

## Optimizing The Health Of The Dental Supporting Network In Labuhan Ratu Raya Village, Labuhan Ratu District Through Village Community Guidance

Suryani Catur Suprapti<sup>1</sup>, Indah Budiarti<sup>2\*</sup>, Rizki Nurul Fatimah<sup>3</sup>, Sepriana Urianti<sup>4</sup>, Sri Wahyuni<sup>5</sup>, Sri Murwaningsih<sup>6</sup>, Aryudhi Armis<sup>7</sup>

<sup>1,2,3,4,5,6,7</sup>Teknik Gigi Poltekkes Tanjungkarang, Bandar Lampung

Email: [indahbudiarti@poltekkes-tjk.ac.id](mailto:indahbudiarti@poltekkes-tjk.ac.id)<sup>2\*</sup>

### Abstrak

*Problems with supporting tissue health, such as gingivitis, periodontitis, tartar, and loose teeth, are still quite common among the elderly in Labuhan Ratu Raya. This condition is influenced by a lack of understanding of oral hygiene, improper brushing techniques, and a lack of awareness of routine dental checkups. In response to this situation, the community service team conducted a series of educational activities, examinations, and training involving the elderly, their families, and health cadres. The health cadres also expressed their readiness to continue routine coaching for the elderly in their respective communities. Overall, these activities have had a positive impact on improving the oral health of the elderly in Labuhan Ratu Raya Village. It is hoped that these coaching activities will continue and become part of ongoing efforts to prevent periodontal problems, thereby further improving the quality of life for the elderly in the area.*

**Keywords:** Health, Support, Teeth, Tissue

### INTRODUCTION

Oral and dental health is an important part of overall health, yet it remains a serious problem in Indonesia. According to the 2023 Indonesian Health Survey (SKI), approximately 56.9% of the population aged three and over reported experiencing dental and oral problems in the past year. This figure indicates that more than half of Indonesians still face oral health problems, and only a small proportion receive adequate treatment. Ministry of Health data also shows that only around 11.2% of people experiencing dental and oral health problems seek treatment at health facilities, either community health centers (Puskesmas) or private dentists. This situation reflects low public awareness and access to dental health services, especially in rural areas. This problem arises from the community's low level of hygiene and healthy living practices in maintaining oral and dental hygiene. Irregular brushing habits, inadequate technique, and low flossing are the main factors that worsen the condition of the supporting tissues of the teeth. National research shows that only 2.8% of Indonesians brush their teeth correctly, in terms of time, method, and equipment used. Besides individual behavior, socioeconomic factors and limited healthcare facilities are also major causes of poor dental health in the community. Not all community health centers have dentists, and in some villages, there are no dental professionals at all. This results in low visits to health facilities for routine checkups, resulting in many cases of dental disease only being treated when they are already severe. Furthermore, public awareness of the importance of supporting

tissues such as the gums, periodontal ligament, and alveolar bone remains very low, even though these components play a crucial role in supporting strong and healthy teeth.

Signs of tooth-supporting tissue disorders are often ignored by the public because they are considered minor, such as bleeding gums when brushing, swollen gums, bad breath, or discomfort when chewing. If left untreated, this condition can progress to more serious periodontal disease. Periodontal disease not only causes loose teeth and even tooth loss, but can also cause infection in the surrounding tissue, interfere with chewing function, and even impact systemic health such as increasing the risk of heart disease, diabetes mellitus, impaired brain function, and stroke. This is because chronic inflammation in the tooth-supporting tissue can trigger increased levels of pro-inflammatory cytokines such as interleukin-6 (IL-6), C-reactive protein (CRP), and tumor necrosis factor-alpha (TNF- $\alpha$ ) in the blood. These inflammatory substances can enter the systemic circulation, triggering an inflammatory reaction in the cerebral blood vessels, and contributing to atherosclerosis and narrowing of the cerebral blood vessels, which are major triggers of stroke. Several studies have shown that individuals with periodontal disease have up to two times the risk of ischemic stroke compared to those with healthy gums (Ministry of Health of the Republic of Indonesia, 2022; Journal of the American Heart Association, 2021). Furthermore, chronic oral infections are also associated with decreased cognitive function due to impaired cerebral blood flow and increased oxidative stress in neural tissue. Given these conditions, ongoing efforts are needed to increase public awareness and active participation in maintaining dental and oral health. One effective approach is through village community development. With development, communities are not only beneficiaries of health programs but also play an active role as agents of change. Through village dental health cadres, outreach activities, and dental health posts (Posyandu), residents can gain the knowledge and skills to perform independent dental care and prevent disease early. The Labuhan Ratu Raya Village community development efforts to optimize the health of the supporting tissues of the teeth are expected to create positive behavioral changes and improve public health. With active community involvement and support from village health workers, dental and oral health problems can be reduced, the incidence of periodontal disease can be reduced, and the community's quality of life can be improved. Therefore, community development is a strategic step in realizing a village community that is healthy, independent, and aware of the importance of maintaining the health of the dental support tissue as part of a sustainable life well-being.

The community service activity to be conducted is entitled "Village Community Development in Optimizing Dental Supportive Tissue Health in Labuhan Ratu Raya Village, Labuhan Ratu District." The activities will include Dental Supportive Tissue Health Education to Prevent Periodontal Disease, dental examinations for the elderly, and Early Detection Training for Dental Supportive Tissue Disorders for Health Cadres to Optimize Dental Supportive Tissue Health in the Elderly. This community service activity aligns with the Vision and Mission of the Tanjungkarang Health Polytechnic and the Scientific Vision of

the Dental Engineering Diploma III Study Program: to become a professional and superior study program in the field of acrylic prostheses, adaptable to digital technology developments, with a global perspective, and contributing to supporting improved brain health and stroke prevention by 2039." It also aligns with the Dental Engineering Diploma III community service roadmap, namely "Integration of Acrylic Prostheses and Digital Technology in Supporting Brain Health and Stroke Prevention Towards a Healthy and Productive Society."

## METHOD

This community service activity is implemented through three stages: preparation, implementation, and evaluation and follow-up. The preparation phase includes coordination with community health centers (Puskesmas), sub-districts, and health cadres, developing an activity schedule and assigning tasks to the implementation team, determining the number of cadres to be trained, identifying target areas with high incidences of dental and supporting tissue disease, and preparing training modules, dental and oral demonstration materials, early detection forms, and supporting facilities. The implementation phase includes program outreach to partners, delivering materials on tooth and supporting tissue anatomy, early signs of periodontal disease, and early detection steps in the elderly. This is followed by examinations of the supporting tissue in the elderly, training cadres through the distribution of modules, and simulations of oral cavity examinations and filling out early detection forms under the guidance of the community service team. The evaluation and follow-up stages are carried out to assess the attendance and involvement of participants, increase the knowledge of cadres through pre-tests and post-tests, and the ability of cadres in conducting early detection, while monitoring the reduction in the incidence of dental supporting tissue disease through community health center surveillance reports, where trained cadres carry out routine screening on the elderly and report the results periodically with guidance and supervision from the community health center.

## RESULTS AND DISCUSSION

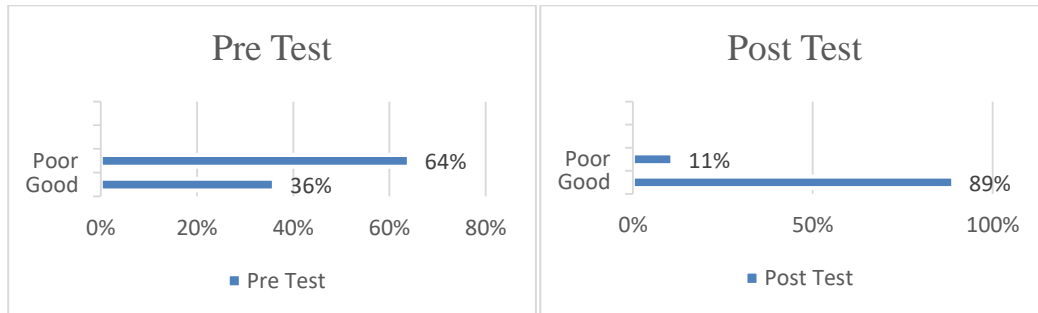
Community Development Activities to Optimize Dental Supporting Tissue Health in Labuhan Ratu Raya Village, Labuhan Ratu District, 2025



**Figure 1.** Activity documentation

The direct outputs of this community service activity include: the implementation of dental health education and examinations for the elderly; the development of educational media in the form of a PPT and a short module on early detection of dental support tissue disorders; and improving the ability of health cadres to detect and provide education on the prevention of dental support tissue diseases in the elderly.

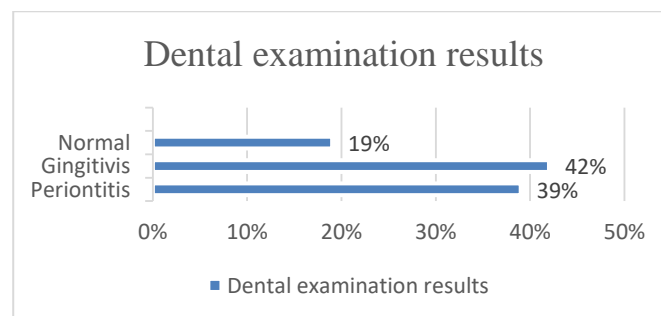
a) Increasing Elderly Knowledge about Dental Support Tissue Health



**Figure 2.** Increasing elderly knowledge about dental support tissue health

Based on the pre- and post-assessment evaluations of the dental support tissue health education program, there was a significant increase in knowledge among the elderly participants. In the pre-test, only 36% of the 30 elderly participants had a good level of knowledge, while the majority (64%) still had low knowledge. This indicates that prior to the education, the elderly's understanding of the importance of maintaining healthy gums and supporting tissue was still limited. After participating in a series of interactive education sessions, demonstrations, and dental examinations, post-test results showed a drastic improvement, with 89% of the elderly achieving a good level of knowledge and only 11% remaining in the low level. This data confirms the effectiveness of the educational program in increasing elderly awareness and understanding regarding the treatment and prevention of dental support tissue diseases, which is expected to encourage better oral care practices on an ongoing basis.

b) Results of the elderly's dental examination

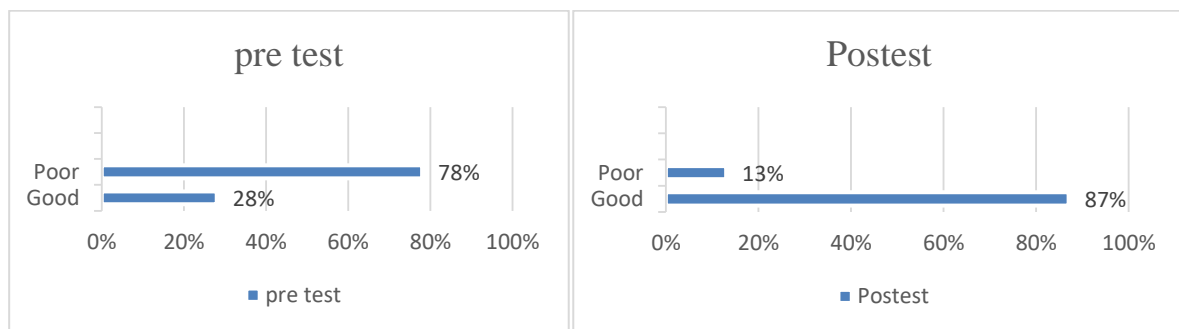


**Figure 3.** Results of the elderly's dental examination

Dental examinations of the elderly showed that 42% of participants experienced gingivitis, an inflammation of the gums characterized by redness and mild bleeding. Thirty-nine percent of the elderly were diagnosed with periodontitis, a more serious condition where inflammation affects the supporting tissues of the teeth, causing damage and potential

tooth loss. Meanwhile, only 19% of the elderly had normal gums and supporting tissues without signs of inflammation. Dental examinations not only serve as an evaluation of oral health but also provide a means for personal consultations for the elderly to express and find solutions to their dental and gum problems. Through these examinations, the elderly can immediately receive explanations and appropriate treatment recommendations from healthcare professionals, thus preventing worsening conditions and raising awareness of the importance of maintaining the health of the supporting tissues of the teeth on an ongoing basis.

- c) Improving the knowledge and skills of dental cadres regarding early detection of disorders of the supporting tissues of the teeth.



**Figure 3.** Improvement in the knowledge and skills of dental health cadres

The results of the pre- and post-test evaluation of health cadres' knowledge regarding dental supporting tissue health showed a significant improvement. In the pre-test, only 28% of cadres had good knowledge, while the majority, 72%, still had poor knowledge. This indicates that prior to the training, cadres' understanding of the care and prevention of dental supporting tissue disease was still limited.

After the training and training, the post-test results showed a significant improvement, with 87% of cadres now having good knowledge, and only 13% still having poor knowledge. This improvement demonstrates the effectiveness of the learning methods implemented during the training and demonstrates the cadres' readiness to carry out their role as key drivers in educating and assisting the community in maintaining dental supporting tissue health. With this significant increase in knowledge, cadres are expected to be more confident and competent in providing counseling, conducting early detection of dental problems, and encouraging preventive behaviors for periodontal disease in the Labuhan Ratu Raya Village community. In addition to the improved knowledge scores, brief interviews indicated that the cadres now have a better understanding of the early signs of periodontal disease and gingivitis.

## CONCLUSION

Community development activities to optimize the health of the supporting tissues of the teeth in Labuhan Ratu Raya Village in 2025 successfully achieved their primary objective, namely improving the knowledge, attitudes, and practices of health workers and the elderly in

maintaining healthy supporting tissues of the teeth. Through a series of integrated educational activities, training, and dental examinations, there was a significant increase in the knowledge and attitudes of health workers and the elderly. Pre-test and post-test evaluation results indicated that before the activity, the majority of participants still had an inadequate understanding of the importance of gum and supporting tissue care, which could potentially increase the risk of periodontal disease and related complications. After receiving training in the form of counseling, demonstrations of correct oral care techniques, and individual dental examinations, the majority of health workers and the elderly showed a very significant increase in knowledge and attitudes. This demonstrates that the interactive and participatory educational approach is highly effective in increasing participants' awareness and ability to perform self-care and detect early dental and oral health problems. Health workers, as the spearhead of services in the village, also experienced increased capacity, making them more confident and competent in carrying out their role as drivers of behavior change in the community.

## REFERENCE

- Department of Dental and Oral Health, Poltekkes Kemenkes Tanjungkarang. (2024). Roadmap for Community Service Diploma III Dental Engineering: Integration of Acrylic Prostheses and Digital Technology in Supporting Brain Health and Stroke Prevention Towards a Healthy and Productive Society. Bandar Lampung: Poltekkes Kemenkes Tanjungkarang.
- Dwi, N., & Wahyuni, S. (2019). The Effect of Dental Health Education on Toothbrushing Behavior among Elderly in Sukamaju Village. *Journal of Public Health*, 14(2), 123-130.
- Journal of the American Heart Association. (2021). Periodontal Disease and Risk of Ischemic Stroke: A Systematic Review and Meta-analysis. *Journal of the American Heart Association*, 10(15): e022345. Available at: <https://doi.org/10.1161/JAHA.121.022345> [Accessed October 15, 2025].
- Kurniawati, R. (2021). Empowering Health Cadres to Improve Oral Health of the Elderly in Cibinong District. *Journal of Community Service*, 3(1), 45-53.
- Ministry of Health of the Republic of Indonesia. (2015). Guidelines for Dental and Oral Health Services at Community Health Centers. Jakarta: Ministry of Health of the Republic of Indonesia.
- Ministry of Health of the Republic of Indonesia. (2022). National Basic Health Research (Risksedas) Report 2022. Jakarta: Health Research and Development Agency, Ministry of Health of the Republic of Indonesia.
- Ministry of Health of the Republic of Indonesia. (2023). Indonesian Health Survey (SKI) 2023: National Report. Jakarta: Health Development Policy Agency, Ministry of Health of the Republic of Indonesia.
- Putri, S. D., & Santoso, H. (2018). The Relationship Between Dental and Oral Health Knowledge and Dental Health Status in Elderly at Community Health Centers in Bandung City. *Indonesian Health Journal*, 9(3), 200-207.
- Petersen, P.E. & Ogawa, H. 2018. The global burden of periodontal disease: Towards integration with chronic disease prevention and control. *Periodontology 2000*, 78(1): 10–20. Available at: <https://doi.org/10.1111/prd.12279> [Accessed October 15, 2025].
- Sari, P. N., & Yuliana, E. (2020). Community Development Strategies to Improve Dental and Oral Health in Villages. *Journal of Public Health*, 12(1), 56-62.

- World Health Organization (WHO). 2022. Oral Health: Fact Sheet. Geneva: World Health Organization. Available at: <https://www.who.int/news-room/fact-sheets/detail/oral-health> [Accessed October 15, 2025].
- Wulandari, D. A., & Hartono, A. (2017). The Role of Health Cadres in Promoting Dental and Oral Health in Community Health Center Work Areas. *Indonesian Journal of Environmental Health*, 16(2), 98-105.