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Effectiveness and student satisfaction with limited face-to-face lab skills at the faculty of medicine Pasundan University in 2022

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Abstract---*Skills lab* is a medical practice activity which is usually carried out offline to train the skills of pre-clinical and clinical students, both medical clinical skills, physical examinations and communication skills. The COVID-19 pandemic has changed the learning patterns of students around the world, including in the field of medical education. The purpose of this research is to analyze the effectiveness and satisfaction of students towards limited face-to-face skills lab learning at the Faculty of Medicine Pasundan University. The research design was cross-sectional in the form of descriptive analytic with primary and secondary data collection in July 2022. The research subjects were pre-clinical stage 1, 2, and 3 students of the Faculty of Medicine, Pasundan University academic year 2021/2022 with 145 respondents. The primary data collection used a questionnaire as the research instrument with the google form application and objective structured clinical examination (OSCE) value data. Distribution of data used Shapiro-Wilk test and analysis using independent T-test. The data were analyzed by SPSS software version 26 in 2019. Based on tabulated data, it was found that student responses to limited face-to-face skills lab learning activities at the Faculty of Medicine, Pasundan University, the majority responded strongly agree that was 61.64%, while the response agreed was 37.13%, disagreed 1.23% and strongly disagreed 0%. OSCE scores in groups limited face-to-face meetings (PTMT) has an average of 77.91, above the average of the non-PTMT group of 71.43. The result of the t-test for the mean value of OSCE is 2.196 with $p = 0.035$. Students of Medicine Faculty showed high satisfaction with the limited face-to-

face skills lab that had been implemented. In addition, the skills lab which is carried out face-to-face is considered more effective when compared to the results of a higher average OSCE score.

Keywords---student satisfaction, limited face-to-face, lab skills, medicine.

Introduction

Skills lab or clinical skills laboratory is a medical practice activity which is usually carried out offline to train the skills of pre-clinical and clinical students, both medical clinical skills such as history taking, physical examination, diagnostic reasoning, procedural perfection and communication skills using various learning models such as mannequins, phantoms, standard patient, or audio-visual equipment. This clinical skills laboratory helps to ensure that all students know, practice the technique and then assess it properly before practicing on an actual patient (Al-Elq, 2007). This activity is ideally carried out offline in order to help students become more confident and show better performance when carrying out clinical skills and actions after graduating to become doctors. (Upadhayay, 2017).

The COVID-19 pandemic has accelerated various changes in various sectors, including in the field of medical education, which consists of skills labs, tutorials and practicums (Kelly et al., 2020; Rahayu et al., 2021). Teaching and learning activities that usually occur face-to-face have drastically changed to online learning so that it has a major impact on student competence (Tadesse & Muluye, 2020). The level of saturation tends to increase due to the absence of eye contact or direct contact. Lectures that last for hours can be boring and make students' focus decrease (Yang et al., 2021). After almost 2 years, the Faculty of Medicine, Pasundan University carried out online teaching and learning activities, then in early 2022 when the pandemic had begun to subside, the Faculty of Medicine Pasundan University decided to carry out limited face-to-face offline learning (PTMT) in skills lab activities to support achievement of student competence.

Student satisfaction has a role as a result of the educational process because student satisfaction is related to professional attitudes, career commitment, and retention of knowledge obtained in the future. (Al-Sudani et al., 2013; Angelopulo, 2013; Nashaat et al., 2021). Research related to medical student satisfaction related to clinical education was conducted by Ziaee et al in 2004 which showed 38.8% of students were satisfied with the learning process at the clinical stage. (Ziaee et al., 2004). However, research on face-to-face skills labs was limited during the COVID-19 pandemic and had never been carried out before and it was important to evaluate its activities so that researchers were interested in knowing its effectiveness seen from the comparison of students' OSCE (objective structured clinical examination) scores in online and offline skills labs as well as evaluating student satisfaction. to the limited face-to-face skills lab that has been carried out at the Faculty of Medicine Pasundan University.

Method

Research Design and Subject

The cross-sectional research design is descriptive analytic with primary and secondary data collection. The research was carried out at the Faculty of Medicine Pasundan University, Bandung, Indonesia on July 2022. The research subjects were medical students in the pre-clinical stages of level 1, 2, and 3 of the Faculty of Medicine Pasundan University academic year 2021/2022. The subject taken is a total sampling of 145 respondents.

Data Collection

The primary data collection used a questionnaire as research instrument by using a google form application consisting of statements related to student satisfaction and secondary data in the form of an Objective Structured Clinical Examination (OSCE) value database. Questionnaires were given to students to fill out themselves with 1 day filling time. This questionnaire was previously tested for validity and reliability to determine the feasibility of the questionnaire. The indicators of the questionnaire are composed of statements with answers in the form of a Likert scale which has a value of 1 to 4, the lowest being answers strongly disagree to the highest with answers strongly agree.

Methods and Data Analysis

The validity and reliability test of the questionnaire was carried out by using Cronbach's Alpha analysis. Furthermore, primary data from questionnaires and secondary data in the form of OSCE values were then recapitulated, processed and analyzed the results. Student satisfaction with limited face-to-face skills lab learning is grouped into 2 categories, namely satisfied and dissatisfied. The satisfied category is assessed if students answer the questionnaire with answers strongly agree and agree while the dissatisfied category is assessed if students answer the questionnaire with answers disagree and strongly disagree. The OSCE value data was compared between the OSCE stasi scores with limited face-to-face meeting activities (PTMT) and without PTMT activities. The distribution of the data was seen using the Shapiro-Wilk test, then independent T-test analysis to see if there was a difference in values.

Results

Validity and reliability tests were carried out before the questionnaires were distributed to students. The validity test was used to measure the accuracy of the questionnaire on the level of student satisfaction with PTMT activities at the Faculty of Medicine, University of Pasundan. Validation by looking at the correlation of item scores with the total score in Table 1.

Table 1
Questionnaire Validity Test

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected if Item-Total Correlation	Cronbach's Alpha if Item Deleted
Statement 1	29.90	8,989	.691	.932
Statement 2	30.20	8.178	.662	.935
Statement 3	30.10	8.322	.662	.934
Statement 4	30.10	8.322	.662	.934
Statement 5	30.10	7.878	.844	.922
Statement 6	29.90	8,989	.691	.932
Statement 7	30.00	8.000	.932	.917
Statement 8	30.00	8.000	.932	.917
Statement 9	30.10	7.878	.844	.922

Based on the validity test that can be seen in the corrected item total correlation column, the correlation value is above 0.3 from each statement so that it can be concluded that all statements on the variable are valid. Furthermore, a reliability test was conducted to determine the level of confidence in the results of a measurement. The reliability test table is depicted in table 2.

Table 2
Reliability Test using Cronbach's Alpha

Cronbach's Alpha	Cronbach's Alpha
0.935	0.935

In the reliability test table, the reliability results obtained using the Cronbach alpha technique. From the output above, it is known that Cronbach's alpha value is above 0.8 so it can be concluded that the questionnaire is good and reliable. Furthermore, this valid and reliable questionnaire was distributed to students. As much 145 active students of Medical Faculty Pasundan University who participated in limited face-to-face skills lab learning activities for the 2021/2022 academic year filled out a questionnaire. The research subjects consisted of level 1 students (class of 2021) as many as 53 students (36.55%), level 2 students (class of 2020) as many as 49 students (33.79%) and level 3 students (class of 2019) as many as 43 students (29.66%).

Table 3
Characteristics of Research Subjects(n=145)

level student	Number of respondents
1	53 students (36.55%)
2	49 students (33.79%)
3	43 students (29.66%).

Table 4
Results of Evaluation of Student Satisfaction Levels

No.	Statement Points	Respondent's Answer			
		Strongly Disagree	Don't agree	Agree	Strongly agree
1	The implementation of face-to-face education is very important	0 (0%)	2 (1.54%)	39 (30%)	89 (68.46%)
2	Preparations for holding limited face-to-face meetings are carried out in a planned manner	0 (0%)	4 (3.07%)	62 (47.70%)	64 (49.23%)
3	Preparation for the implementation of PTMT has prerequisites that are easy to do	0 (0%)	1 (0.77%)	54 (41.54%)	75 (57.69%)
4	Preparation for the implementation of PTMT has rational prerequisites	0 (0%)	2 (1.54%)	57 (43.85%)	71 (54.61%)
5	The material selected in face-to-face learning is material that requires direct practice or face-to-face meetings	0 (0%)	2 (1.54%)	40 (30.77%)	88 (67.69%)
6	By organizing face-to-face learning, it helps students understand the material being taught	0 (0%)	1 (0.77%)	35 (27.13%)	93 (72.09%)
7	Students will attend the next PTMT	0 (0%)	3 (2.32%)	46 (35.66%)	80 (62.01%)
8	Students are satisfied with the limited face-to-face meeting lab skills learning method	0 (0%)	0 (0%)	52 (40.62%)	76 (59.38%)
9	The facilities available when the PTMT skills lab are adequate	0 (0%)	0	50 (38.46%)	80 (61.54%)

Based on tabulated data, it was found that student responses to limited face-to-face lab skills learning activities at the Faculty of Medicine, Pasundan University, the majority responded strongly agree that was 61.64%, while the response agreed was 37.13%, disagreed 1.23% and strongly disagreed. 0%.

Data Normality Test

The OSCE value data was tested by the Shapiro-Wilk analysis to see the distribution shown in table 5 below,

Table 5
Normality Test

		Shapiro-Wilk		
		Statistics	df	Sig.
Score	Non-PTMT	0.945	14	0.486
	PTMT	0.957	22	0.437

Based on the normality test table, the Shapiro Wilk value was obtained with a significance > 0.05 . So it can be concluded that the data is normally distributed. Furthermore, the data can be analyzed for differences using parametric tests, namely independent t-test.

Independent T-test

This test was carried out to see whether there was a difference or not, the OSCE value between stations with PTMT activities and stations without PTMT activities. Following are the results of the independent t-test in table 6,

Table 6
Independent t-test results on OSCE scores and PTMT activities

Group	N	Average	SD	t	p
PTMT	22	77.91	7.75	-2,196	0.035
Non-PTMT	14	71.43	9.89		

The OSCE value in the PTMT group has an average of 77.91, above the average of the non-PTMT group, which is 71.43. The t-test result for the OSCE value was 2.196 with $p = 0.035$ ($p < 0.05$), so the mean OSCE value between PTMT and non-PTMT was significantly different.

Discussion

The results showed that as many as 98.77% of respondents at statement points 1-9 were satisfied with the limited face-to-face skills lab learning carried out by the Medical Faculty Pasundan University during the covid19 pandemic. The results of this level of satisfaction are different from the research on satisfaction of medical students conducted by Hardian in 2012 before the COVID-19 pandemic occurred, namely 75% of respondents were satisfied with the skills lab training provided in the final semester of the undergraduate medical education program.(Hardian, 2020). This result is also different from the research conducted by Ziaee, et al at the University of Tehran on clinical stage students consisting of outpatient, bedside teaching, and theory, showing that satisfaction with education at the clinical stage is only 38.8%.(Ziaee et al., 2004).

Statements related to the implementation of face-to-face learning to help students understand the material being taught were approved by more than half of the respondents who indicated that the skills lab material would be easier to understand if it was done offline. The results of this study also showed that the mean OSCE value between PTMT and non-PTMT was significantly different,

namely $p = 0.035$ ($p < 0.05$). These results are in line with the research of Khan, et al on medical students who showed that clinical examination performance was better and scores were higher in skills that were specially trained in skills lab training compared to theoretical training alone. Clinical skills will be easier to understand if students are trained in the skills lab (Khan et al., 2017). Research Atwa, et al stated that more than half of medical students (53.1%) preferred the face-to-face learning mode. Some of the reasons include that face-to-face learning on campus cannot be replaced for several types of education including skills lab, limited interaction in online sessions, technical problems during learning activities and during online exams. However, clinically oriented teaching aspects such as history taking and case discussions can still be done online so that blended learning can be applied in medicine. (Atwa et al., 2022; Singh et al., 2021).

It was found from the results of the study that as many as 98.46% of respondents thought that the implementation of face-to-face education on a limited basis was very important for students, this result has similarities with previous research conducted by Budiarjo & Hidayatullah in 2021 which stated that the majority of students majoring in Mechanical Engineering at the University The State of Surabaya feels helped by the limited face-to-face learning held during the covid19 pandemic (Budiarjo & Hidayatullah, 2021). The results of the study related to the presence of PTMT further showed that 97.67% of respondents would attend. This is in line with the results of research conducted by Gherhes, et al which showed that as many as 61.4% or more than half of the respondents thought that after the end of the COVID-19 pandemic, there was a desire to return to face-to-face learning. (Gherheş et al., 2021).

Supporting facilities in higher education facilities will affect the quality and achievement of student competencies (Lomis et al., 2021). The Lancet Commission focuses on three levels of medical education: informative which focuses on developing knowledge and skills; formative that focuses on developing the values of a professional; and transformative that focuses on preparing students to act as agents and leaders of change (Skochelak et al., 2021). All respondents considered that the facilities available when the face-to-face skills lab were limited were adequate. Supporting facilities in the skills lab that are adequate will support student competence and in the end can accelerate service capabilities in the health care system.

Conclusion

Students of Medical Faculty Pasundan University show a high level of satisfaction in terms of preparation, planning, lecturers and skills lab facilities for limited face-to-face skills lab learning that has been carried out so that in the future this skills lab activity needs to be carried out offline and routinely in order to improve the achievement of skill competencies clinic at the pre-clinical stage while still adhering to health protocols.

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