

Development of tuberculosis pocket book and dental health and mouths for parents of children with tuberculosis in Tasikmalaya City

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ABSTRACT

Tuberculosis is a chronic infectious disease that attacks various organs, including the lungs. Tuberculosis can also attack other organs, such as joints, bones, brain membranes, and the oral cavity is no exception. Oral tuberculosis provides a varied clinical picture, such as ulcers (canker sores), nodules (lumps), inflammation of the gums, and the lesions may or may not cause pain. According to the Tasikmalaya City Health Office, the number of TB patients in children as of March 2023 amounted to 503, with the age category of 0-5 years 254, 6-14 years 249. The Purpose of the Research: to produce a pocket book about tuberculosis and dental and oral health for parents of children with tuberculosis in Tasikmalaya City. Research Method: Research and Development (R&D) research method by collecting references for research materials, summarizing data by conducting FGD with tuberculosis program holders and dental and oral health program holders from the Tasikmalaya City Health Office and 22 health centers in the Tasikmalaya City Health Office area with 60 respondents, compiling pocket book products. Research Result: The description of the conclusion to the respondents' answers was the development of a pocket book on tuberculosis and dental and oral health for parents of children with tuberculosis in Tasikmalaya City. Conclusion: This study produced a pocket book about tuberculosis and dental and oral health for parents of children with tuberculosis.

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INTRODUCTION

Tuberculosis is a direct infectious disease caused by the bacterium *Mycobacterium tuberculosis* (Marlinae et al., 2019). Tuberculosis mostly affects the pulmonary parenchyma but this bacteria has the ability to infect other organs (Nashirah et al., 2023)(Mesi, 2023)(SITI BAROKAH, 2024). Tuberculosis is a health problem in the world. Tuberculosis in Indonesia ranks second after India, with 969 thousand cases and 93 thousand deaths per year or equivalent to 11 deaths per hour

(Kemenkes, 2023). The Ministry of Health recorded that 503,712 people who had tuberculosis from January 1 to November 1, 2022, 61,594 people were children. In detail, 34,615 children affected by TB are aged 0-5 years, aged 5-14 years as many as 26,979 people (Ardiansa & Ester, 2023)(Noval, 2024)(Malewa & Yartin, 2024).

Tuberculosis has a major manifestation in the lungs, but the disease can occur in other organs such as in the oral cavity. Clinical manifestations in the oral cavity can be in the form of ulcerations called *oral tuberculosis ulcers*, fissured tongue, tuberculoma and enlarged gingiva. *Oral tuberculosis ulcers* have a clinical picture similar to ulcerative lesions caused by trauma or *traumatic ulcers*, ulcerative lesions caused by syphilis or *syphilis ulcer lesion*, *aphthous ulcers*, actinomycosis and granulomas. *Oral tuberculosis ulcers* have a non-specific clinical picture and can be misdiagnosed with other ulcerative lesions of the oral cavity, especially if these lesions arise before systemic symptoms appear (SAIDI, 2020).

The most concentrated areas of TB cases are on the island of Java such as DKI Jakarta, West Java, East Java, and Central Java. Tasikmalaya City ranks 18th out of 27 districts/cities in TB cases in West Java. Data from the Tasikmalaya City Health Office in 2022 shows that the number of strong or *drug-resistant* TB patients reached 46 people. Confirmed drug-sensitive TB patients reach more than 1,000 people (Sudrajat & Pradana, 2023)(SURYANA & TALEBONG, 2023)(Putra et al., 2023). The number of TB patients in children until March 2023 is 503, with 254 children aged 0-5 years, 249 children aged 6-14 years (Dinkes Kota Tasikmalaya, 2023).

Health education about TB can be delivered through health education media. The media is used to facilitate the reception of health messages for the public. Health education media is used both electronically and non-electronically, among which those that are often used because they are interesting and simple are pocket books (Notoatmodjo, 2012).

RESEARCH METHOD

The research method used in this study is the Research and Development (R&D) method. R&D is a research method used to produce a specific product (Arikunto, 2010). The sample in this study is the manager of the TB program and the dental and oral health program from the Tasikmalaya City health office and 22 health centers in the area of the Tasikmalaya City Health Office totaling 60 people to carry out *the Focus Discussion Group* (FGD), and the product trial will later be carried out on 45 children with tuberculosis respondents.

RESULTS AND DISCUSSIONS

Table 1. Description of conclusions to the answers of TB program holders

| No | Question | Answer |
|----|--|--|
| 1 | What is the role of dental hygienists in the current TB control program? | Dental health workers coordinate with TB program holders if there are TB patients who are examined at the dental poly |
| 2 | Are there any specific guidelines for TB screening in dental health facilities? | There are no specific guidelines for TB screening in dental health facilities |
| 3 | What is the ideal referral flow from a dental clinic to a TB treatment facility? | Internal referral, ideally, patients referred to the TB polyclinic do not pass through the room and mix with other patients to avoid nosocomial infection of other patients and the patient's family |
| 4 | What are the main challenges in integrating dental health services into TB programs? | Health human resources should have participated in TB training |
| 5 | What are the strategies to increase awareness about the relationship between TB and dental health among the community? | Through socialization and education on dental health in TB patients and their families |
| 6 | Are there any special protocols/SOPs for the prevention of TB infection at dental clinics? | There are special protocols in the PPI program |
| 7 | Is there data on the prevalence of dental and oral | There is no data on the prevalence of dental and oral |

| No | Question | Answer |
|----|---|---|
| | problems in TB patients at your local health center? | problems in TB patients |
| 8 | Have you ever collaborated with dental health programs in the treatment of TB patients? | TB program holders will collaborate if there are TB patients who complain about dental health problems |
| 9 | What do you think about the importance of collaboration between TB programs and dental health services? | Collaboration between TB programs and dental health services is crucial in efforts to prevent TB transmission |
| 10 | What are your recommendations to improve the detection of TB cases through dental health services? | Create a pocket book and create a TB prevention and control plan |

Table 2. Description conclusion to the dental program holder's answer

| No | Question | Answer |
|----|--|---|
| 1 | Have you ever had a child/adult patient with suspicious symptoms of TB in dental practice? | Pediatric/adult patients with suspicious symptoms of TB have come to dental service practice |
| 2 | How often do you see patients with suspicious symptoms for TB in your daily dental practice? | Patients with suspicious symptoms of TB rarely come to dental practice, about 1 year there are 5 patients |
| 3 | What is the procedure you do if you suspect a dental patient who may have TB? | Check the status of the patient's medical records, wear complete PPE, refer internally to the general staff, coordinate with TB officers. |
| 4 | What are the main challenges in providing dental care to patients undergoing TB treatment? | Patients are often not open with their disease history and patients are less cooperative so operators are at risk of contracting TB |
| 5 | How do you educate dental patients about the risks of TB and the importance of early detection? | Maintain dental and oral hygiene, consistently take medication and control routines and equipment for brushing teeth to be worn separately from family members |
| 6 | Are there any special protocols/SOPs for the prevention of TB infection at dental clinics? | There are specific protocols for the prevention of TB infection and collaborating with TB program holders |
| 7 | Have you ever collaborated with the TB program in handling dental health problems? | Collaboration with TB programs in handling dental health problems |
| 8 | What is your experience in collaborating with TB officers for patient handling? | Checking medical records regarding the current disease history, if it is found that the patient has TB, it is recommended to complete TB treatment first and then provide an explanation about maintaining dental and oral health |
| 9 | What are the manifestations of TB that can be found in the oral cavity? | Dental caries, gingivitis, chronic stomatitis, there are lesions, ulcers on the tongue and gingiva |
| 10 | What information do you think is most important to include in a guidebook on TB and dental health? | Efforts to maintain dental and oral health for TB patients, tooth brushing movements and healthy food consumption |

Discussion

Dental and oral health services are carried out in each phase of individual growth and development through a life cycle approach and are provided comprehensively by paying attention to the specificity of treatment needs in certain phases. Dental and oral health services for children and adolescents as carried out by prioritizing promotive and preventive approaches without neglecting curative and rehabilitative approaches (Himmamie et al., 2019)(Emini et al., 2020)(Nugroho & Tiana, 2024).

Tooth extraction scars can be a place for MTB to enter the oral cavity (Sezer et al., 2004). Manifestations of primary TB in the oral cavity regarding the gums, mucobuccal folds, and areas where teeth were extracted, the occurrence of TB lesions in the oral cavity of patients after tooth extraction in the form of persistent ulcer lesions (James et al., 2008). TB lesions in the oral cavity are usually chronic ulcers that are not painful, nodular, granular, or leukoplakia (Neville, 2002)(Chi et al., 2011).

Research (Amperawati et al., 2016), showed that 40 respondents with TB in the soft tissue condition of the oral cavity obtained 5% periodontitis, 10% gingivitis and 2.5% nodules. Cases of

Tuberculosis are rare in the oral cavity, which is around 0.05 – 5% of total cases, this must remain a concern by dental clinicians (Tita Kartika Dewi & Tritania Ambarwati, 2022). Dental hygienists (drg and TGM) can play an important role in the detection of various systemic diseases in the oral cavity, including tuberculosis. Dental health workers should be able to recognize the common signs and symptoms of a systemic disease, so that they can provide treatment to patients faster and always be aware of the spread of the disease by carrying out precautionary standards for each patient, so as to help eliminate the spread of the disease in the community (Nuraeni, 2009)(Kalanjati, 2020)(Nuraeni, 2021)(Lestari & Basyar, 2023).

CONCLUSION

This study highlights the importance of integration between dental health services and Tuberculosis (TB) control programs to improve TB detection and prevention in the community. Findings show that, despite coordination between dental health workers and TB program holders, dental facilities still lack specific guidelines for TB screening, while dental health workers are faced with the risk of nosocomial infections and limited TB training. Oral manifestations of TB such as caries, gingivitis, and ulceration need to be recognized for early detection, confirming the important role of dental health workers in identifying systemic disease. This study contributes to the understanding of the need for specialized training, infection prevention protocols, and increased personal protective equipment (PPE) in dental clinics to minimize the spread of TB. A limitation of this study is the lack of data on the prevalence of dental health cases in TB patients, with future research opportunities that include developing specific guidelines for TB screening in dental clinics as well as evaluating the impact of TB training on dental health worker competence.

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