

## Expert Lecture and Live Demo: The Latest Endodontic Treatment and Restoration with Dental Fiber Posts

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**Abstract** Endodontic treatment of anterior trauma and caries followed by post and crown restoration is not included in the minimum standard of oral care in primary health facilities. Endodontic treatment, which requires a relatively long time and the number of visits compared to mere tooth extraction, often makes it impossible to carry out in a health facility with many patients per day. This community service was aimed to provide technical understanding and knowledge of endodontic treatment procedures for anterior teeth that are simple, up-to-date, with a minimum number of visits, and provide an understanding of the selection of dental fibre post materials that meet reasonable material requirements at a more affordable price. Methods for implementing the activities consisted of: (1) Formulation and preparation; (2) Pre-test; (3) Expert lecture; (4) Live demo; and (5) Post-test. This community service increased the knowledge and ability in endodontic treatments for anterior teeth and their restoration with dental fibre posts from the prospective dentists and dentists who were participants in this community service. This activity can also lead to the making of the latest manual and standards for endodontic treatment for anterior teeth and their restoration with dental fibre posts.

### 1. INTRODUCTION

Anterior teeth are teeth that are susceptible to trauma and caries. Apart from functioning in the mastication process, anterior teeth also function aesthetically and can affect a person's quality of life. Endodontically treated teeth have tooth structures that require restoration with crown. If there is not sufficient dentin to support retention and support, crown restoration requires support from post and core to reinforce the remaining tooth structure and prevent fracture.

Endodontic treatment of anterior trauma and caries followed by post and crown restoration is not included in the minimum service standards in public health facilities in general. The scope of dental and oral health services stipulated in the Practical Guide to Dental Services and Dental Prosthesis for JKN Participants issued by BPJS Kesehatan in 2014 only covers administrative dental and oral health services; examination, treatment, and medical consultation; premedication; oro-dental emergencies; extraction of primary teeth (topical, infiltration);

uncomplicated permanent tooth extraction; post extraction medicine; composite/GIC filling; and dental scaling (1x a year) (BPJS Kesehatan, 2014).

Endodontic treatment which is considered to require a relatively long processing time and a large number of visits compared to tooth extraction often makes it impossible for this curative action to be carried out in health facilities with a large number of patients per day. Research conducted by Melgaco-Costa et al. in cities in developing countries related to patient perceptions of endodontic treatment as part of public health services identified two main problems that hinder endodontic treatment in public health facilities, namely access and quality of services (Melgaco-Costa et al., 2016).

Difficulties in accessing services are associated with an insufficient number of professionals to meet the high demand for endodontic treatment, problems in referring from primary to secondary care, and geographic barriers. While the quality of service is related to the presence/absence of pain

and anxiety experienced by the patient, the time and number of sessions required to complete the treatment, how the patient is treated by the dentist, and whether the patient will recommend the service to other patients. Access to endodontic treatment is an issue emphasized by patients, and satisfaction with service quality related to how the patient is being treated give their perception than to the dentist's technical competence, which indicates that a dentist's inability to educate and convey good treatment perceptions has a major effect on patient compliance and satisfaction with dental and oral health services (Melgaço-Costa *et al.*, 2016).

Dentists who work in community health service centers or private practice are the spearhead of dental health services in community who need to have the ability to take curative and rehabilitative actions that are always developing following advances in science and technology as well as the ability of promotive and preventive efforts in preventing disease and in providing education about alternative therapies for dental and oral diseases. Around the world, primary health care-oriented health systems (Puskesmas) have consistently resulted in better health outcomes, increased equity, and increased efficiency (Starfield, Shi and Macinko, 2005; Macinko, Starfield and Erinosh, 2009). Primary and essential public health services serve as the core of integrated health services. The provision of quality health services that answer the needs and preferences of the community, both at the population and individual levels, is the first component of Puskesmas. The services cover the full range of health promotion and disease prevention to treatment, rehabilitation and palliative care and are provided at the individual or population level, as appropriate. In many health systems, key population-based functions are provided by the same primary care team responsible for individual services (e.g. disease screening and reporting, health education, health promotion, and behavior change communication)(World Oral Health Organization and Fund, 2018).

The large number of visits and the perceived high price of dental fiber post restorations are often become considerations for dentists in providing education about alternative therapies to patients. The use of the post usually requires repeated visits, it can create a patient reluctance to continue the treatment. However, in its development, endodontic science allows for fewer treatment steps and more cost-effective therapeutic for patients. The choice of dental fiber post materials is also more various that is more affordable for the patient (Djustiana, Faza and Cahyanto, 2021).

An expert lecture accompanied by a live demo regarding the procedure for endodontic treatment of anterior teeth in a simple way, a small number of visits, and the selection of dental fiber post materials that are more affordable for patients is needed so that dental practitioners can provide education for patients and provide services in an effort to better curative and rehabilitative treatment in patients with anterior teeth with trauma or caries. Dentists need to improve the quality of professionalism, be it knowledge, skills, and attitudes.

Dental students are future dentists. If students do not have sufficient competence, then the community will not be able to get maximum service, especially in health facilities in the rural area (Pramasari, 2020).

Professional students are the future dentists who will soon enter the community and practice as dentists, so that knowledge that can be implemented in the right treatment of patients is needed. A cross-sectional study was conducted using a questionnaire on 276 dentists from developing countries. It was found that there was a significant relationship between the level of training and education obtained by students of the dentistry and dentist professions with the type of post they used in endodontic treatment, where students of the dental profession and dentists without training and education more often used metal posts, while students who get training and education report glass fiber posts as their first choice (Sarkis-Onofre *et al.*, 2015). The results of this study also indicate that continuing education for students of the dental profession and dentists influences their decisions on the choice of the right use of posts in endodontic treatment for the community (Sarkis-Onofre *et al.*, 2015).

This expert lecture activity is provided by specialist partners in dental conservation and dental materials and is open for general dentist practitioners. This activity aims to provide understanding and technical knowledge about endodontic treatment procedures for anterior teeth that are simple, current, and with a minimal number of visits, as well as providing understanding in the selection of dental fiber post materials that meet good material requirements with a more affordable price.

## 2. METHOD

Methods of implementing community service activities (PPM) Expert Lecture and Live Demo: Management of the Latest Endodontic Treatment for Anterior Teeth and Restoration with Dental Fiber Posts for Dentists in Sumedang Regency in achieving the output target in the form of compiling a guidebook for the management of the latest endodontic treatment for anterior teeth and their restorations using dental fiber posts, as well as becoming a scientific publication in the field of dentistry dental materials in accredited national journals, with the following stages:

### a. Formulation and preparation of activities

Prior to PPM activity, the team first coordinated with an expert in endodontic treatment and dental restoration, Dr. drg. Irmaleny, Sp.KG., the Head of the Department of Dental Conservation, Faculty of Dentistry, Padjadjaran University, as the coordinator of the live demo; with drg. Veni Takarini, M.Kes., the Manager of Research, Community Service, Innovation and Cooperation of the Faculty of Dentistry, Universitas Padjadjaran, who helps facilitate every PPM activity by the academic community of the Faculty of Dentistry, Universitas Padjadjaran.

### b. Pre-test activities

Prior to the expert lectures and counseling, the participants who are the students of the dentist and dentist profession program in Sumedang, filled out a questionnaire to find out knowledge about the latest endodontic treatment

management for anterior teeth and their restorations with dental fiber posts.

c. Expert Lecture

Expert lecture was conducted with the topic on the management of the latest endodontic treatment for anterior teeth and their restoration with dental fiber posts, by an expert panel of the PPM team consisting of dental biomaterials expert, Dr. drg. Nina Djustiana, M.Kes., who is also the Dean of the Faculty of Dentistry, Padjadjaran University and the head of the PPM team; dental biomaterials expert, drg. Elin Karlina, M.Kes., a lecturer at the Faculty of Dentistry, Padjadjaran University; as well as an expert on alternative materials in dentistry, drg. Zulia Hasratiningsih, M.DSc., as the Head of the Department of Dentistry Material Science and Technology, Faculty of Dentistry, Padjadjaran University.

d. Live Demo

After the expert lecture as material supplies, then conducted a demonstration of the latest endodontic treatment management for anterior teeth and their restorations with dental fiber posts, coordinated by Dr. drg. Irmaleny, Sp.KG., together with the PPM team, and also facilitated by the Manager of Research, Community Service, Innovation and Cooperation, Faculty of Dentistry, Padjadjaran University.

e. Post-test activities

PPM activity ends with post-test to discover how far the understanding improvement progress of dentist professional program students regarding theories and practices of current endodontic treatment management and restoration with dental fiber pegs, once expert lecture and live demo conducted that will determine PPM activity output.

**3. RESULT AND DISCUSSION**

After PPM activity is conducted in the form of expert lecture and live demo: the management of current endodontic treatment for anterior teeth and restoration with dental fiber pegs for dentists in Sumedang District, brings about some advantages in accordance with this PPM activity, as follow:

1. Prior research done by PPM team regarding dental fiber pegs material selection as the material of teeth restoration in current endodontic treatment may be applied properly for dentist professional program students in conducting dental health therapy for public community.
2. There are knowledge improvement and management ability of current endodontic treatment for anterior teeth and its restoration with dental fiber pegs of dentist professional program students who participate in PPM activity.
3. The activity is a way of Dentist Faculty of Padjajaran University that has role as dissemination dentistry in responding to and fulfilling the needs of dental practitioners in particular, and society in general, specific in this activity is in the field of endodontic treatment and teeth restoration, as well as providing alternative dental materials.

Regarding the achievement and the output of the activity are shown in Table 1 below:

**Table 1.** Activity achievements and output

No.	Activities type	Output type	Achievements after activity
1	Expert lecture of current endodontic treatment management for anterior teethe and its restoration with dental fiber pegs	Pre-test and post-test	There are participants cognitive ability improvement on post-test
2	Live demo of current endodontic treatment management for anterior teethe and its restoration with dental fiber pegs	Current endodontic treatment method, as well as alternative dental materials	There are participants practical ability improvement on post-test
3	Guidebook creation of current endodontic treatment management for anterior teethe and its restoration with dental fiber pegs	Not yet, review has not been done	It is possible to create and update the manual book and standard by Endodontic and Dental Material Expert Team



**Figure 1.** Expert lecture by PPM expert team



**Figure 2.** Live demo of sophisticated endodontic treatment with dental fiber pegs

**5. CONCLUSION**

The conclusion of this PPM activity is that there are knowledge improvement and management ability of current endodontic treatment for anterior teeth and its restoration with dental fiber pegs of dentist professional program students who participate in PPM activity. It is possible, through this PPM activity, to create the manual book and standard of current endodontic treatment management for anterior teeth and its restoration with dental fiber pegs.

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