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# OPTIMIZATION OF PERIODONSIA CLINICAL LEARNING AT DENTISTRY PROFESSIONAL STUDENTS DURING COVID-19 PANDEMIC

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**Abstract**

***Background:*** *The COVID-19 pandemic has made periodonsia clinical learning in dentistry professional students of Jenderal Soedirman University become less optimal because it was implemented by online according to government directions. Optimization of periodonsia clinical learning needs to be done so that learning outcomes can still be achieved even in limited conditions due to the COVID-19 pandemic.* ***Objectives :*** *To determine the effectiveness of optimization periodonsia clinical learning which is implemented online.* ***Methods****: This reserach is a quasi experimental with a pretest posttest research design. The participants in this research were dentistry professional students which amounted to 18 people. The pretest and posttest scores were analyzed using the Shapiro-Wilk test and Wilcoxon signed ranks.* ***Results****: The optimization periodonsia clinical learning program consists of 4 activities which include: (1) Explanation clinical periodonsia learning modules, (2) Explanation SOP for clinical periodonsia procedures, (3) Video presentation of clinical periodonsia procedures, (4) Implementation of case studies regarding the clinical periodonsia procedures. The mean pretest score was 47.72 and the mean posttest score was 98.44. The data showed an increase in the value of 106.28%.* ***Conclusion****: The optimization of periodonsia clinical learning program is effective in helping dentistry professional students Jenderal Soedirman University during the online learning process.*

**Keywords:** Periodonsia Clinical Learning *;* Dentistry Professional Students ; COVID-19 pandemic

## INTRODUCTION

Dentist profession is a noble task for human life in the health sector, especially dental and oral health. Dentists must have academic competence and professional competence obtained through undergraduate dentistry education and dental professional education, so that after completing education they will have the ability to practice according to their expertise, be professional, and always equip themselves with knowledge and skills in accordance with developments era.[1]

Periodonsia is a field of dentistry that studies tooth support structures which include the gingiva, periodontal ligament, cementum and alveolar bone. Clinical knowledge and skills in the field of periodonsia are needed to obtain dentist graduates who have competence and clinical skills in the field of periodonsia, with a holistic and humanistic approach to patients, accompanied by a high foundation of professionalism and always based on ethical considerations.[2]

The period of the COVID-19 pandemic has made periodonsia clinical learning in dentistry professional students of Jenderal Soedirman University become less optimal because the learning system had to be implemented online according to government directions. Therefore, we created a optimization periodonsia clinical learning program which consists of several activities in order to support the learning process which is implemented online.

## RESEARCH METHODS

This research is a quasi experimental research. The research design is pretest posttest design, where the research is carried out in one group of research subjects. The measurements are taken before and after treatment on the research subjects. This


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research was conducted by online in April 2020 using the *Google Meet* application.

The dentistry professional students of Jenderal Soedirman University who were involved in this research were 18 students of the 16th batch Coass. This batch is a first-level of dentistry professional student who has just graduated from completing the undergraduate level of dentistry.

Dentistry professional students of Jenderal Soedirman University are asked to do a pretest before participating in periodonsia clinical learning and do a posttest at the end of the periodosia clinical learning phase. Pretest and posttest questions are done online using the application *Google Form.*

Data analysis was performed using software for data analysis. The test was carried out in the form of a data normality test followed by a comparison test. This test is carried out to describe the object that has been researched based on the data obtained, without conducting analysis, and making conclusions in the form of a general description

## RESULTS AND DISCUSSION

The optimization of periodonsia clinical learning program consists of 4 activities which include:
(1) Explanation of the clinical periodonsia learning modules,
(2) Explanation of SOP for clinical periodonsia procedures,
(3) Video presentation of clinical periodonsia procedures,
(4) Implementation of a case study regarding clinical periodonsia procedures.

These four activities are carried out by online using the *Google Meet* application and aim to help dentistry professional students Jenderal Soedirman University to better understand the field of periodonsia. This online method of learning dentistry was also carried out in several countries during the COVID-19 pandemic.[3–5]

The clinical periodonsia learning module consists of 3 chapters, namely clinical examination, diagnosis and treatment plan. The contents of the module in the clinical examination chapter refer to the meeting of the results of the perception equation in the field of periodontia. The contents of the module in the diagnosis chapter refer to the classification of periodontal diseases according to the 1999 AAP. The contents of the module in the treatment plan chapter are adjusted to the cases / requirements of dentistry professional students Jenderal Soedirman University.[6]

Standard Operating Procedures (SOP) for clinical periodonsia that have been made follow the guidelines set by Rumah Sakit Gigi dan Mulut Jenderal Soedirman University. The SOP made include: SOP for clinical examination procedures, SOP for manual scaling procedures, SOP for USS scaling procedures, SOP for curettage procedures, SOP for desensitization procedures, SOP for gingivectomy procedures and SOP for splinting procedures. All of these SOPs were socialized and explained to dentistry professional students Jenderal Soedirman University as a reference when clinical learning could be carried out offline.

The video of clinical periodonsia procedures is adjusted to the requirements of dentistry professional students of Jenderal Soedirman University. The videos made include: clinical examination procedure video, manual scaling procedure video, USS scaling procedure video, curettage procedure video, desensitization procedure video, gingivectomy procedure video, and splinting procedure video. The production of this video is intended in order that the students of the dentistry profession of Jenderal Soedirman University can find out the complete procedure of clinical action in the field of periodonsia, so that later it can be applied when clinical learning is


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carried out by offline. Learning method innovations such as making videos have also been carried out in several countries as stated in the research conducted by Chang T et al (2020).[7]

The implementation of a case study is an effort to increase the learning interest of dentistry professional students of Jenderal Soedirman University regarding cases in the field of clinical periodonsia. The case used as a case study material is the case of "Free Gingival Graft with Splinting". The students are very enthusiastic about this learning method because they can discuss and express opinions so that they can better understand the case being discussed. This result is in line with the research of Hattar, S et al (2020) which states that students prefer discussion forums during online learning during the COVID-19 pandemic.[8]

Hung, M et al (2020) stated different things. The results of his research illustrate that students experience high levels of stress with online learning methods, but students must be willing and able to adapt to this condition.[9]

The result of the pretest score of the dentistry professional students Jenderal Soedirman University was 26 for the lowest score and the highest pretest score was 73.The lowest posttest score was 93 and the highest posttest score was 100.The results can be seen in table 1 and figure 1.

Table 1. Score of Pretest and Posttest

| No. | Score | Pretest | Posttest |
|---|---|---|---|
| 1 | Lowest Score | 26 | 93 |
| 2 | Highest Score | 73 | 100 |

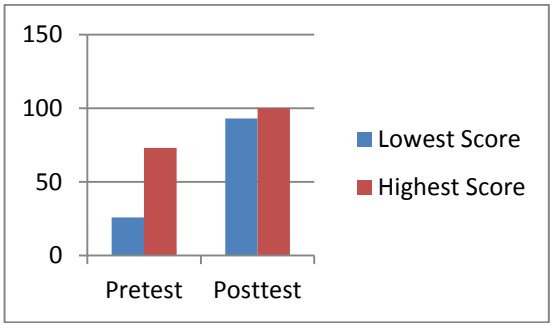


Figure 1. Score of Pretest and Posttest

The mean pretest score was 47.72 and the mean posttest score was 98.44 as seen in figure 2. The data from the pretest and posttest results were then analyzed using the normality test before the comparison test was carried out.

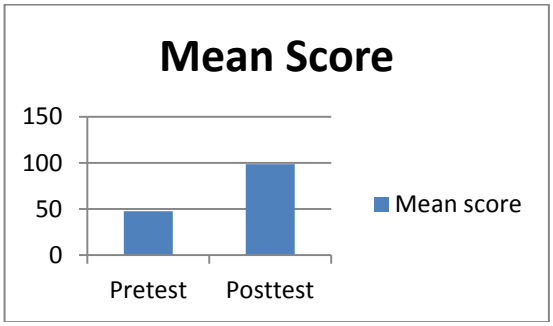


Figure 2. The mean score of Pretest and Posttest

The normality test using the *Shapiro-Wilk* test (sample <50) shows that the significance value of the pretest and posttest data is 0.588 and 0.000. The results of the normality test showed that the data were not normally distributed, then the data was transformed, but the data was still not normally distributed, so a comparison test was carried out using a non-parametric test in the form of *Wilcoxon signed ranks.* Test results *Wilcoxon signed ranks* can be seen in table 2.


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Table 2. The results of the *Wilcoxon signed ranks test*

| No. | Score | Mean Score | P value |
|---|---|---|---|
| 1 | Pretest | 47.72 | 0,000 |
| 2 | Posttest | 98.44 | |

The table shows that the pretest mean score was 47.72 and the posttest mean score was 98.44. The mean of the results of the pretest and posttest scores, an increase was obtained with the following calculations:

$$\text{Increase} = \frac{98{,}44-47{,}72}{47{,}72} \times 100\%$$
$$= 106{,}28\%$$

From these data, it can be seen that there is an increase in the mean value of 106.28%. These results also indicate that there is a significant difference between the pretest and posttest results with a significance value of 0.000 (p <0.05).

Pretest and posttest assessments were carried out by online using the application *Google Form.* This online assessment method is also considered effective by Machado et al (2020).[10]

Research by Quinn, B et al (2020) states different things. The results of the research revealed that as many as <50% of research subjects stated that online assessments were less valid. They prefer to do the assessment directly.[11]

The optimization of periodonsia clinical learning program which was held in April 2020 received a positive response from dentistry professional students Jenderal Soedirman University and clinical supervisors. This program is expected to continue even though later the COVID-19 pandemic conditions have disappeared and the clinical learning process can be carried out by offline. The response can be seen in this figure below.

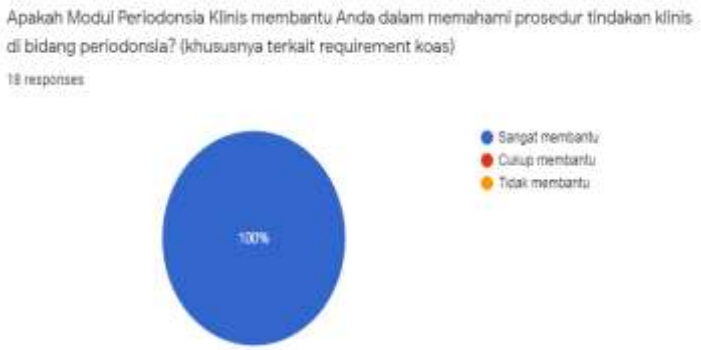


Figure 3. Response of the clinical periodonsia learning modules


Figure 4. Response of SOP for clinical periodonsia procedures


Figure 5. Response of video presentation of clinical periodonsia procedures


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Figure 6. Response of implementation case study

## CONCLUSION

The optimization of periodonsia clinical learning program can effectively help dentistry professional students of Jenderal Soedirman University to understand the field of clinical periodonsia during the learning process carried out online.

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3. Rumah Sakit Gigi dan Mulut Jenderal Soedirman University.

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