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Distance Learning on Paediatrics Clerkship: A New Experience for Medical Students at Universitas Tarumanagara

Wiyarni Pambudi[1], Herwanto[1], Fransiska Farah[1], Eko Kristanto[1], Melani Rahmi Mantu[1], Naomi Esthernita Fauzia Dewanto[1]

[1] *Department of Pediatrics, Faculty of Medicine, Universitas Tarumanagara*
[*] *Corresponding author: Email: wiyarni@fk.untar.ac.id*

ABSTRACT

The distance learning experience is a new norm on adaptive learning process for paediatrics clerkship due to the pandemic situation. This study was a cross-sectional survey of medical students who have participated in to rotation of the paediatrics clerkship from March 2020 until July 2021. The questionnaire data filled out by 247 of the 379 students participating in distance learning paediatrics clerkship. Face-to-face interaction is preferable learning method instead of online discussions (90.1%) with 156/247 students admit less than 4 hours of study time per day. Although 163/247 felt that they had no problems switching learning methods to online discussions and 175/247 felt that the distance learning process was quite easy to follow as expected, with 208/247 being able to achieve the learning targets, students with less than 4 hours of study time per day had a risk of 7.3 times could not achieve the learning target significantly (p=0.007), and students who were less active in discussing had a risk of 7.9 times failing to get a cognitive score of 70 (registrar rotation pass limit) significantly (p=0.000). Assessment of the achievement of learning targets, conformity of the schedule and the online program, the role of perceptive lecturers according to students participating in the distance learning paediatrics clerkship showed significant differences (p=0.031) between groups. Effective communication skills, working together in teams, and understanding patient management holistically are competencies that cannot be fully anticipated with the distance learning method, so they still have to be enriched with conventional clerkship rotations (bedside teaching).

Keywords: *Distance learning, Medical students, Paediatrics clerkship.*

1. INTRODUCTION

The first semester of the 2019/2020 academic year was a period of unprecedented adaptation of learning methods. Since WHO declared the COVID-19 pandemic on March 11, 2020, although the focus of medical practitioners is on patient care and community education for prevention, the COVID-19 pandemic has also 'disturbed' the educational process, including the implementation of clinical clerkships which are usually held in teaching hospitals. The need to prepare competent and alert doctors has never been as urgent as it is today, when we have to deal with global emergencies. The pandemic presents practical and logistical challenges as well as concerns for the safety of patients and medical personnel, while recognizing that students who participate in clinical clerkship rotations also have the potential to spread the virus even when they are asymptomatic and are at risk of contracting the virus during interactions in hospitals.

With the enactment of the Large-Scale Social Restrictions (*Pembatasan Sosial Berskala Besar* = PSBB) or lockdown policy, learning activities for undergraduate medical students (*Program Studi Sarjana Kedokteran* = PSSK) and medical professional study programs (*Program Studi Profesi Dokter* = PSPD) could not take place as planned. The implanted *'primum non nocere*' paradigm brings us to the reality that the COVID-19 pandemic must also be anticipated by medical education unit, by immediately changing conventional clerkship methods, adapting distance learning strategies (DLS), and simultaneously optimizing resources both from aspects of lecturers or clinicians as well as the readiness of students to continue to be able to undergo the clerkship period, and not to use the pandemic as a reason for delaying medical education.

Since the decision to implement the DLS, the Department of Pediatrics of the Faculty of Medicine, Universitas Tarumanagara has carried out an online clerkship rotation, which went smoothly with the support of faculty leaders and perceptive lecturers. This article aims to share the experience of implementing distance learning on Pediatrics clerkship at the Faculty of Medicine, Universitas Tarumanagara during the PSBB period from March 2020 to July 2021.

2. RESEARCH METHOD

The data presented in this article was obtained through an online survey of all Pediatrics Clerk's DLS students with a cross-sectional design for the period March 2020 until July 2021. The locations of respondents are spread across various cities/districts according to their domicile during the PSBB. The questionnaire link was submitted at the end of the Pediatrics clerk's rotation through the Whatsapp group, which is used as a medium for communication between students and lecturers. The descriptive data included in this article are presented in the form of narratives, tables, pictures, and a comparative analysis of the cognitive value acquisition data using paired t-test and Fisher's test with p-value is considered significant if <0.05.

The experiences explored through the questionnaire are the process of implementing the Pediatrics Clerk's DLS according to student assessments, the results of case review assessments, journal reviews, active discussion, the average cognitive value of students per DLS group, achievement of learning targets, conformity to the schedule and DLS programs, the role of perceptive lecturers, and skills. clinical and learning targets for the Pediatrics clerkship.

3. RESULTS AND DISCUSSION

Distance learning (DLS) of the Pediatrics clerkship began on March 18, 2020 and ended on July 24, 2021. The student clerkship (co-ass) was divided into 18 batches of each two-week rotations as scheduled by the Head of Study Program and the PSSD team. The size of the group for each rotation varies from 6 to 35 co-ass who are guided by 6 perceptive lecturers from the Department of Pediatrics, FK Untar. A total of 247 out of 379 (65.3%) students who have undergone Pediatrics's clerkships responded and completed the questionnaire (Table 1). Of the 18 DLS groups, the majority of co-ass in periods 7, 4, 9, 12, 17, and 1 (>80%) participated in the survey, while those who sent the least responses were co-ass for period 2 and 10 (<15%). During the implementation of the DLS, most of the students lived on the island of Java, namely DKI (35.9%), Central Java (16.8%), and West Java (11.4%). Eighteen (7.3%) co-ass chose to undergo DLS from their boarding house in Semarang. A quarter (25.9%) of students have family members (parents/brothers) who work in the health sector, as general practitioners (19%), specialist doctors (3%), and other health professions (4%).

Ninety percent of students prefer the face-to-face interaction method to online discussions as a learning tool for registrar (Figure 1a). During DLS, 154 (62.8%) students set aside less than 4 hours of study time per day (Figure 1b), although 165 (66.9%) admitted that they had no problems switching from face-to-face interaction to online discussion (Figure 1c). and 175 (70.7%) felt that the DLS process was quite easy to follow according to student expectations (Figure 1d).

Table 1. Characteristics of students

Criteria	n (%)
Number of students	247/379 (65.2%)
- Batch 1: 18-28 March 2020	5/6 (1.3%)
- Batch 2: 30 March-11 April 2020	4/30 (1.1%)
- Batch 3: 13-25 April 2020	20/35 (5.3%)
- Batch 4: 27 April-9 May 2020	30/35 (7.9%)
- Batch 5: 11-23 March 2020	24/30 (6.3%)
- Batch 6: 2-13 June 2020	15/20 (4.0%)
- Batch 7: 15-27 June 2020	11/11 (2.9%)
- Batch 8: 2-14 November 2020	13/20 (3.4%)
- Batch 9: 16-28 November 2020	17/20 (4.5%)
- Batch 10: 30 Nov-12 Dec 2020	3/21 (0.8%)
- Batch 11: 14-26 December 2020	11/20 (2.9%)
- Batch 12: 22 March-3 Apr 2021	16/19 (4.2%)
- Batch 13: 5-17 April 2021	16/20 (4.2%)
- Batch 14: 3-15 May 2021	14/19 (3.7%)
- Batch 15: 31 May-12 June 2021	9/19 (2.4%)
- Batch 16: 14-26 June 2021	12/19 (3.2%)
- Batch 17: 28 June-10 July 2021	15/18 (4.0%)
- Batch 18: 12-24 July 2021	12/17 (3.2%)
Gender:	
- Man	78 (71.6%)
- Woman	31 (28.4%)
Age (in years): mean (SD)	22,5 (1,3)
min-max	18.9-31.9
Years admitted to medical school:	
- 2012	3 (1.2%)
- 2013	5 (2.0%)
- 2014	17 (6.9%)
- 2015	49 (19.8%)
- 2016	173 (70.0%)
Place of residence/domicile:	
- DKI, Central Java, West Java, Banten, DIY, East Java	190 (76.9%)
- Jambi, Kepri, Lampung, Babel, Central Kalimantan, West Sumatra, South Sumatra	27 (10.9%)
- East Kalimantan, Bali, North Sulawesi, South Sulawesi, Southeast Sulawesi, Central Sulawesi	3 (1.2%)
- Papua	27 (10.9%)
Family members working in the health sector:	
- General practitioners, specialists, other medical personnel	64 (25.9%)
- No family members of health workers	183 (74.1%)

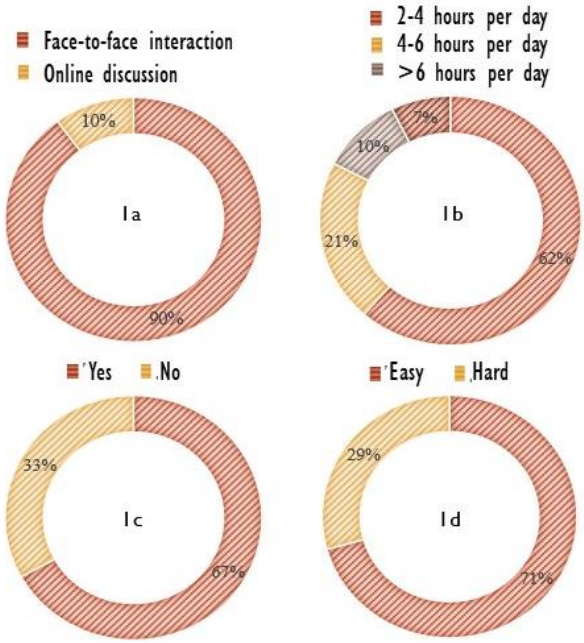

Figure 1. The process of implementing the Pediatrics Clerk's DLS according to student assessments

In each rotation of the Pediatrics Clerk's DLS, an online discussion program that is scheduled every day with a different topic has been designed. Each co-ass received two tasks in the form of a case review (clinical review) in the form of a virtual case discussion, a review of a medical paper (critical appraisal) of a medical paper with a topic selected according to competence in the competency standard (*Standar Kompetensi Dokter Indonesia* = SKDI), daily guided by a pediatric perceptor lecturer. Active discussion is also a consideration for students' cognitive values. The percentages of case reviews, journal reviews, and activities were calculated at 50%, 30%, and 20%. Of the total 247 participants in the Pediatrics Clerk's DLS, more than half (54.5%) obtained a final grade of A, with a mean cognitive score of 79.4 (SD 5.2), a minimum score of 71.6 and a maximum of 90.6. The scores of case reviews, journal studies, discussion activities and cognitive scores between groups showed results that were not significantly different (Figure 2).

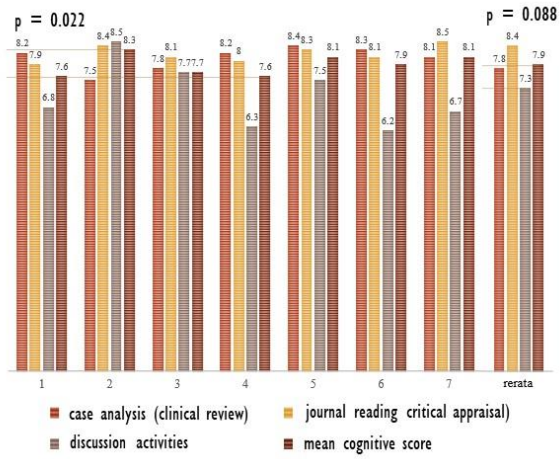

Figure 2. The results of the case review assessment, journal review, active discussion, and the average cognitive score of students per group of Pediatrics Clerk's DLS

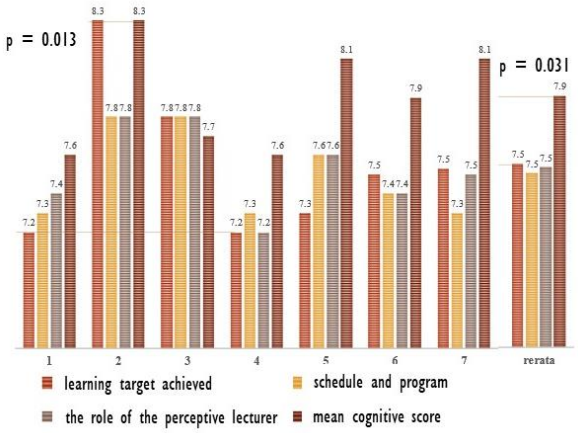

Figure 3. Achievement of learning targets, conformity with DLS schedules and programs, role of perceptive lecturers and the mean and average cognitive scores of students per group DLS Pediatrics clerks

Based on the results of the questionnaire after attending the Pediatrics Clerk's DLS, 208 (84.5%) students assessed that the learning targets had been achieved well through the online discussion method. However, in the test of the relationship between the length of study time per day and the achievement of learning targets, it was found that students with less than 4 hours of study time per day had a 7.3 times risk of not being able to achieve learning targets significantly (PR 7.3; p-value 0.007). Likewise, the results of the relationship test showed that students who were less active in discussing had a 7.9 times risk of failing to get a cognitive score of 70 (registrar's rotation graduation limit) significantly (PR 7.9; p-value 0.000).

Assessment of the achievement of learning targets, the suitability of the schedule and the DLS program, the role of the perceptive lecturer according to the students participating in the Pediatrics Clerk's DLS showed significant differences (p value 0.031) between groups (Figure 3).

Input from students participating in the Pediatrics Clerk's DLS includes 3 things: the strengths and weaknesses of the DLS method, as well as the form of support expected during the DLS. The advantages of the DLS method that can be recommended to be continued at the next Pediatrics registrar include: discussion time is more flexible because it is adjusted to the perceptor lecturer's time, case discussions and journals are more focused and effective because lecturers always provide related references that can be studied simultaneously during discussions. Another advantage of the DLS method, which does not need to be continued is the arrangement of co-ass in large groups because although there are no problems in the division of tasks and assessments, the in-depth discussion process is more effectively carried out in smaller groups (8-12 people). The weaknesses of the DLS method that are felt by students are difficulty imagining virtual cases and distractions/attention distractions during online discussions. The support expected by most students is smooth internet access and references in the form of electronic books/journals, which have been accommodated by the faculty in the form of internet fee assistance and the distribution of electronic booklets from the medical faculty library collection.

Even though students claimed to have achieved the learning targets for Pediatrics clerkship, the results of the questionnaire still showed basic and advanced clinical skills that

could not be fully anticipated with the DLS method (Table 2). Effective communication skills, working together in teams, and holistic understanding of patient management are competencies that still need to be enriched by conventional clerkship rotations (bedsite teaching).

Table 2. Clinical skills and learning targets for Pediatrics clerkships that have not been fully anticipated through the DLS method

Online clerkship experience	n	(%)
Unattained basic clinical skills:		
- Communicate effectively	72	(29.1%)
- Interpretation of physical examination	43	(17.4%)
- Discussion of critical review of medical papers	35	(14.2%)
- Understanding of medical journals	27	(10.9%)
- Interpretation of supporting examination	25	(10.1%)
- Interpretation of history	22	(8.9%)
- Case report writing	15	(6.1%)
- Short case presentation & discussion	8	(3.2%)
Unattained advanced clinical skills:		
- Work together in a team	47	(19.0%)
- Analyze patient management plans based on critical reasoning	37	(15.0%)
- Planning a focused/focused history	36	(14.6%)
- Planning a targeted physical examination	35	(14.2%)
- Analyze differential diagnosis based on critical reasoning	35	(14.2%)
- Responding to feedback from the perceiver	32	(13.0%)
- Planning targeted follow-up examinations	25	(10.1%)
Pediatrics clerkship learning targets that still need enrichment:		
- Holistic understanding of patient management	72	(29.1%)
- Mastery of clinical skills	47	(19.0%)
- Understanding of teamwork in charge of the patient	35	(14.2%)
- Mastery of diagnosis procedures (anamnesis-examination)	32	(13.0%)
- Mastery of medical problems from real cases	27	(10.9%)
- Mastery of relevant and up-to-date EBM references	19	(7.7%)
- Providing constructive feedback from the perceiver	15	(6.1%)

4. CONCLUSIONS AND SUGGESTIONS

The Pediatrics Clerk's distance learing strategy which was carried out from March 2020 to July 2021 as an adaptive policy of the Faculty of Medicine Universitas Tarumanagara during pandemic. was a unique and unprecedented learning experience. Thanks to the support of the faculty and the commitment of the perceptive lecturers. as well as the good cooperation of the students. 84.5%) of the learning targets can be achieved through the online discussion method. The length of study time and active discussion are the determinants of the success of the student clerks in achieving the learning and graduation targets ($p < 0.05$). The advantages of the DLS method can be considered to be continued. while the weaknesses will be completed when the rotation of the clerks in the teaching hospital vehicle is held again.

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