mPrevention: Content analysis of iOS and Android smart phone applications in regard to primary cardiovascular risk factor prevention

Authors:
A. Ahmadvand [1], A. Bourouni [2], N. Mohammadi [2], H. Jamshidi [3], [1]Tehran University of Medical Sciences, Department of Epidemiology and Biostatistics - Tehran - Iran (Islamic Republic of), [2]Tadbir Pharmed Investment Corporation, Business Research and Development Department - Tehran - Iran (Islamic Republic of), [3]Shahid Beheshti University of Medical Sciences, Department of Pharmacy - Tehran - Iran (Islamic Republic of),

Topic(s):
Primary cardiovascular prevention: interventions and outcomes

Purpose: With the increasing access to and popularity of smart phones, a great pool of applications (apps) has been developed rapidly concerning health issues, including cardiovascular diseases and risk factors. We analyzed the content of "health and fitness" apps from the two fastest-growing platforms (namely, Apple's iOS and Google's Android) distributed through their official online stores (itunes.com and market.android.com respectively). We sought to see how many apps are relevant to controlling for modifiable cardiovascular risk factors.

Methods: We examined popular apps on iTunes and Android Market. Two reviewers analyzed the information provided in specific web-pages for each app, and coded it independently for their (1) primary and secondary subject focus areas; (2) language; (3) price; and (4) relevance to the category ("Health and Fitness"). Because of the dynamic nature of popular apps list, we took the final list on January 25, 2012.

Results: A total of 240 popular apps on iTunes and 24 on Android Market were assessed. Fifty-four (22.5%) iOS apps declared the "fitness" as their primary and secondary focus areas followed by "exercise" (20 [8.3%]), "diet" (16 [6.7%]), "health information exchange" (12 [5.0%]), "calorie counter" (10 [4.2%]), "nutritional information" (10 [4.2%]), and "weight tracking" (9 [3.8%]). Five (20.8%) Android apps stated "exercise" as their primary and secondary focus areas followed by "health information exchange" (3 [12.5%]), "diet" (2 [8.3%]), "fitness" (2 [8.3%]), "heart rate measurement" (2 [8.3%]), "weight loss" (2 [8.3%) and "nutritional information" (2 [8.3%]). All iOS (240/240) and 95.8% (23/24) of the Android apps on the final list were in English and all were free of charge. Twenty-two (9.2%) iOS and 1 (4.2%) of Android apps were irrelevant to "health and fitness".

Conclusions: It seems that the most prevalent apps that deliberately gather attention from developer and consumer side are related to "fitness", "exercise", "weight tracking", "diet", and "weight loss". This may be because of the business cases behind app development on physical inactivity and obesity, developing free apps or less popularity of other cardiovascular risk factors from developers' perspective. We could not find a comparable bulk of popular apps which consider other modifiable risk factors such as hypertension, high blood cholesterol, smoking, and diabetes. Future research may reinforce content improvement for already popular apps, assess their real effectiveness in controlling and modifying risk factor status and inform the need for app development on other risk factors.