Features, Behavioral Change Techniques, and Quality of the Most Popular Mobile Apps to Measure Physical Activity: Systematic Search in App Stores

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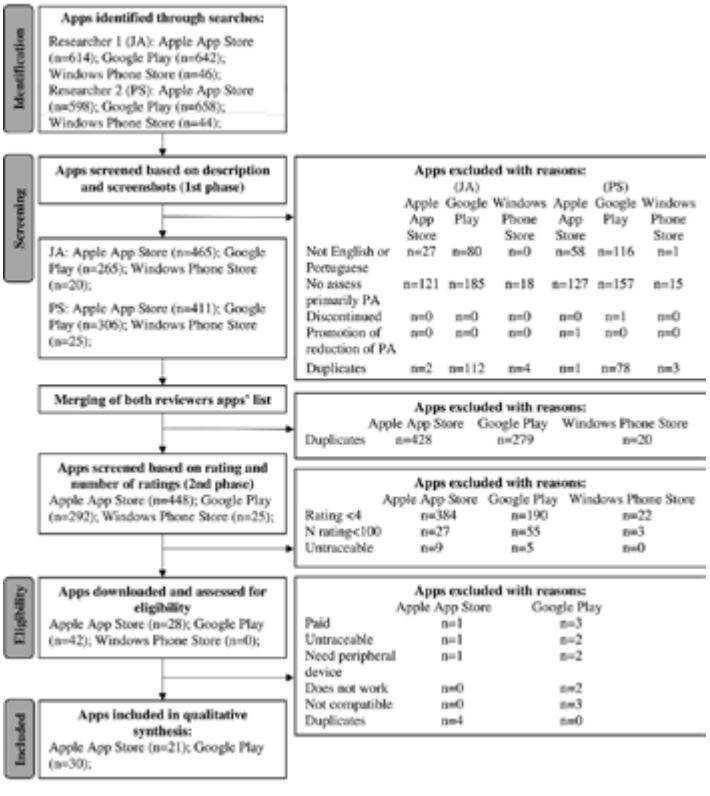
It is estimated that 23% of adults and 55% of older adults do not meet the recommended levels of physical activity. Thus, promoting physical activity is of paramount importance, but it requires the use of low-cost resources to facilitate universal access without depleting the health system. Existing apps constitute an opportunity, but it is difficult for the layperson to select the most appropriate one, due to the lack of information and quality.

The objective of this study was to assess the features, content, and quality of the most popular apps that can be used to measure and, potentially, promote physical activity.



Systematic searches were conducted on Apple App Store, Google Play, and Windows Phone Store between December 2017 and January 2018. Apps were included if their primary objective was to assess physical activity, if they had a user rating of at least 4, if their number of ratings was ≥100, and if they were free. Included apps were independently assessed by two reviewers regarding aspects related to technical information, physical activity, behavioral change techniques, and quality. Data were analyzed using means and SDs or frequencies and percentages.

Of 51 apps included, only one mentioned the involvement of health professionals. Regarding physical activity, most apps measured steps and distance (n=11) or steps, distance, and time (n=17). Only 18 apps, all of which measured number of steps, followed the guidelines on recommendations for physical activity. On average, 5.5 (SD 1.8) behavioral change techniques were identified per app; the most frequently used techniques were "provide feedback on performance" (n=50) and "prompt self-monitoring of behavior" (n=50). The overall quality score was 3.88 (SD 0.34).

The quality of apps content, should be improved, namely by the use of international guidelines on physical activity. Additionally, a more in-depth assessment of apps (e.g. reliability and validity) should be performed before releasing them for public use.