

Research Report

## Strengthening Maternal Social Support and Promoting Child Dental and Oral Health Through SIKATIN (Tooth Brushing Reminder App)

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### ABSTRACT

**Background:** Downloadable health applications are nothing new for the public. Smartphone use has been steadily increased in years, including increased smartphone use in mothers of kindergarten students in Made Urban Village, Surabaya. Therefore, smartphone applications can be effective media in promoting child dental and oral health. The prevalence of caries in Made Kindergarten was 95%, and it was concerning. Therefore, the SIKATIN app works by reminding mothers about tooth brushing schedules for their children and motivating them to pay extra care for children's dental and oral health. **Purpose:** Mothers are motivated to maintain their children's dental and oral health. **Method:** The empowerment program helped to promote the SIKATIN app use, and the evaluation was based on the total download. **Results:** 100% of mothers of kindergartners achieved all indicators of success. **Conclusion:** 100% of the mothers of kindergartners in Made Urban Village has downloaded the SIKATIN application.

**Keywords:** Oral and dental health; application; mother.

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### INTRODUCTION

Application means the use or implementation of a concept. Application also means a computer program created to help the community in carrying out its activities.<sup>1</sup> Mobile health applications have been getting more popular. They become more and more popular because they provide many advantages, including in dental and oral health care.<sup>2</sup> Increased use of applications in dentistry can be a testament to the successful provision of preventive dental and oral health care for children and their parents.<sup>3</sup>

Health workers and non-health workers can make promotive and preventive efforts in handling dental caries in children. Parents, especially mothers, are non-health workers, but they have an essential role in maintaining their children's dental and oral health.<sup>4</sup>

Maternal relationships will help children grow and develop. Children under five identify their mothers as role models that adopt their mothers' behaviors and points of view. Therefore, children's dental health is also determined by maternal behavior. Knowledge, attitudes, and values influence maternal behavior before adopting healthy

behaviors, abilities, and support systems that help manifest health behaviors.<sup>5</sup>

Caries in children is the most common oral health problem. In 2009, the World Health Organization (WHO) reported that the incidence of caries worldwide was 60–90%. In 2004, Taverud reported classification of caries prevalence in children based on age — 1 year (5%), 2 years (10%), 3 years (10%), 4 years (55%), and 5 years (75%).

The prevalence of dental caries in Indonesia tends to increase. The mean of DMF-T is 67.3%. The dental caries experience in 5-year-old children is  $\geq 6$  (Severe Early Childhood Caries or S-ECC). The dental caries experience in 12-year-old children is 1.2–2.6, which falls under the low caries category, and the dental caries experience in persona aged 25–44 is 5.0–8.9, which also falls under low caries category (RISKESDAS, 2018). Indonesia Bebas Karies 2030 (Caries-Free Indonesia by 2030) is one of the government programs to improve public dental and oral health. This program is regulated under the regulation of the Minister of Health Number 89 of 2015.

In consideration of the problem in question, we created an empowerment program using the “SIKATIN” app

for mothers of kindergarteners in Made Urban Village. SIKATIN app reminds its users when to have a dental check-up, tooth brushing, and change toothbrush as well as encourages mothers to maintain their children's dental health.

## MATERIALS AND METHODS

This program aims to encourage mothers to maintain their children's dental health through the SIKATIN app in Made Urban Village. It is also helping mothers in maintaining their children's dental and oral health. Helping mothers remember when to have a dental check-up, change the toothbrush and to encourage mothers to maintain their children's dental and oral health. This program used Android-based media.

Respondents of this program is 20 mothers of kindergarten children in Made area. After receiving counseling about this application tutorial, they were evaluated with questionnaire to see whether the mothers can use the application well or not.

## RESULTS

The SIKATIN program was carried out on 22 May 2019. SIKATIN application users were 20 mothers of kindergarteners in Made Urban Village, Surabaya. The mothers received the app installation link via WhatsApp. The mothers were then registered by providing their basic information. Once registered, they can collect points redeemable for free scaling vouchers. The points are collectible by having regular tooth brushing through a self-report feature in the app. The evaluation results of SIKATIN app: first, all mothers were able to install the application smoothly; second, all mothers were able to use the application; third, all mothers were able to understand how to redeem the points for a free scaling voucher.

## DISCUSSION

The mobile application-based health program has been known to function to improve the efficiency of self-care for patients in order to manage symptoms that are felt without the need to come to a health care center.<sup>6</sup> Based on research that has been done, in addition to providing information and monitoring of users, some applications also provide feedback, send patient data to health care centers, also offer online consulting services.<sup>7</sup>

Health applications based on mobile applications are also referred to as an ideal and efficient platform for community empowerment or health intervention programs.<sup>8</sup> This is because the application can easily reach all target groups of the program,<sup>9</sup> is cheaper, and can be monitored by health workers.<sup>10</sup>

Moreover, in this modern era, almost all walks of life have smartphones and have been used as popular communication tools.<sup>11</sup> The result showed that all mothers have successfully registered by entering their and their children's basic data. This shows that smartphone applications are easily run by respondents. The instructions given are also easy to understand, so that all respondents can fill in well.

The SWOT analysis of this online application: (1) Strength: The application helps mothers to remember the time for tooth brushing. Therefore, this app helps mothers and children to maintain their dental and oral health. Also, mothers will be notified about the time to change toothbrush and have a dental check-up. (2) Weakness: The implementing student did not have enough time to explain how to use the SIKATIN app to the mothers. No financial or technical support during app installation that some mothers had trouble installing the app. Some cadres were not accustomed to using new apps. (3) Opportunity: The program potentially helps mothers and children in maintaining their dental and oral health. Mothers would be motivated to collect points by regularly brush their teeth—the points are redeemable for a free scaling voucher at Made Public Health Center. (4) Threat: The app requires internet access, and not all mothers have that.

This program is designed as a reminder and source of information that can be accessed easily by mothers. Besides, this application also provides mothers with videos and booklets of dental and oral health information.

## CONCLUSION

SIKATIN benefits mothers and children in maintaining their dental and oral health by reminding them when to have tooth brushing, changing toothbrushes, and having a dental check-up. SIKATIN is expected to help mothers in encouraging their children to brush their teeth to maintain their dental and oral health.

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