

Virtual vs Traditional Seminar Course Satisfaction Among Two Groups of Pharmacy Students: Survey Observational Study

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Abstract

Background:

Distance learning in pharmacy schools has gained importance with the growth of technology. However, facing the COVID-19 pandemic governments worldwide have dramatically accelerated the pace of implementing virtual learning not only to prevent the spread of the virus but also to ensure continuity of education. Studies have provided emerging evidence assessing the distance learning environment, barriers, obstacles, perceptions, and attitudes of educators as well as learners since the outbreak.

Objectives: To evaluate students' satisfaction in seminar course conducted virtually due to distance learning model in comparison to previous conventional seminar presentation.

Materials and Methods: A total of 102 students' responses to 8-questions survey were collected and analyzed. The responders were 42 students from batch 5, the conventional in-class seminar model (41%) and 60 students from batch 6 students, the virtual seminar model (59%) were included. The survey score was compiled for all questions to reflect the students' satisfaction. In this study, we have used the descriptive statistics like mean and standard deviation and to find the comparison between group-1 (Batch 5) and group-2 (batch-6) using independent sample t-test, $p < 0.05$ was fixed as level of significant.

Results: Virtual seminar model (batch 6) reported a conveniently high satisfaction like the conventional in-class seminar model (batch 5).

Conclusion: The college of pharmacy at King Saud bin Abdul Aziz University for Health Science was successfully able to modify the seminar course due to the COVID-19 outbreak to ensure the safety of students and staff while maintaining the quality of the course, and further improving the students' satisfaction.

Introduction

Studying the efficiency of blending online learning in pharmacy schools with face-to-face learning has been gaining importance with the growth of technology (1, 2, 3). However, since the declaration of COVID-19 as a pandemic infectious disease by WHO (4), the kingdom of Saudi Arabia has dramatically accelerated the pace of implementing virtual learning not only for preventing the spread of the virus but also to ensure the continuity of education. (5, 6). Current studies have provided emerging evidence assessing the distance learning environment, barriers obstacles perceptions, and attitudes of educators as well as learners since the outbreak of the pandemic. (5,6,7,8).

Despite the inevitable advantages of online learning such, no travel, cost saving, flexibility, and the ability to ask anonymously there also some expected disadvantages such as internet connections, lack of space, the timing of lectures and tutorials, lack of space, interruption of the family (6), furthermore, the

human factor and face-to-face interactions among the students themselves and between the instructor and the student in higher education is still warranted. (9)

College of Pharmacy (COP) in King Saud bin Abdul-Aziz for Health Sciences (KSAU-HS) was established by implementing an ACPE-accredited pharmacy program that provides not only didactic courses but also research, introductory and advanced pharmacy experiential courses, and a seminar course. (10). This seminar course is a one-credit hour course for Pharm D. students in their third professional year. This course is designed to help students gain the necessary skills for answering clinical controversial questions encountered in the practice using the strongest evidence available; These skills comprised of literature review and critical evaluation of published studies and presentation skills. The assessment of each student is done on seminar preparation (40 %) by the designated faculty members who served as a mentor for the preparation of the material and the final PowerPoint presentation. The rest of the grade (60%) on the seminar presentation is carried out by the faculty members who attend the live seminar. However, after the occurrence of the COVID-19 pandemic seminar course was shifted to full online mode. Meetings between the student and the faculty member, preparation of the seminar outline and PowerPoint presentation were done online through ZOOM, Microsoft Teams, and other online means of communications. The seminar presentation was also carried out utilizing Microsoft Teams platform; students were divided among five virtual rooms, students presented their seminar and evaluated by faculty members in designated virtual meeting rooms according to pre-announced evaluation rubric.

The seminar topics were suggested by faculty members and all topics were sent to the students to rank their preferred topics. The matching between student choice and the topics were done by the course administrators to assure fair assignment. The same process remained the same for the two batches.

Materials And Methods

We have conducted an observational study on seminar course among two group of pharmacy students in the year 2019 and 2020. The study utilized a seminar course evaluation survey that was adopted from a previously published article (11). <https://pubmed.ncbi.nlm.nih.gov/18483598/>

In the present study, the survey was sent to all students after the conclusion of the seminar presentation and the responses were collected and recorded for further analysis. We received a total of 102 students (81.6 %). Forty-two students from batch 5 (79.4%) and 60 students from batch 6 students (83.3%) participated in this study. The student participation was completely voluntary.

The Survey questionnaire:

The survey is made up of total 8 questions with 6-likert scale (strongly agree, agree, slightly agree, slightly disagree, disagree, and strongly disagree). These were then converted to scores, having strongly agree as 6 with an expected maximum score of 48 and a minimum score of 6. The higher the score, the highest the satisfaction.

Data collection method:

A survey was distributed after the conclusion of the seminar course and students were asked to record their responses anonymously. This was carried out for batch 5 for quality assurance purposes and as a step to report the experience. Once COVID-19 pandemic followed by converting into a distance learning model, the same was done for batch 6. The whole idea emerged to compare both experiences to evaluate if the new distance learning model affect the delivery of the course and the satisfaction of the learning outcomes during this challenging environment.

The batch 5 seminar presentation was traditional face-to-face in a large auditorium over five consecutive days. All college of pharmacy faculty were required to attend and served as evaluators. All students were also in attendance for all sessions for all presentation days. Each presentation was for 25 minutes with additional 5 minutes question and answer sessions from both faculty and students.

The batch 6 seminar presentation was completely virtual utilizing Microsoft teams. Five virtual meeting groups (5-6 student presentations each) were running at the same time. In each room, there were 5-6 faculty who served as evaluators using the same pre-announced evaluation rubric. The presentation time was 20 minutes with additional 5 minutes for questions and answers.

Inclusion Criteria: Students who responded voluntarily to the survey questionnaire anonymously. *There was no need for ethics approval deemed unnecessary as this course evaluation is part of the quality assurance course delivery, however students signed the consent to participate. The first survey was conducted prior to pandemic and when we implemented the same survey this year post the outbreak, we wanted to compare the two batches responses as well as their perception for this unique experience. The data collected from enrolled students were compared between the two student batches and the lesson learned were worth sharing as educational experience. However, a statement that the participation in voluntary and the responses were anonymous, and the results may be utilized for quality improvement initiative is always stated in all college of Pharmacy student surveys. The need for ethical approval was waived following the Ministry of National Guard-Health Affairs Administrative Policy and Procedure as the participation serves educational purposes. All methods were performed in accordance with the compliance of these guidelines and regulations.*

Data Management and Statistical Analysis Used: The data were organized and compiled and formulated by Microsoft Excel 2010 [Office 360, Microsoft Ltd., USA] and were analyzed by using statistical software SPSS 21.0 Version [IBM SPSS Ltd., USA]. The continuous variables were expressed by using descriptive statistics like mean, and standard deviation. To find the comparison between group-1 (Batch 5) and group-2 (batch-6) using independent sample t-test. $p < 0.05$ was fixed as level of significant of 0.05.

Results

A total of 102 students' responses were analyzed in the present study. Out of 102 students, 42 students from batch 6 (Virtual). Average mean total survey score of the

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batch 5 students was 40.79 ± 6.80 . Average total survey score of the batch 6 students was 38.23 ± 8.11 .

In batch 5, most of the students 25 (59.5%) scored >40, followed by 14 students (33.3%) scored 31-40, and 3 students (2.1%) scored ≤ 30 . This reflects a high percentage of satisfaction. In batch 6, twenty-five students (41.7%) scored >40, followed by 28 students (46.7%) scored 31-40, and 7 students (11.7%) scored ≤ 30 as shown in **Table – 1**.

Mean survey score of batch 5 was 40.79 ± 6.80 and the mean seminar score of batch 6 was 38.23 ± 8.11 and the difference between the means was not statistically significant with independent samples p – value = 0.098 (>0.05). From this, we conclude that both batch 5 and batch 6 have had a similar presentation experience as shown in **Table – 2**.

Among 42 batch 5 pharmacy students, 25 (59.5%) of students have responded as ‘strongly agree’ to utilizing the concept of ‘strength of the evidence’ as a tool. Twenty-three (54.8%) of the study population responded as ‘strongly agree’ to the question that the ‘course enhanced my presentation skills’ and ‘further developed my skills in providing evaluations’. Seventeen students (40.5%) have ‘enjoyed the course’, few students 4 (9.5%) were ‘slightly disagree’ and 1 (2.4%) student have responded as ‘strongly disagree’. Exactly fifty percentages 21 (50%) of students thought that ‘the learning environment was conducted in a supportive manner’. Fifteen students (35.7%) responded as strongly agree to ‘working in pairs as a team was effective in achieving course outcomes’, five students (11.9%) disagree, and only 2 students (4.8%) ‘strongly disagree’. Eighteen students (42.9%) responded as strongly agree to ‘my learning goals were achieved’ and 1 (2.4%) ‘strongly disagree. More than fifty percent of students 23 (54.8%) responded as strongly agree to ‘I developed an appreciation for an opposing perspective contrary to my own personal one for a specific policy issue’ and only one student (2.4%) strongly disagree; as shown in **Table – 3**.

Among sixty batch 6 pharmacy students, thirty-three students (55.0%) responded as ‘strongly agree’ about the concept of ‘strength of the evidence’ as a tool and 20 students (33.3%) agreed. Twenty-seven students (45.0%) responded as ‘strongly agree’ to that the ‘course enhanced my presentation skills’ and only 3 students (5.0%) strongly disagree. Twenty-three students (38.3%) responded to that ‘the course further developed my skills in providing evaluations’ and 6 students (1.7%) ‘strongly disagree’. Twenty-one students (35.0%) have ‘enjoyed the course’, fourteen students (23.3%) ‘slightly agree’ and only 3 students (5.0%) responded as ‘strongly disagree’. Twenty-two students (36.7%) thought ‘the learning environment was conducted in a supportive manner’, Twelve students (20.0%) ‘slightly agree’ and only five (8.3%) ‘strongly disagree’. Sixteen students (26.7%) responded as strongly agree to ‘working in pairs as a team was effective in achieving course outcomes’, five students (8.3%) ‘slightly disagree’ and 7 students (11.7%) ‘strongly disagree’. Twenty-seven students (45.0%) responded as strongly agree to that ‘my learning goals were achieved’ and 2 students (3.3%) ‘strongly disagree’. Twenty five (41.7%) responded with strongly agree to that ‘I developed an appreciation for an opposing perspective contrary to my own personal one for a specific policy issue’ and 2 students (3.3%) ‘strongly disagree’ as shown in **Table – 4**

Discussion

In this descriptive study, the impact of modifying the method of conducting the seminar course during the COVID-19 outbreak was assessed by comparing the performance and the satisfaction level of batch-6 students with batch-5.

The finalizing process of the list of seminar topics, the students' satisfaction of the topics, and the faculty's evaluation of students in preparing their seminar, and the evaluation rubric of the presentation remained the same.

However, due to the COVID-19 outbreak, batch-6 students were not able to meet their supervisors physically like their colleagues in the previous year. During the COVID-19 outbreak, all meetings between supervisors and students in the seminar course were conducted virtually through different applications including Microsoft Team and Blackboard Collaborate, in addition to emails and phone communication.

There was no significant effect on achieving the learning goal of the seminar course, where 92% of batch-6 students agreed that they were able to successfully achieve the learning goals of this course compared to 95% of batch-5 students, (P-value 0.518). In addition, 80% of batch-6 students agreed that the learning environment of the seminar course was conducted in a supportive manner, compared to 90.5% of batch-5 students, (P-value 0.183).

In the seminar presentation, students presenting their seminar topics using PowerPoint slides and they are evaluated by several faculty members from both the pharmacy practice department and pharmaceutical science department using a pre-announced rubric, which is mapped to the course learning outcomes (CLOs) and program learning outcomes (PLOs) as well, with a total score of 60%. With COVID-19 outbreak, the seminar presentation activity conducted the same way, but it was virtually through the Microsoft Team, and students were evaluated by multiple graders using the same rubric that was used previously.

The impact of virtual conduction of the seminar presentation activity was assessed. There was no significant difference between batch-6 (97%) and batch-5 (100%) students in the agreement that the seminar course enhanced their appreciation of the concept of "strength of evidence" as a tool for supporting their recommendations on the specific policy issues, (P-value 0.235). Furthermore, 93% of batch-6 students agreed that the course further developed their skills in providing evaluations, compared to 100% of batch-5 students, (P-value 0.090).

However, the proficiency of student's presentation skills was significantly affected with conducting the seminar presentation activity virtually. In batch-6, 90% of the students agreed that the course enhanced their presentation skills compared to 100% of batch-5 students, (P-value 0.036). This difference mainly occurs because of lacking the experience of the chance to apply the non-verbal communication skills while presenting the seminar topics. Previously, the seminar presentation activity was conducted in a

large auditorium, with a capacity of more than 100 people, so students had opportunity to present their seminar topics in front of a huge number of audience including students from different batches and faculty members with different specialties. For batch 6, they present their seminar topics virtually, so they missed the opportunity to apply the non-verbal communication skills such as maintain eye contact with the audience, avoidance of certain mannerisms, in addition to a maintained polished and poised posture.

Moreover, the influence of conducting the seminar course virtually was assessed by comparing the overall satisfaction of batch-6 students with the previous batch. The satisfaction of batch-6 students was not significantly different than that of batch-5 students.

Finally, the college of pharmacy at King Saud bin Abdul Aziz University for Health Science was able to modify the seminar course due to COVID-19 outbreak with ensuring the safety of students and staff while maintaining the quality of the course, however, the reflected satisfaction was not affected with the new model.

Conclusion

The unique experience of virtual seminar presentation did not affect the overall satisfaction compared to face-to-face traditional seminar presentation. The model can be further evaluated with larger cohort of students and may be suggest utilization of technology for better outcomes.

Declaration

Ethics approval: "waived"

Consent for publication: "Not applicable"

Availability of data and materials: The datasets used and/or analyzed during the current study are available from the corresponding author on reasonable request.

Competing interests: "The authors declare that they have no competing interests"

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Authors' contributions:

SH: Study conception and design, Acquisition of data: Analysis and interpretation of data, Drafting of manuscript: Critical revision, First and Corresponding Author.

MS: Study conception and design, Acquisition of data: Analysis and interpretation of data, Drafting of manuscript: Critical revision. (AQ, MA, MAJ): Data acquisition, Analysis, and interpretation of data, Drafting of manuscript. (YA, AK, AB) Study design, critical revision, data interpretation.

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Tables

Table 1: Distribution of total scores among student

Total Scores	Seminar Class	
	Batch - 5 (the conventional in-class seminar model)	Batch - 6 (Virtual seminar model)
	No. of Students N = 42 n (%)	No. of Students N = 60 n (%)
≤ 30	3 (2.1)	7 (11.7)
31 - 40	14 (33.3)	28 (46.7)
>40	25 (59.5)	25 (41.7)

Table 2: Comparison of mean between batch 5 and 6 students seminar satisfaction scores

(N=42)

	Groups	No. of Students N	Mean	Std. Deviation	Std. Error Mean	p-value
Seminar Scores	Batch-5 the conventional in-class seminar model	42	40.79	6.80	1.05	0.098
	Batch-6 (Virtual seminar model)	60	38.23	8.11	1.05	

Table - 3 Distribution of survey responses of 5th batch students (the conventional in-class seminar model) (N=42)

Questions	Strongly Agree n (%)	Agree n (%)	Slightly Agree n (%)	Slightly Disagree n (%)	Disagree n (%)	Strongly Disagree n (%)
course enhanced appreciation of the cept of 'strength of evidence' as a tool supporting my ommendations on specific policy e.	25 (59.5)	13 (31.0)	4 (9.5)	0	0	0
course enhanced presentation skills	23 (54.8)	14 (33.3)	5 (11.9)	0	0	0
course further eloped my skills in viding evaluations	23 (54.8)	12 (28.6)	7 (16.7)	0	0	0
joyed the course	17 (40.5)	12 (28.6)	7 (16.7)	4 (9.5)	1 (2.4)	1 (2.4)
learning ironment was ducted in a portive manner	21 (50.0)	13 (31.0)	4 (9.5)	1 (2.4)	2 (4.8)	1 (2.4)
working in pairs a team was effective chieving course omes	15 (35.7)	9 (21.4)	8 (19.0)	0	5 (11.9)	2 (4.8)
learning goals e achieved	18 (42.9)	15 (35.7)	6 (14.3)	1 (2.4)	0	1 (2.4)
veloped an eciation for an osing perspective trary to my own onal one for a ific policy issue	23 (54.8)	11 (26.2)	6 (14.3)	0	0	1 (2.4)

Table - 4 Distribution of survey response of 6th batch students (Virtual seminar model) (N=60)

Questions	Strongly Agree	Agree	Slightly Agree	Slightly Disagree	Disagree	Strongly Disagree
The course enhanced my appreciation of the concept of 'strength of the evidence' as a tool for supporting my commendations on a specific policy issue.	33 (55.0)	20 (33.3)	5 (8.3)	1 (1.7)	0	1 (1.7)
The course enhanced my presentation skills	27 (45.0)	19 (31.7)	8 (13.3)	3 (5.0)	0	3 (5.0)
The course further developed my skills in providing evaluations	23 (38.3)	21 (35.0)	12 (20.0)	2 (3.3)	1 (1.7)	6 (1.7)
I enjoyed the course	21 (35.0)	11 (18.3)	14 (23.3)	4 (6.7)	7 (11.7)	3 (5.0)
The learning environment was conducted in a supportive manner	22 (36.7)	14 (23.3)	12 (20.0)	3 (5.0)	4 (6.7)	5 (8.3)
The working in pairs as a team was effective in achieving course outcomes*	16 (26.7)	10 (16.7)	19 (31.7)	5 (8.3)	1 (1.7)	7 (11.7)
My learning goals were achieved	27 (45.0)	17 (28.3)	11 (18.3)	2 (3.3)	1 (1.7)	2 (3.3)
I developed an appreciation for an opposing perspective contrary to my own personal one for a specific policy issue*	25 (41.7)	12 (20.0)	15 (25.0)	4 (6.7)	1 (1.7)	2 (3.3)

*Missing data occurred

Supplementary Files

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