

Research Report

## Dental Health Status and Knowledge Improvement After Dental Health Empowerment at Elementary School Student in Gresik, East Java

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### ABSTRACT

**Background:** Dental caries is the most common dental and oral health condition. Children's growth and development may be hampered by dental cavities. Furthermore, it may raise the risk of stunting owing to a lack of dietary intake, which may have an impact on quality of life. Oral and dental health empowerment is required to increase dental health knowledge and understanding of dental disorders, particularly during the corona virus disease-19 (COVID-19) pandemic. **Purpose:** to describe oral and dental health knowledge improved following dental health empowerment at Madrasah Ibtidaiyah Miftahul Ulum Elementary School in Melirang, Bungah Distric, Gresik City, East Java. **Methods:** Three surveyors were responsible for data collecting. This study's sample size was 150 people ranging from fourth to sixth grade. The seminar covered dental and oral health and was provided via teledentistry. The participants were asked to fill out a Google form for the pre- and post-test to determine the improvement of oral and dental health knowledge for the dental health empowerment evaluation. **Results:** The majority of oral and dental health participants understood the presentation on oral and dental health empowerment. The post-test percentage was higher (93.59%) than the pre-test rate (56.81%). **Conclusion:** The program findings demonstrated that oral and dental health empowerment via teledentistry was an effective medium for increasing elementary school children's understanding of dental and oral health status.

**Keywords:** Stunting; Caries; Oral Health; Infectious disease; Knowledge

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### INTRODUCTION

Continuing the previous year's Community Service activities at Madrasah Ibtidaiyah Miftahul Ulum Melirang, which is located in Melirang Village, Bungah District, Gresik Regency, East Java. This school is located outside of Gresik's regency center. This school has around 200 pupils. Second, this school serves as the sub-primary district's education hub. Student health also contributes to the proper operation of the educational process, and data on these students' dental and oral health can be utilized as a reference for evaluation. Dental and oral health facilities are close by a supporting health center; however, the infrastructure facilities are not optimal, so it needs to be evaluated further on the students' understanding of stunting, healthy and clean-living behavior, and maintaining oral hygiene and dental health knowledge to improve the quality of health for the students in particular and the surrounding community in general.

Indonesia is now engaged in a battle against the corona virus disease (COVID-19) epidemic.<sup>1,2</sup> At the same time, Indonesia is still grappling with the problem of malnutrition,

particularly stunting, which is expected to worsen as a result of the COVID-19 outbreak.<sup>3</sup> According to 2017 statistics from the National Team for the Acceleration of Poverty Reduction (TNP2K), Indonesia ranks sixth in the world in terms of stunting prevalence. Indonesia is home to 9 million of the world's 159 million stunted children.<sup>4-6</sup>

According to the 2019 results of the Indonesian Toddler Nutrition Status Survey (SSGBI), the prevalence of stunting reached 27.67 percent. This indicates that three out of every ten Indonesian children are stunted. This amount is also higher than the 20 percent limit set by the World Health Organization.<sup>7,8</sup> Stunting is a disorder characterized by chronically low nutritional status at a key time of child development, resulting in a kid's height that is not proportional to the child's age.<sup>9</sup> Stunting is regarded as a major indication of child wellbeing and socioeconomic situations. Stunting in children can have a negative impact on their mental health and development, as well as their productivity and intellectual capacity. Stunting was discovered to have a substantial relationship with a variety of dental health issues.<sup>10</sup>

Dental and oral health are the gateways to full body and mental wellness. The behavior and knowledge of the community to preserve and maintain dental and oral health is one of the variables that impact the community's dental and oral health status index. Good conduct is shown in basic understanding of dental and oral health needs carried out in daily life. As a result, it is crucial to teach the population, particularly rural areas, the fundamentals of dental and oral health requirements in order for them to modify their behavior and comprehend how critical it is to preserve oral health. Dental and oral health are inextricably linked to whole bodily health and cannot be separated.<sup>11,12</sup>

Caries is an oral cavity illness that is still a major issue in poor or developing nations, including Indonesia. The findings revealed that 90 percent of Indonesian children have caries. This statistic is considered to be higher in the suburbs than in cities, and it is higher for children from the lower middle class.<sup>13,14</sup> Caries is a disease of the teeth's hard tissues, specifically the enamel, dentin, and cementum. This process begins on the tooth's surface and progresses into the tooth layer, followed by the breakdown of organic substances. Bacterial invasion can continue to expand and harm pulp and periapical tissue, causing discomfort. Caries is a multifactorial illness, which means that it is caused by a number of interacting variables.<sup>15</sup>

Caries is also thought to be one of the major oral cavity difficulties experienced by kids, parents, and instructors at Madrasah Ibtidaiyah Miftahul Ulum Melirang, Melirang Village, Bungah District, Gresik Regency, East Java. Dental and oral illnesses, particularly caries, have a negative impact on a person's health. Caries effect is that a person's performance and activities are disrupted as a result of toothache, which plainly affects performance or learning attainment.<sup>16</sup>

Environmental factors, behavior, and health services can all impact the underlying reason of the poor level of community oral health. In order to address these issues, all communities, particularly children, parents, and guardians of students, must be educated as early as possible about the necessity of maintaining good dental health. To attain this aim, a long-term, comprehensive, and egalitarian effort is required, so that the advantages are felt by people at all levels of society. Efforts to promote health would be futile unless they are complemented by active engagement in society.<sup>17</sup>

The issue discovered in the Madrasah Ibtidaiyah Miftahul Ulum Melirang school in Bungah District, Gresik Regency, is a lack of knowledge / awareness of the significance of dental and oral health and hygiene. Second, there is a high prevalence of caries among instructors and students, and the third reason is that Melirang village, Bungah district, Gresik regency is classified as a limestone mountain area, and so does not have appropriate access to clean water consumption. Thus, the goal of this community empowerment is to improve and provide counseling about the importance of awareness of healthy and quality life, the covid-19 pandemic, and nutritional needs by conducting teledentistry oral and dental health empowerment to

increase understanding of the importance of Quality of Life Related to Oral Health.

## MATERIALS AND METHODS

Madrasah Ibtidaiyah Miftahul Ulum Melirang, Melirang Village, Bungah District, Gresik Regency, East Java, gathered the study data. Three surveyors were responsible for data collecting. This study's sample size was 150 people ranging from fourth to sixth grade. When collecting data, study volunteers were in a questionnaire state. The initiative used an indirect health teaching technique that included parents and school teachers. The seminar covered dental and oral health and was provided via teledentistry. The participants were asked to fill out a Google form for the pre- and post-test to determine the improvement of oral and dental health knowledge for the dental health empowerment evaluation.

## RESULTS

Table 1 shows the oral and dental health empowerment participation. The majority of oral and dental health participants comprehend the presentation on oral and dental health empowerment. The post-test percentage was higher (93.59%) than the pre-test rate (56.81%).

**Table 1.** The participant detail and questionnaire pre-post test

Participant detail (N=150)		Percentage (%)
Gender	Male	50
	Female	50
Age	8-9	33.3
	9-10	33.3
	11-12	33.3
Grades	fourth	33.3
	fifth	33.3
	sixth	33.3
Pre-test score		56.81
Post-test score		93.59

## DISCUSSION

Oral health is a vital part of overall bodily wellness. A healthy oral cavity may help digest a nutritious food properly, maintain your quality of life, and be more productive. Maintaining the health of the child's oral cavity is one of the most important tasks parents can take to ensure their children's overall health and development.<sup>18</sup> Stunting in Indonesia is related to the health of the child's oral cavity through the effect of the of diet and nutrition, which is related to education, behavior, and socioeconomic circumstances of the family.<sup>19</sup>

Stunting is a chronic deficit nutritional status problem that affects a kid's height that is not acceptable for the child's age during a vital stage of child development.<sup>5</sup> Teeth and the mouth cavity were an essential element of the

GastroIntestinal-Tract (GIT) in children, which is vital for digestion and nutrient absorption. Dental caries in children disrupt nutrient intake, which can lead to nutrition shortage, exacerbating the stunting condition.<sup>11</sup> Stunting is regarded as one of the most important measures of children's well-being and socioeconomic status. Stunting in children can lead to difficulties with physical and mental development, as well as diminished productivity and intellectual capacity.<sup>8</sup> Stunting growth has been linked to a number of oral health issues. Deciduous dental caries were shown to be prevalent in underweight and stunted youngsters. Dental caries in children can lead to eating and sleeping problems, which can affect nutrient consumption and growth hormone release.<sup>20</sup>

The goal of this community empowerment was to successfully provide counseling about the importance of awareness of healthy and quality life, the covid-19 pandemic, nutritional needs, and also to improve the oral and dental health at Madrasah Ibtidaiyah Miftahul Ulum Melirang, which is located in Melirang Village, Bungah District, Gresik City, East Java, by conducting teledentistry oral and dental health empowerment to increase understanding of the importance of Quality of Life Related to Oral Health by increasing the post-test score as much as 93.59% than pre-test score only 56.81%. Participants in the oral and dental health empowerment program were passionate about the care and monitoring of children's dental health. All students, instructors, and parents expressed a desire to obtain up-to-date information on their children's health. The knowledge of parents and teachers pertains to parenting or care in reducing dental caries in early infancy because knowledge is a vital domain in molding one's activities, an action based on knowledge is preferable to an action based on ignorance. The more a youngster knows about dental and oral health, the better his or her dental and oral health will be. Furthermore, information and attitudes can influence children's, parents', and teachers' intents and actions to maintain excellent oral health.<sup>21,22</sup>

## CONCLUSION

The findings of the oral and dental health empowerment program showed that teledentistry was an excellent medium for boosting elementary school children's comprehension of dental and oral health status. To increase the student's quality of life, a further empowerment program related to oral health is required.

## ACKNOWLEDGEMENT

The authors would like to thank Faculty of Dental Medicine, Universitas Airlangga for the support and Madrasah Ibtidaiyah Miftahul Ulum Melirang, which is located in Melirang Village, Bungah District, Gresik City, East Java for kind cooperation. This empowerment program was supported by Program Pengabdian kepada Masyarakat

funding from Universitas Airlangga with appointment number 388/UN3/2021.

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