. Study by Moxham et al (2011), using Thurstone and Chave (1951) analyses shows that students highly favour anatomy and recognise its importance in clinical medicine (with mode of 3). There is an area of improvement that the students need to understand that anatomy knowledge really helps them in understanding other subjects and very relevant in clinical settings, with mean of 3.93 and 3.99 respectively. Moxham et al (2011) stated that 52% of respondents agreed that anatomy subject should be taught as a foundation subject before commencing into clinical studies. Only 29% of respondents agreed that anatomy is just a complement subject and 70% of respondents agreed that anatomy is the basic knowledge that is needed before it is utilised in the clinical settings. Unfortunately, medical students still tend to enter their clinical years without having an adequate knowledge on anatomy. A research by Lazarus et al (2012) on how well the students apply their anatomical knowledge in clinical settings stated that the students rated themselves with group mean of 4.96 and some clinician educators rated these students with a group mean of 5.46. This suggests that medical students entering their clinical years are not adequately prepared to apply their basic science anatomical knowledge on the clinical settings. Nabil et al (2014) stated that around 68% of students agree that learning anatomy is fundamental to their future role as physicians. However, the same studies reported that anatomy fades away by the time students reach the clinical phase.

The student's intrinsic interest is also one of the important things in learning anatomy and may need some improvement, with a mean score of 3.74. Not all of the students perceived that learning anatomy is fun (mean of 3.91) but most of them agreed that anatomy is an interesting subject (mean of 4.14). Study by Berndetha&Lamhot (2018) shows that 70% of the students with a total of 110 students have a higher interest in learning anatomy course. Despite that, it was found that 50% of the students did not reach the prescribed graduation limit in the course, indicating that their failure in anatomy is not due to their interest. Some factors that can affect the student's interest in learning anatomy such as learning materials and knowledge itself. AlNassar et al (2012) reported that, out of 119 respondents, 88.6% were satisfied with the thoracoscopic video as a

teaching tool. 69.2% perceived it to be beneficial in learning anatomy and 96.2% of the respondents increased their interest in learning anatomy. Study by Abdel Meguid & Khalil (2017) shows that there is significance in knowledge and motivational scores. As the level of anatomical knowledge increases, the motivational score also increases ($F=24.83$, $P<0.0001$).

Student's effort on learning anatomy scored quite well with a mean of 4.37. This indicates students give their lot of effort in studying anatomy. Different students have their own approaches in learning anatomy. utilizing museums to learn anatomy (mean of 4.25), using anatomy models / specimens (mean of 4.37) and with having examinations (mean of 4.14). Study by Nagar et al (1992) majority of students feel that dissection hall teaching is the best method (56.12%) followed by multimedia projection (53.03%), viva and quiz (40.34%) and none of the students liked the see by yourself in the museum method.

Student's histology practical facilities is an area of concern with a mean score of 2.73. The quality of microscope is poor (mean of 2.81) and poor histology slides (mean of 2.66). These are the most important and preferable options used in learning histology during anatomy course. Study by Das et al (2019) reported that 51% of students showed the importance of use of individual microscopes for histology slides demonstration so that it will give the students more chance and more time to see the whole slide more carefully and effectively and will also reduce the unwanted chaos in practical class. In the same study also, some students (46.9%) preferred to use one microscope in a small group so that they can discuss the matter regarding the histology slides after being able to see it.

Anatomy is something very important in both pre-clinical and clinical settings. However, this study is limited only to those who are currently in clinical years. It will be more exciting to observe the perception of the anatomy teaching environment in both current preclinical students and clinical students. Another limitation is that the scope of discussion is quite huge. The learning anatomy environment could be anything such as the lecture's attitude during classes, practical sessions, examinations and cadaveric sessions. Furthermore, there is not much previous study on the perception of students towards the learning environment specifically for anatomy, making it quite hard to compare the result of this study. Also, a 25-items questionnaire does not seem sufficient to fully evaluate anatomy teaching learning. Further studies could be done by using the AEEMI full version which consists of 100-items.

5.0 CONCLUSION

The findings of this study show that year 4 medical students of University of Cyberjaya are satisfied with most areas of the current anatomy teaching learning. The only area that students are most concerned with is the histology practical facilities. Based on this study, we will provide feedback to the faculty to hopefully help them further improve anatomy teaching learning at the university.

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