

HYGIENE APPS

Check out apps before recommending them



BACKGROUND

With the ubiquitous use of mobile phones has come the development of mobile applications (apps) that are small, individual software units that have limited and isolated functionality, such as a game or mobile web browsing. They allow consumers to customize what their devices can do. In 2017 about 197 billion app downloads were performed, an increase from the 149 billion downloads in 2016. Persons age 18 to 24 years spend an average of 93.5 hours per month using apps. The availability of health care apps has increased significantly in recent time, with a current count of more than 97,000 mobile apps related to health and fitness. Patients like using these apps and consider educational apps to be a valuable tool in their health care endeavors. Although apps provide easy access to information and potentially could improve patient engagement and adherence to treatment regimens, they are unregulated and may contain inaccuracies that can lead patients astray (Table 1). The availability of patient-focused apps regarding oral hygiene was surveyed, with a profiling of the characteristics of the 20 most popular apps currently available on the App Store and Google Play.

METHODS

Oral hygiene-related search terms were used to identify apps on the App Store or Google Play. The 20 most popular apps for each search term were profiled.

Table 1. The Advantages and Disadvantages of the Use of Apps in Healthcare

Advantages	Disadvantages
Easy access to information	Lack of regulation
Portability of information	App content can be inaccurate if not approved and regulated
Convenient to use	Excessive reliance on apps rather than appointments with healthcare professionals
Improved patient engagement	
Improved information provision to patients (use of different formats to convey information in one resource)	
Increased access to point-of-care tools for clinicians	
Can include patient reminders	
Can be used for patient motivation	
Can be used to track patient activity and compliance	

(Courtesy of Parker K, Bharmal RV, Sharif MO: The availability and characteristics of patient-focused oral hygiene apps. *Br Dent J* 226:600-604, 2019.)

RESULTS

Generally, Google Play had more apps available than the App Store. The search terms that procured the greatest numbers of apps were 'tooth brushing', 'teeth cleaning', and 'oral hygiene'. The majority of the apps identified were developed after 2015. They tended to be focused on the provision of oral hygiene instructions and were free.

Among the approaches used by app developers to improve oral hygiene were the provision of specific care advice, the ability to time tooth brushing, and games. The use of multiple approaches may improve adherence to effective oral hygiene practices.

None of the apps included independent dental or oral health organization approval for their development and publication. None included research testing of the app. In addition, none clearly indicated if they were developed based on theoretical models of behavior change, which have been shown to be the most effective interventions.

DISCUSSION

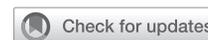
The information provided in the most common mobile health care apps was not subject to regulation and was not attributed to any professional dental organization. Thus dental health care professionals must evaluate the quality and accuracy of the app content before they can confidently recommend them to patients.

Clinical Significance

Mobile apps are widely used and valued by most of the population. The development of oral health care apps has the potential to help patients adhere to their dental treatment plans and achieve better oral health. However, dental professionals should use caution when considering oral hygiene or oral health care apps for their patients. Although there are advantages in terms of ease of use and availability for patient access, disadvantages include the lack of any regulation of the content that is published. Dentistry should take a role in evaluating, validating, and providing quality assurance in the development of apps. In addition, best practice standards and guidelines for app use need to be established.

IMPLANTS

Use of prophylactic antibiotics



BACKGROUND

The prophylactic use of antibiotics for patients having implant surgery is controversial. No evidence has clearly delineated the effect of antibiotic use on early implant failure rate. In addition, the dental community is committed to reducing the use of antibiotics because of the risk of developing resistant bacterial strains. A randomized clinical trial was undertaken to determine early implant failure rates between a group of patients who received a single dose of preoperative antibiotic and a group of patients who received no antibiotic prophylaxis preoperatively.

METHODS

A total of 447 patients receiving 963 implants were randomly assigned to receive either a single dose of antibiotic 1 hour before surgery (AB group) or no antibiotic before surgery (noAB group). A total of 223 patients (535 implants) were in the AB group, and they ranged in age from 15 to 91 years (mean age 56.0 years). A total of 224 patients (428 implants) were in the noAB group, and they ranged in age from 16 to 89 years (mean age 50.8 years). The implants represented 4 commercial brands. Outcomes were evaluated 4 months after either a 1-stage or 2-stage implant procedure, all of which were performed by experienced implant surgeons. Standard protocols for implant placement were followed. Failure was defined as the removal of an implant for any reason. The failure rates of the 2 groups were compared statistically at both a patient and an implant level.

RESULTS

Failure occurred in 40 patients, with 11 in the AB group (4.9%) and 29 in the noAB group (12.9%). The implant failure rate for

the AB group was significantly lower than that for the noAB group, with rates of 2.2% versus 7.5%, respectively. Forty-four implants failed overall, with 12 in the AB group and 32 in the noAB group.

DISCUSSION

Prophylactic antibiotic use markedly improved early implant survival rate in this study. The difference between using a single antibiotic dose preoperatively and using no antibiotic was statistically significant, favoring the use of antibiotics.

Clinical Significance

Giving a single dose of antibiotic 1 hour before implant placement proved to have a significant positive effect on the outcome of implant surgery compared to not having any antibiotic. The effect was seen both at a patient level and at an implant level.

Kashani H, Hilon J, Rasoul MH, et al: Influence of a single preoperative dose of antibiotics on the early implant failure rate. A randomized clinical trial. *Clin Implant Dent Relat Res* 21:278-283, 2019

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