



## Mobile Based Oral Health Promotion: A Review

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### Abstract

Today, the Information and Communication Technology has not just been limited to for the purpose of basic interaction but has reached to higher limits. Today the patients are able to monitor, record and maintain their physical and mental health via a small portable device: the Mobile Phones. The smart phone technology and the available Wi-Fi supporting systems have increased the accessibility, effectiveness, and usability of the data. The need for oral health promotion programs among the general healthy population has expanded in recent years for the reasons as health promotion and timely dental health management. The objective of this article was to review the mobile based oral health applications among the general population. This article will explore about the significant impact the mobile application has made of the oral health and its usage among the population. Mobile based applications for the assessment of oral health care should be emphasized and be available for general population.

**Keywords:** ICT, Oral health, Health promotion, apps.

## INTRODUCTION

In today's knowledge society, new information and communication technologies (ICT) have become symbols of development, improvement, and quality that shape our lives and play an important role in health education in terms of disease prevention, diagnosis, and treatment.

Patients now have the means to track their dental health, behaviors, and goals thanks to the acceptance of mobile devices and smartphone technology, as well as the expansion of Wi-Fi-supporting infrastructure. Prior to the invention of mobile phones, most health care services were delivered to patients face to face. Smartphones have been used to manage individual behaviors and health issues, such as smoking cessation, medication adherence, and Parkinson disease progression monitoring, to name a few.<sup>[1]</sup>

The need for health promotion programs among the general healthy population has expanded in recent years, and mobile app programs have been used to prevent and manage risk factors, enhance physical activity, promote weight reduction, and reduce smoking, stress, depression, and obesity. Mobile app programs were found to be more cost-effective than traditional techniques such as paper-based or mobile phone-based screening in a study of cardiovascular screening.<sup>[2]</sup>

Given the fast speed of modern life, many people have difficulty obtaining health promotion programs, such as advice, information, feedback, and self-monitoring; hence, mobile app programs could provide an alternative. Mobile app programs were found to be beneficial in enhancing physical activity and good eating habits in a recent literature review. However, because this evaluation was confined to interventions to promote physical activity and diet in children and adults, it was unable to accurately establish the benefits of using a mobile app for holistic health promotion behaviour in adults. In terms of the prevalence of health risk behaviours and the potential for scalability and wide distribution of mobile app programmes, the adult population is an important demographic.<sup>[1,3]</sup>

## Smartphones for Improving Oral Hygiene

Children's oral health behaviour has been modified utilizing apps that use game-playing methodology. These applications frequently include educational content that is congruent with evidence-based dentistry to help children with oral self-care; nevertheless, there is still space for improvement. Texting is used in some apps to assist patients decrease dental plaque and gingival bleeding. According to a 2019 systematic review, mobile phones can be used as an addition to treat gingivitis and improve oral hygiene. A few smartphone apps also include behavior-change approaches that target psychosocial aspects in order to monitor and enhance the dental health of orthodontic patients. We hope to see these types of apps becoming publicly available shortly, as these studies are still in the early. <sup>[1,4]</sup>

## Assessment of Caries Risk in the Community

Since the behaviour and diet play a role in caries development, most caries risk assessment systems rely on patients' self-reported behaviours and diet choices. Cell phones and other mobile devices could be used to collect this data. An early version of a mobile tablet app that can do this is being developed for use by community health professionals and peer educators who do not have formal dental training to engage marginalized groups in caries risk assessment. <sup>[1,5,6]</sup>

## Mobile Phones for Oral Health Education and Promotion

Theoretically, using an app to enhance awareness of evidence-based oral health information has budgetary advantages over traditional approaches such as leaflets because there are no costs involved with printing, storage, distribution, or disposal. Unlike tangible products, apps are instantaneously scalable and updatable, with the cost of generating one app being the same as producing multiples. Apps offer an advantage over text message reminders in motivating better oral health since they can employ local reminders generated by the app itself.

Because of their widespread acceptance, tremendous technological capabilities, and mobility – individuals prefer to have their phones with them at all times and establish strong emotional attachments to them – mobile devices are a useful means of delivering health interventions.

'We have grown to love our mobile devices, sick or well. They provide instant gratification by providing a powerful link to persons we care about, as well as access to images, sports scores, movies, and gossip about pals. That small gizmo is so uplifting and well-liked. It links us to the rest of the world.

This positive emotional attachment may benefit health promotion via a mobile device being accepted more readily than traditional means, especially among those who have grown up with the technology. People spend more time with their mobile phones than with their partners or at work, meaning health intervention can be delivered anytime and anywhere. <sup>[7]</sup>

## Future

We believe that developing solutions that combine the tasks of oral disease detection, diagnosis, or both; risk assessment; and interactive education will be an important component of the next phase of using mobile phones in oral health education and promotion. To achieve patient-centered clinical data gathering for diagnosis, high-quality photos are required. Dental patients will be able to use smartphone tools to screen, monitor, and improve their oral health thanks to the improvement of smartphone cameras and various intraoral cameras that can be connected via Wi-Fi connections. However, there are drawbacks to this strategy. The ability of patients to take appropriate intraoral pictures, for example, has not been adequately tested. These challenges need to be recognized, and strategies that address them need to be incorporated into robust research.

## CONCLUSION

For the general healthy population, mobile app-based interventions could be beneficial in increasing a variety of oral health promotion habits, such as diet modification. The majority of the app interventions examined centered on tracking health and behaviour modification, as well as providing feedback or health-related information.

When social support is emphasized and entertainment or visualization features are added, app programmes may be more effective. The efficacy of mobile apps for oral health promotion in underdeveloped nations should be investigated further in the future.

## REFERENCES

1. Xiao, J., Fiscella, K. A., & Meyerowitz, C. (2021). mDentistry: A powerful tool to improve oral health of a broad population in the digital era. *The Journal of the American Dental Association*, 152(9), 713-716.

2. Lee, M., Lee, H., Kim, Y., Kim, J., Cho, M., Jang, J., & Jang, H. (2018). Mobile app-based health promotion programs: a systematic review of the literature. *International journal of environmental research and public health*, 15(12), 2838.
3. Wang, J., Wang, Y., Wei, C., Yao, N., Yuan, A., Shan, Y., & Yuan, C. (2014). Smartphone interventions for long-term health management of chronic diseases: an integrative review. *Telemedicine and e-Health*, 20(6), 570-583.
4. Fijačko, N., Gosak, L., Cilar, L., Novšak, A., Creber, R. M., Skok, P., & Štiglic, G. (2020). The effects of gamification and oral self-care on oral hygiene in children: systematic search in app stores and evaluation of apps. *JMIR mHealth and uHealth*, 8(7), e16365.
5. Chinn, D. C. H., Levine, M. J., Matos, M. S., Findley, D. S., & Edelstein, D. B. L. (2013). An interprofessional collaborative approach in the development of a caries risk assessment mobile tablet application: My Smile Buddy. *Journal of health care for the poor and underserved*, 24(3), 1010.
6. Karlinsey R. Development and Feasibility of Prevention Minded Oral Health Mobile App Based on Dietary Selections and Oral Hygiene Events. National Institutes of Health, National Institute.
7. Underwood, B., Birdsall, J., & Kay, E. (2015). The use of a mobile app to motivate evidence-based oral hygiene behaviour. *British dental journal*, 219(4), E2-E2.

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