

## Nutrition education and mastication improvement through social services provision in Ketapang sub-district, Probolinggo

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### ABSTRACT

**Introduction:** A community-based exercise was implemented with the specific theme "Awareness raising among Family Welfare Program and Youth Organization group members of the importance of Family Nutrition Literacy and of nutrition education and mastication improvement through provision of removable dentures" in Ketapang sub-district, Kademangan district, Probolinggo. **Aim:** This community-based service was intended to inform the public of the importance of nutritional consumption to ensure a well-nourished family and enhanced mastication resulting from the use of removable dentures. This event was held in the middle of the COVID-19 pandemic. **Methods:** Two teams managing innovative and promotion were created. The role of the former was to conceptualize activities, while that of the latter was to directly inform the target community using a combination of printed and electronic media. These teams consisted of lecturers and 2<sup>nd</sup> year residents of the Department of Prosthodontics, Faculty of Dentistry, Universitas Airlangga. **Results:** The event involved the use of video conferencing through which residents delivered online counselling session to Family Welfare Program, Youth Organization group, and health cadre members who had already gathered at Ketapang Health Center, while maintaining physical distancing. Several residents worked on site alongside health cadres from the Ketapang Health Center. Given the ongoing pandemic, the teams decided to donate certain props: four full dentures, four removable partial dentures and four fixed partial dentures. **Conclusion:** Online counseling of the Ketapang Health Center cadres was expected to increase their awareness and comprehension of nutrition education and improvement in the mastication function of dentures through the use of teaching aids.

**Keywords:** nutrition education, making denture, improvement of mastication function

### INTRODUCTION

Indonesia is one country that still experiences nutritional problems. Malnutrition in Indonesia currently affects 40.41% of the population. Of the total number of cases, approximately 6% involve of children aged less than 5 years suffering from severe malnutrition, 7.3% of children aged more than 5 years old with malnutrition, and 14% of children aged less than 5 years old who are overweight.<sup>1</sup>

In order to overcome nutrition-related problems in Indonesia, Presidential Decree No.8 of 1999 initiated a nationwide campaign to address food and nutrition problems with the intention of empowering families and communities, while simultaneously strengthening cross-sector cooperation. In line with this Presidential Decree,<sup>2</sup> the Ministry of Health of the Republic of Indonesia established the main strategy of acceleration a reduction in the incidence of malnutrition in children under the age of five years old by implementing the Family Nutrition Literacy program (Keluarga Sadar Gizi/Kadarzi). Kadarzi represents a family demonstrating a balanced nutritional attitude which facilitates the recognizing, preventing and overcoming of nutritional problems in each of its members. Families are said to demonstrate positive Ka-

darzi behavior if they have consistently applied its five indicators, namely; monitoring body weight on a regular basis, making exclusive use of breastfeeding, following a varied diet, and consuming iodized salt and nutritional supplement.<sup>2</sup>

The results of the 2010 survey highlighted two indicators that resulted in poor Kadarzi performance; not exclusively breastfeeding infants and following a less varied diet.<sup>3</sup> In general, the objective of Kadarzi is to achieve optimal nutritional conditions for all family members by expanding their knowledge, thereby enabling them to address nutritional problems, increasing community awareness in overcoming family nutrition problems, and enhancing the ability and skills of health officers to empower the community or family to prevent and solve nutritional problems. The target population of the Kadarzi program is all family members because decision-making regarding the fields of food, nutrition and health is an activity conducted at the family level. Resources owned and expended in meeting daily needs and addressing nutritional problems are closely related to family behavior, not solely due to poverty and food insecurity.<sup>3</sup>

Oral hygiene is an integral and inseparable aspect of overall physical health. Teeth play nume-

rous roles in well-being. However, as an individual age, the greater his or her susceptibility to tooth loss results in anatomical, physiological and functional changes, and, occasionally, even psychological trauma for the person concerned. This situation underpins the increasing need for dentures.<sup>4</sup> Dentures can be broadly divided into two types; fixed and removable. Removable dentures (which the patient him/herself can detach from the gum) are divided into two varieties, complete and partial.<sup>5</sup> They are intended to restore the functions of mastication, aesthetics, and speech, while helping to retain the remaining teeth, improve occlusion, and maintain the remaining soft tissue of the mouth in a healthy condition. The community service provided will include counseling on family nutrition literacy and improved chewing function among community members through the production of removable dentures in the Ketapang sub-district, Probolinggo, East Java.

## METHODS

The technical implementation of this community service involved several stages. First stage: Survey and field coordination, a field survey team consisting of innovative team members and the residents conducted a field survey. The survey team met with the Head of the Ketapang Health Center as well as representatives of the cadre members of the Family Welfare Program (*Pembinaan Kesejahteraan Keluarga/PKK*) and the Youth Organization (Karang Taruna) in Ketapang District, Probolinggo to discuss a series of community service activities. This meeting also discussed the criteria to be applied to individuals suitable for being fitted with removable partial dentures. Second stage: Data collection and examination. During this visit, patient administration data was collected at the reception desk. Patients who had been registered were subjected to dental examination, diagnosis, recording of preliminary treatment requirements, and the taking of dental impressions in order to produce a study model for the purposes of denture manufacture. In this stage, the dental impression process was conducted by the residents and Indonesian Prosthodontic Society (IPROSI) Surabaya branch members accompanied by a dentist from Ketapang Health Center. The preliminary treatment was undertaken by the Ketapang Health Center dentists. Acrylic-based removable dentures with wrought-wire clasps were produced by the residents at the Faculty of Dental Medicine, Universitas Airlangga, Surabaya. Third stage: Counselling and insertion of dentures.

During this stage, PKK and Karang Taruna gathered at the Ketapang Health Center to receive counseling, while patients who had previously been examined were ready for the fitting of removable partial dentures. Fourth stage: Control. This stage was completed one day after fitting of the dentures by the Ketapang Health Center dentist.

## RESULTS

### Implementation of dental health education

This social service was intended to raise awareness of nutrition education and the importance of adults replacing lost teeth with dentures in order to improve their quality of life. As many as 40 participants were following health guidelines delivered in two sessions, each attended by 20 individuals. Each cadre was provided with basic requirements: rice (3 kg), sugar (1 kg), one toothpaste, one toothbrush, a dental health pocket book, and IDR50,000 as transport allowance. This package was provided to enable them to increase nutrition awareness and pass on dental health information to their families and neighbours.

Two residents served as counseling session leaders for each session; session 1 and session 2. In each session two topics were presented, namely "Dental Health to Improve Nutrition", and "The Importance of Replacing Missing Teeth in Adults in order to Improve their Quality of Life through Denture-based Treatments". Each session was followed by a question and answer section, with issues being raised by participants and responded to by the residents who provided counseling.

### Social aid provided the Prosthodontics Specialist Study Program, Faculty of Dental Medicine, Universitas Airlangga to the Ketapang Health Center

Donations were given to the Ketapang Health Center and participants after the closing session. Those intended for the center comprised three pieces of level 3 personal protective equipment, one pack of KN 95 masks, 3 packs of surgical masks, souvenir bags, 3 pairs of goggles, and 20 dental health pocket books. Donations for counselling session participants consisted of rice (3 kg), sugar (1 kg), one toothpaste, one tooth-brush, one dental health pocket book, and a transport allowance of IDR50,000.

The following is a description of the counseling, which covers two topics: dental health education intended to improve oral health and the importance of replacing lost teeth with dentures in adults in order to improve their quality of life.



**Figure 1** The virtual dental health education. The participants divided into 2 sessions (A and B); each consist of 20 people, C the counseling session was performed virtual using ZOOM platform, D the donation for Ketapang Health Center and participants were given.

The COVID-19 pandemic remains ongoing. This prevents the manufacture of dentures at the Ketapang Public Health Center. Therefore, denture manufacture was replaced by the charitable activity of providing denture props for the dentists and cadres of the center to enable them to provide continuous dental health education. The denture props in question consisted of three sets of complete acrylic dentures of both upper and lower jaw, four sets of removable acrylic partial dentures of both upper and lower jaw, three sets of porcelain anterior and posterior fixed partial dentures, 100 pocketbooks for the cadres, and 100 pocketbooks containing information about dentures in addition to the 60 pocketbooks that had already been distributed on the day of the counselling.

## DISCUSSION

### The COVID-19 pandemic

The pandemic that struck the world in December 2019 originated in Wuhan, China. The outbreak in Indonesia began three months later and affected almost the entire archipelago, from Sabang in the west to Merauke in the east. At the time of writing, the pandemic continues to infect individuals across the whole country, with the province of East Java constituting the second red zone after Jakarta, the capital, where the death rate and active cases are persistently high. All social activities have been curtailed due to the pandemic, including social service activity described here. Community service represents one of the three Ministry

of Higher Education missions in Indonesia consisting of education, research and community service. The Prosthodontics Specialist Study Program falls under the management of the Prosthodontics Department which is dedicated to undertaking community service in deprived areas. The program also provided residents with essential practice in applying their theoretical knowledge for the benefit of the community. Such community service is invariably performed annually and involves different places. The lecturers and residents provided counseling on nutrition awareness and the need for replacement teeth, as well as performing examinations, dental impression and insertion of dentures as part of this community service activity. The problems encountered and the solutions offered are as follows.

The problem identified in the surrounded area of the Ketapang Public Health Center, Probolinggo was that numerous families do not understand the importance of meeting nutritional requirements in the development of children and adults. This community service activity sought to provide counseling as a means of improving public awareness that the fulfilling of nutritional needs is essential to physical growth and development can be achieved for both children and adults. For adults, tooth replacement treatment was provided so that fulfillment of needs can be achieved as a result. The basic contribution to the target audience was an increase in awareness of the importance of fulfilling nutritional requirements in child development

and of replacing missing teeth in adults in order to improve the quality of life through the provision of removable partial dentures.

**Constraints on the provision of community service at the Ketapang Health Center, Kademangan sub-district, Probolinggo.**

The authors had already drafted a proposal for the implementation of community service at the beginning of 2020, but the COVID-19 pandemic is devastating the world, including Indonesia. Numerous obstacles to implement the tripartite mission of the Ministry of Higher Education during the pandemic exist. East Java has been included as a red zone since the high level of virus transmission, which caused significant suffering on the part of the population, inducing the local government to introduce Large-Scale Social Restrictions. Several hospital-based Dentistry and Health Centers were forced to lock down due to the virus infecting health workers. Ketapang Health Center was also experiencing PSBB which culminated in dental practice being unable to comply with health protocols. Therefore, the implementation of this community service at the Ketapang Health Center was only possible by means of video conferencing. The residents were based at home, providing online counselling using Zoom application to Karang Taruna and PKK health cadres. The participants that had arrived at Ketapang Health

Center were following health protocols including: physical distancing (1-2 meters), limiting each session to a maximum of 20 participants, washing of hands before entering meeting rooms, and the wearing of face masks. The event was conducted through two sessions with a total of 40 participants. A representative of the residents was one of them, whose parents-in-law live in Probolinggo, while counselling programs were all managed by Universitas Airlangga Surabaya. Producing dentures for members of society who need them most urgently cannot be undertaken in the near future because of the COVID-19 pandemic. The resumption of full dentistry services at the Ketapang Health Center and an end to the COVID-19 pandemic remain the collective hope of all sections of society.

The article can be summarized briefly and concisely that implementation of community services at the Ketapang Health Center, Kademangan sub-district, Probolinggo, experienced certain obstacles that can only be surmounted by resorting to online forms of delivery. The event consisted of two sessions, each consisting of 20 participants, giving a total of 40 participants. Donations of teaching aids were made to the Ketapang Health Center in the form of four complete dentures, four removable partial dentures and four bridge or fixed dentures, in addition to 100 pocketbooks containing information and advice about the importance of dentures in maintaining oral health.

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