



Education on Malocclusion and Orthodontic Treatment to Increase Students' Awareness of Dental Health Through Pre-Test and Post-Test Methods at SMPN 2 Probolinggo City

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Abstract: *The level of public awareness of dental and oral health is still quite low, so the level prevalence of dental and oral health problems in Indonesia is still high. One of the dental and oral health problems that many people didn't understand is malocclusion, malocclusion is about abnormalities in the position of the teeth and jaw. Malocclusion can affect the quality of life because it can interfere physically and psychologically. This lecture activity aims to increase the knowledge of students and the school community about malocclusion and orthodontic treatment which is evaluated using pretest and posttest methods for students at SMPN 2 Probolinggo City. Each class is divided into small groups to receive counseling. Before the counseling is carried out, each student is given a pretest sheet which aims to measure how much the student understands about malocclusion and orthodontic treatment. And next, malocclusion cases are examined using the ICON Index (Index of Complexity, Outcome, and Need) and then students are given counseling about malocclusion and orthodontic treatment. At the end, students were given another posttest sheet which aimed to evaluate how well the students were able to absorb and understand information about malocclusion and orthodontic treatment. Based on the total score obtained, it can be determined that the level of understanding and to absorb/receive information of the counseling for female students is better than for male students. This can be seen from the total population, the percentage of female students is 39.34% who can receive the information very well, 6.23% of female students who have not been able to absorb/receive the counseling information, 8.52% of female students have no change in understanding (get the same point for pretest and posttest), and 0, 66% of female students understood from the start about malocclusion and orthodontic treatment. Meanwhile, 23.93% of male students were able to absorb/receive the information very well, 8.85% of male students were not able to absorb/receive the information well, and 9.84% of male students had no change in their understanding*

of malocclusion and 2.62% of male students understood from the start about malocclusion and orthodontic treatment. From the results of the data above, it can show the level of understanding and is expected to provide an initial overview of counseling methods for adolescent subjects.

Keywords - Education, Malocclusion, Orthodontic, Probolinggo

I. INTRODUCTION

The prevalence of malocclusion in Indonesia is still high, namely around 80% and is one of the third largest dental and oral health problems after dental caries and periodontal disease. Epidemiological data on the prevalence of malocclusion is important for determining appropriate orthodontic treatment plans⁽¹⁾. Based on the 2013 National Basic Health Research (Riskeddas) report, the prevalence of dental and oral problems in Indonesia is 25.9% and 14 provinces have a prevalence of dental and oral health problems above the national figure. One of them is crowded teeth, which is usually the size of the teeth larger than the size of the jaw⁽²⁾. The World Health Organization (WHO) states that malocclusion is an anomaly that causes damage or obstruction to the function of the occlusion, which requires treatment if the anomaly affects the physical condition and emotional (psychological) state of the patient. The prevalence of malocclusion and its association with orthodontic treatment in children is quite high, this is proven based on the results of measurements carried out by WHO in 1995 in 10 industrialized countries with a percentage reaching 21-64%⁽³⁾. The clinical features of malocclusion include crowded teeth, gapped teeth, crooked teeth and an overbite. The occurrence of malocclusion can be caused by genetic factors or environmental factors⁽⁴⁾. Malocclusion can affect the quality of life because it interferes with the sufferer's daily activities both physically and psychologically. Physically, teeth that are irregularly arranged are certainly more difficult to brush than those that are neatly arranged. There is an accumulation of food residue between the teeth which can trigger caries. Inadequate teeth cleaning also causes a buildup of plaque and tartar so that the gums bleed easily⁽⁵⁾.

According to Moyers, quoted by Suminy and Zen (2007), factors that cause malocclusion include bad habits (finger sucking, mouth breathing), hereditary factors, and trauma factors, for example accidents involving the face and jaw. Some individuals complain of disorders such as mastication, swallowing and speaking due to malocclusion. Patients or individuals who experience cases of malocclusion, namely facial abnormalities and dentofacial abnormalities, require orthodontic treatment^(6,7).

In dentistry there is a further education program with a title as an orthodontic specialist, where these orthodontic specialist dentists have competence in treating cases of malocclusion with orthodontic treatment, which are accommodated in one professional organization which is usually called IKORTI, orthodontists also try to help and provide solutions on dental and oral problems that occur in society. Community service activities are a form of dedication of IKORTI members to the community to improve health levels both individually and in the wider environment. Community service was carried out in May 2023 at SMPN 2 Probolinggo City by members of IKORTI in the East Java region. This activity aims to increase knowledge about dental and oral health, especially regarding malocclusion, as well as prevention and treatment that can be carried out against the occurrence of malocclusion. Apart from that, direct examinations were carried out to get an idea of malocclusion cases that occurred in school students and the level of need for orthodontic treatment. Counseling was also carried out by providing material related to malocclusion. Where, before and after being given the material, students are given pre-test and post-test sheets. The pre-test is given with the aim of finding out the level of students' understanding of malocclusion and orthodontic treatment before being given the material, and the post-test is given to evaluate how well the students understand the level of the material that has been given. Through this activity, it is hoped that students and the school community can increase the knowledge of maintaining dental and oral health, can take preventive measures against the occurrence of malocclusion, and understand the efforts that can be taken if they experience or encounter a case of malocclusion in their environment.

II. METHOD

This community service activity begins with a preparation stage, namely conducting a survey to obtain information to set targets in accordance with the objectives of the activity. This activity coordinates and collaborates with the PDGI organization (Indonesian Dentists Association) and the Probolinggo City Health Service as the destination area. The information extracted includes school identification, geographical description and social conditions in the school environment and the surrounding community.

Community service by members of IKORTI in the East Java region was held on Saturday, May 20 2023 at SMPN 2 Probolinggo City with the target or subjects being grade 7 and grade 8 students. Each class was divided into several small groups consisting of 6-8 students. Each group received counseling delivered using flip chart media with material entitled "Getting to Know More About Orthodontic Treatment" (Figure 1-3). Participants were given the opportunity to ask questions and discuss dental and oral health.



Figure 1. Opening ceremony with the chairman of PDGI, head of the Probolinggo health office, principal of SMPN 2 Probolinggo and chairman of IKORTI East Java



Figure 2. Flip Chart as Education Material at SMPN 2 Probolinggo



Figure 3. Education activity

The next series of activities is giving pre-test questions to measure how much the students understand about malocclusion and orthodontic treatment. This data can also be used as a sample of how high the knowledge and level of awareness is not only of students but also of the family environment. Then proceed with providing educational material explaining malocclusion and orthodontic treatment. And at the end of the session, to evaluate the level of student absorption of the material that has been presented, students are given a post test.

From the results of the pre-test and post-test data, student data will be obtained in several categories, the first group is the group that experiences improved understanding after being given counseling material, the second group is the group where there is no change in understanding, the third group is the group that is even less understand malocclusion and orthodontic treatment, and the last group is the group whose understanding from the start and after counseling remains the same.

III. RESULT AND DISCUSSION

This community service activity was carried out on May 20 2023, located at SMPN 2 Probolinggo, targeting students in grades 7 and 8. This community service activity is expected to be able to increase knowledge and awareness of malocclusion and orthodontic treatment among students to improve the level of dental and oral health, apart from that, With this activity, students who aspire to become TNI/Polri and have problems related to malocclusion, can prepare themselves because malocclusion treatment takes quite a long time. So it is hoped that when students take the TNI/Polri test, the problem of malocclusion has been resolved. Apart from that, at the age of grade 7 and grade 8, students are generally in the mixed dentition phase and it is hoped that the newly erupted permanent teeth will still be in good condition. By increasing awareness of dental and oral health, it is hoped that students will be able to keep their teeth healthy until old age. In this community service activity, one class is divided into 4 small groups with the hope that the delivery of the material will be well received. It is also hoped that the division into small groups will make students more relaxed in carrying out questions and answers and consultations about malocclusion and orthodontic treatment. Counseling is carried out using flip chart media which also contains examples of pictures about malocclusion.

From the results of the pre-test and post-test, the results were obtained from a total population of 305 students consisting of 138 male students and 167 female students. It was found that 23.93% of male students were able to receive the material well, while 39.34 % of female students who can receive counseling materials well. Meanwhile, 8.85% of male students and 6.23% of female students did not absorb the counseling material well.

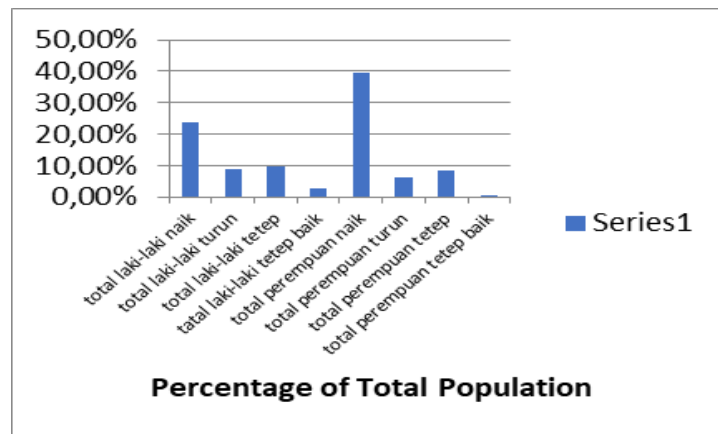


Figure 4. Percentage of Total Population

If the percentage is based on men and women, the data obtained is that 73 students (52.90%) were male students who were able to understand the counseling material well, and 27 students (19.60%) were male students who did not understand the material. counseling, as many as 30 students (21.74%) were male students who did not experience changes in understanding, and as many as 8 students (5.79%) were male students who still had good understanding. This was shown by the pre-test and post-test scores. all tests are still correct.

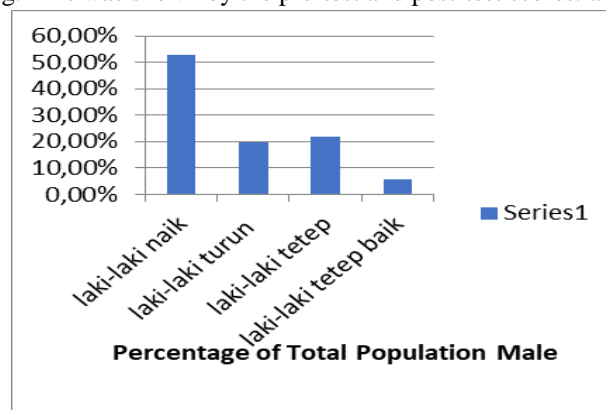


Figure 5. Percentage of Total Population Male

Meanwhile, in the female student group, data was obtained as many as 120 female students (71.90%) who were able to receive the material well, as many as 19 students (11.40%) of the female students who were still not able to receive the material well, as many as 26 students. (15.57%) of female students who did not experience changes in their understanding of the material and 2 students (1.19%) of female students whose understanding remained good, as shown by the pre-test and post-test results which remained perfect.

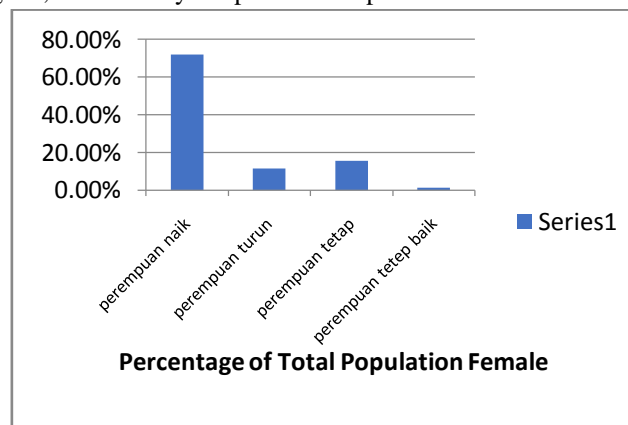


Figure 6. Percentage of Total Population Female

To measure students' level of knowledge, the assessment uses a scale four, with the following criteria from Arikunto (1993: 196)⁽⁸⁾:

Table 1. Knowledge Level Categories, Source: Arikunto (1993: 196)

Category Level Knowledge	Percentage Score Correct
High	76%-100 %
Sufficient	56%-75 %
Low	40% - 55%
Very Low	< 40 %

Based on the category table above, if we look at the gender group, it is found that male students have a low level of knowledge because only 52.90% understand orthodontic treatment and malocclusion. Meanwhile, the female student group has sufficient knowledge category with an understanding percentage of 71.90%.

According to Notoatmodjo (2012), dental and oral health education is an effort to impart messages about dental health to the community, groups or individuals in the hope that they can gain this knowledge and influence changes in their behavior⁽⁹⁾. Based on Blum's theory, the dental and oral health status of a person or community is influenced by four important factors, namely heredity, environment (physical and socio-cultural), behavior and health services. Based on these four factors, behavior plays an important role in influencing dental and oral health status⁽¹⁰⁾.

Factors that Influence Counseling:

According to Wijayanti (2014), the success of health education can be influenced by⁽¹¹⁾ :

1) Extension factors

For example, lack of preparation, lack of mastery of the material to be presented, appearance that does not convince the target, the language used is not understandable to the target, the voice is too small and cannot be heard, and the delivery of the counseling material is too monotonous so it is boring.

2) Target factors

For example, the level of education is too low so it is difficult to receive the message conveyed, the socio-economic level is too low so one does not really pay attention to the messages conveyed because one is more concerned about more urgent needs, beliefs and customs that have been ingrained so that it is difficult to change them, the environmental conditions in which the target lives. which makes it impossible to change behavior.

3) Process factors in extension

For example, the extension time does not match the time desired by the target, the location of the extension is close to a crowd so that it interferes with the counseling process being carried out, the number of counseling targets is too large, there are not enough teaching aids, the method used is not appropriate so the target is bored, and the language used is not understandable. by target.

There are **two types of methods for providing oral health education**, namely:

1) *One way method*

This method emphasizes active educators, while the target party is not given the opportunity to be active. One example of a one way method is the lecture method. Lectures are a way of presenting information by instructors by narrating or verbal explanations directly to listeners or targets. The lecture method can be done with or without tools. Some examples of tools that can be used are posters, Power Point, character dolls and picture story books. The lecture method can be used if the learning objectives to be achieved relate to the cognitive domain. The advantages of using the lecture method include, it does not require a lot of teaching aids, it is cheap and easy to use, and the time required can be controlled by the instructor, while the disadvantages of using the lecture method include, among other things, it can lead to less active habits in searching for and managing information, and not all The targets have the same grasping power, which often leads to misunderstandings in interpreting the counseling material provided⁽¹²⁾.

2) *Two way method*

The two way method guarantees two-way communication between educators and targets, according to Herijulianti (2002), which includes⁽¹³⁾:

a) *Demonstration*

Demonstration is a way of presenting learning/counseling materials by directly demonstrating how to do something or demonstrating a process. The advantage of the demonstration method is that the target's process of receiving the counseling material will be more impressive in depth so that they gain a better understanding, especially if the participants can actively participate in the demonstration. The disadvantage of the demonstration method is that if the tool being demonstrated cannot be observed properly because the size of the tool is too small, this will result in the demonstration process being visible to only a few people close to the speaker.

b) Simulation

Simulation comes from the word Simulate which means "pretend". Simulation is an extension method where instructors can carry out teaching and learning activities that are oriented towards understanding actualization and practical skills. The simulation method aims to enable a person to behave like another person, with the aim that the person can learn more deeply about how that person feels and does things.

c) Role playing

Role playing is a counseling method in which the target must play one or several specific roles. The advantage of this method is that most participants can actively observe, experience and appreciate certain behavior so that the counseling material can be more easily understood and comprehended. The disadvantage of this method is that sometimes the participants are not able to perform their roles properly.

d) Question and answer

The question and answer method is a learning interaction process that contains questions asked and answers to certain learning topics. The advantage of this method is that all parties involved have the opportunity to express opinions. The disadvantage of this method is that there can be protracted differences of opinion so that it will require a longer counseling time.

IV. CONCLUSION

The results of examining the condition of the teeth and mouth show that the majority of students at SMPN 2 Probolinggo City are still able to receive the counseling material well, although the percentage score that cannot absorb the counseling material is low, namely 19.60% for male students and 11.40% for female students, but it is still necessary to provide counseling using other methods to increase the percentage of students' level of understanding. Although it cannot yet represent a broader picture, it is hoped that the examination results obtained can provide an initial picture of the level of understanding and ability to comprehend orthodontic material in adolescent subjects.

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