ORIGINAL RESEARCH

Faculty and Students' Perceptions About Online Teaching Styles of Faculty in Large Group Lectures

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Introduction: An unprecedented disruption in medical education worldwide was caused due to the Covid 19 pandemic. Online teaching has become one of the primary forms of education. In this paper, we aimed to understand the faculty and students' perceptions about the teaching styles adopted by the faculty during online large group teaching from two universities in the United Arab Emirates.

Patients and Methods: This is a cross-sectional opinion survey-based study. A pre-validated teaching style inventory in higher education (TSIHE) questionnaire was emailed to the students and faculty involved in large group online learning and teaching activities during the lock-down period of the COVID 19 pandemic from two different medical Universities in the United Arab Emirates. A total of 423 students and 57 faculty participated in the study. Descriptive and Inferential statistics were used to analyze the data.

Results: There was a significant difference between the faculty and students on the perception of faculty online teaching styles. The difference was significant in teacher-student interaction and teacher structuring styles. In contrast, faculty and students' perceptions were comparable for decision-making negotiation and behavioral control teaching styles.

Conclusion: The study found that there was a significant perception differences between the faculty and students on the faculty teaching style during online large group teaching. Importantly, faculty perceived that they were more emotionally attached and more flexible in teacher-student interaction and teaching structuring during online teaching than the student perceived.

Keywords: COVID 19, medical education, online large group teaching, medical students, faculty perception

Introduction

A student's motivation to learn, academic performance, satisfaction, and involvement are all influenced according to the teacher's instructional style.[1] Based on this, the concept of teaching style is the specific approach in which a teacher structures the class and lectures. Since the middle ages, lectures have been the primary information transfer method for medical education students. Despite the suggestions to use alternate pedagogical strategies such as flipped classrooms and electronic resources, lecturing is the primary teaching method in medical education in the classroom and the clinical setting.[2] Camargo & Hederich grouped the teaching style theories into pedagogical and psychological traditions. In psychological tradition, teacher instructional style depends on what the teacher learns and believes will be taught to the students. This tradition is less flexible as the teacher rarely changes the instruction to suit the student's needs. In pedagogical tradition, the teacher plans his teaching style according to the student's learning activities, engagement and learning styles. While practicing a pedagogical teaching style, a teacher considers the influences on students learning and changes their instructional behaviour.[3] Humanistic learning is one of the adult learning theories where students are self-

motivated.[4] The pedagogical teaching tradition enhances humanistic learning by providing reflective feedback[5] and facilitates self-directed learning under challenging times like the COVID 19 pandemic.

The lessons learned in the initial phase of disruption in medical education was that the students' practical and efficient learning depends on the quality of teaching in blended learning. Despite the rapid growth of online technologies, faculties might have found it challenging to move to something new when the patterns of behavior required for success are not fully established.[6] Although many studies have looked into the perceptions of faculty and students regarding online learning,[7–10] there is a paucity of studies on their perceptions about the large group online teaching styles. Hence, the purpose of the present study was to understand the perceptions of faculty and students about the teaching styles adopted by the faculty during online large group teaching. To be more specific, the study addressed the following research question: Are there any differences in the faculty and student perceptions regarding teaching styles during online learning as measured by the questionnaire-based survey using teaching styles inventory in higher education[11] (TSIHE)?

Materials and Methods

The present study is a quantitative cross-sectional opinion survey that uses a pre-validated teaching style inventory in higher education (TSIHE) questionnaire. The study was conducted from 10th May 2021 to 30th of June 2021, which was the end of second semester of the academic year 2020–21. All Medical undergraduate students from two different universities who had attended large group online lectures during the 2020–21 academic year and the faculty involved in online teaching took part in the study. The study population included 927 undergraduate students and 93 teaching faculty from basic sciences and clinical sciences. The study included all students and faculty involved in online teaching and willing to participate. At the same time, students and faculty who were unwilling to participate and uninvolved in the online teaching and learning activities were excluded from the study.

A convenient sample includes the entire student cohort of MBBS students from 1st year to 5th year and faculty involved in online teaching. After obtaining ethical approval, the email addresses of the teaching faculty and all MBBS undergraduates were collected. The google forms containing consent, the entire teaching faculty were requested to self-report their teaching styles by voluntarily filling out the TSIHE questionnaire. Similarly, the entire undergraduate students were emailed TSIHE google forms individually. The students were requested to voluntarily participate in the survey by answering all the teaching style questionnaire items. The statements in the TSIHE questionnaire sent to the students were modified as perceptions of the students on faculty teaching styles without changing any meaning of the statements.

Instrument Used

Teaching Style Inventory in Higher Education (TSIHE) was a pre-validated instrument that collected data from 3312 university students to measure the teachers' teaching styles.[3] This instrument consists of twenty-eight items that measure four constructs, namely teacher-student interaction (TSI) with ten items, decision-making negotiation (DMN), teaching structuring (TS), and behavioral control (BC) with six items each. The reliability of items within and between the constructs was excellent, with Cronbach's alpha value of 0.974. TSI, DMN, and behavioral control constructs showed excellent reliability with Cronbach's alpha of 0.9, whereas 0.8 for teaching structuring (Table 1).

Table 1 Reliability of Teaching Style Inventory in Higher Education (TSIHE)

Teaching Style Domains	Number of Items	Cronbach's Alpha
Teacher Student Interaction (TSI)	10	0.946
Decision-Making Negotiation (DMN)	6	0.933
Teaching Structure (TS)	6	0.887
Behavioral Control (BC)	6	0.902
Total	28	0.974

Answers from the participants were collected using a four-point Likert scale with one completely agreeing, two as agree, three as disagree, and four completely disagreed for each item of TSIHE. The teaching style constructs were classified into two categories based on Likert scale scores. Teacher Student Interaction was grouped into emotionally attached and emotionally detached. At the same time, decision-making negotiation was grouped into compromised with decision-making and authoritarian. Similarly, the teaching structuring domain was grouped as flexible and rigid. Strict and Lenient were the two groups for the behavioral control domain (Table 2).

Data Analysis

The data collected was analyzed using Statistical Package for Social Sciences (SPSS) software 22. Both descriptive and inferential statistics were used for data analysis. Descriptive statistics were used to analyze the students and faculty responses to the questionnaires. The difference between perceived teaching styles by students and faculty was analyzed by independent Student's *t*-test.

Results

All the five years of MBBS students of the two universities in the UAE were involved in this study. A total of 45.6% (423 of 927) of undergraduate students and 63.4% (57 of 93) of faculty responded to the questionnaire, as shown in Table 3. Among the students, 46.19% were in the first year, whereas 42.71%, 42.61%, 49.43% and 47.59% were in second, third, fourth and fifth years, respectively.

Table 2 Classification of Four Domains of Teaching Styles Based on Likert Scale Score

Teaching Style Domain	Classification	
	Likert Scale 1 to 2	**Likert Scale 2.01–4**
Teacher-student interaction	Emotionally attached	Emotionally detached
Teaching structuring	Flexible	Rigid
Decision Making Negotiation	Compromised	Authoritarian
Behavioral Control	Strict	Lenient

Table 3 Participation Percentage of Students and Faculty in the Study

Year of Study	Total No of Students	Total No of Students Who Responded	Percentage % Response
Year 1	210	97	46.19%
Year 2	199	85	42.71%
Year 3	176	75	42.61%
Year 4	176	87	49.43%
Year 5	166	79	47.59%
Total	927	423	45.63%
Faculty	**Total No of Faculty**	**Total No of Faculty Who Responded**	**Percentage % Response**
Basic & clinical sciences Faculty	93	57	61.29%

Table 4 Independent Student –*t*-test for Faculty and Students' Perceptions About Online Large Group Teaching Style

Teaching Style	Sub-Domains	Faculty	Student	P-value
		No. (%)	No. (%)	
Teacher Student Interaction (TSI)	Emotionally attached	51 (85.0)	279 (65.6)	0.003
	Emotionally detached	9 (15.0)	146 (34.4)	
Decision-Making Negotiation (DMN)	Compromising with decisions	48 (80.0)	298 (70.1)	0.073
	Authoritarian with decisions	12 (20.0)	127 (29.9)	
Teaching Structuring (TS)	Flexible	54 (90.0)	312 (73.4)	0.005
	Rigid	6 (10.0)	113 (26.6)	
Behavioral Control (BC)	Strict	46 (76.7)	313 (73.6)	0.618
	Lenient	14 (23.3)	112 (26.4)	

The perceptions of the faculty on their teaching styles and the perception of students on faculty teaching styles were compared using an independent Student's *t*-test, and the results are shown in Table 4. A statistically significant difference was seen in the perceptions of the Teacher-student Interaction (TSI) and the teaching structuring (TS) domains of teaching styles between students and faculty. A total of 85% of the faculty perceived that they were emotionally attached in the Teacher-student interaction teaching style, whereas 34.4% of students perceived that faculty were emotionally detached (p = 0.003). In terms of teaching structuring (TS), 90% of the faculty perceived that they adopted a flexible approach in teaching structuring style. However, only 73.4% of the students felt that their faculty adopted a flexible teaching structuring style approach, which was statistically significant (p-value 0.005). The perceptions of both faculty and students in the other two teaching style domains, namely decision-making negotiation (p=0.073) and Behavioral control (p=0.618), were comparable with no statistical difference.

Discussion

After the diagnosis of the first SARS CoV-2 infection in December 2019, the WHO director announced it as a global pandemic on the 11th of March 2020. This turmoil has led to many changes, including the shutting down medical institutes. However, given technological developments, medical teaching and learning continued using virtual platforms. This sudden shift brought out multiple global positive and negative impacts on medical sciences education, with some regional differences.[11–17] A systematic review that included sixty-four studies revealed positive and negative effects of teaching. Lack of student-teacher interaction, motivation from faculty, individualized teaching, misinterpretation of faculty on students' anxiety and disengagement on the one hand, and improved teacher mentorship, the flexibility of learning, on the other hand, was reported.[18,19] TSIHE, the instrument used for the study, had an advantage over other prevailing instruments was it overcame the other instruments' self-reporting bias on teaching styles by considering both the psychological and pedagogical traditions of teaching during didactic lectures in a classroom setting.[3] We found this instrument applies even to understanding the large group online teaching styles.

There was a significant difference between the faculty and students in the perception of faculty teaching styles. The difference was significant in teacher-student interaction and teaching structuring styles. In contrast, faculty and students' perceptions were comparable for decision-making negotiation and behavioral control teaching styles.

Most faculty (85%) felt emotionally attached to students, whereas only 65.6% of students perceived their faculty emotionally attached during teacher-student online interactions. Similarly, only 12% of the faculty perceived that they were rigid, whereas 31% of students felt that faculty were rigid in their teaching structuring. The teaching style measure (TSIHE) used in the present study is a multidimensional instrument. It is a modified version of a unidimensional

instrument, the Teaching Style Inventory (TSI).[3] Since no studies used TSIHE in the literature; we compare our results with those that used TSI and other teaching style measuring instruments.

Differences between the students and faculty regarding faculty teaching style have been documented in previous studies. For example, a difference in students' and tutors' perceptions of the teaching styles in problem-based learning showed that students perceived tutors as suggestive-assertive in their instructional behavior. In contrast, faculty tutors perceived themselves as facilitative-collaborative.[20] However, other studies in India[21] and France[22] showed that student perceptions were the same as the faculty on the perception of faculty teaching styles. The present study also showed no significant difference in the perception among the students and faculty on teaching decision-making negotiation and behavioral control teaching styles of the faculty. Students and faculty agreed that the faculty were less authoritarian, had taken students as partners in their decision-making negotiation, and were strict with the students in behavioral control.

An apparent strength of the present study is that measuring the multidimensionality of large group online teaching styles and relatively large sample size, though convenience sampling, from two institutes increased the study's rigor and the validity of conclusions. However, despite using previously validated instrument for measuring the teaching styles, the instrument is not validated for the local context, however we tested the instrument for reliability and found it to be a high reliability instrument. Hence, we are not sure about the instrument's psychometric properties in our local context. Our study is the first to use a multidimensional instrument, TSIHE, to understand the perceptions of the faculty and students on the large group online teaching styles.

Conclusion

This was a cross sectional study on faculty and students' perceptions about online teaching styles of faculty in large group lectures during the COVID 19 pandemic from two UAE medical universities. In the present study, the faculty perceived that they were more emotionally attached and flexible in structuring their teaching than the students' perception. However, there was no significant difference between students and faculty' perceptions of teaching styles in the dimensions of behavioral control, decision-making, and negotiation styles of teaching. The current study's findings should assist individuals involved in teaching online educational programs in developing strategic plans to respond more effectively to challenges associated with the teaching styles. Further research is required to develop and validate appropriate multidimensional instruments to measure teaching styles during online and blended teaching-learning activities.

Abbreviations

BC, Behavioral Control; COVID 19, Coronavirus Disease 2019; DMN, Decision-Making Negotiation; GMU, Gulf Medical University; IRB, Institutional Review Board; SPSS, Statistical Package for Social Sciences; TS, Teaching Structuring; TSI, Teaching Style Inventory; TSI, Teacher-Student Interaction; TSIHE, Teaching Style Inventory in Higher Education; UAE, United Arab Emirates.

Ethics and Consent

IRB approval obtained from both the universities:

1. Gulf Medical University Institutional Review Board approval no: IRB/MHPE/STD/10/April- 2021.
2. RAK Medical and Health Sciences University – Research and Ethics Committee approval no: RAKMHSU-REC-143-2020/21-F-M.
3. Informed consent was taken from all the participants who participated in the survey.

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Disclosure

The authors report no conflicts of interest in this work.

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