

## MOBILE FITNESS APPS USAGE AMONG FITNESS CENTERS ATTENDERS

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### Keywords:

- fitness centers
- mobile apps
- exercise

### Abstract:

**Introduction:** The main purpose of this study was to investigate using mobile fitness-apps by fitness centers attenders.

**Material and methods:** A total of 92 fitness centers attenders (48 males, 44 females), aged 17-56 (M=29,89±8,13 years) agreed to participate in the survey. Diagnostic poll method was adopted, and participants filled in an anonymous questionnaire containing questions about their fitness apps usage. In statistical analyses descriptive statistics, and  $\chi^2$  test with Cramer's V formula as a measure of effect size in contingency tables larger than 2x2 or  $\phi$  formula for tables 2x2 were used.

**Results:** Almost half of the respondents (48,92%) declared themselves as actual (28,26%) or past (20,66%) fitness-apps users. The most popular app is Endomondo, especially among females, followed by exercise guides and workout plans. Free or freemium versions are preferred. About one third (28,89%) of fitness-app users reported that they shared their performances through social media and a similar proportion (33,33%) prefer direct comparisons of their results with results of their acquaintances. Nearly every second user (48,89%) feel more or even definitely motivated to exercise by the apps. However, only 4 persons (8,89%) declared that they couldn't be able to continue their exercise regimen without being supported by their apps. All apps are perceived as easy-to-use.

### INTRODUCTION

There is a consensus among health experts that physical activity is one of the most important behaviors exerting powerful effects on our being in all its aspects: cognitive, emotional, social, and physical (Dishman, Washburn, Heath 2004). Therefore, lack of physical activity is considered as a serious public health problem, playing an important role in the etiology of many diseases, like hypertension, type II diabetes mellitus, coronary heart disease, to name but a few. Due to its health-enhancing effects, physical activity, especially in the form of regular exercising, is strongly recommended as a part of a healthy lifestyle (Anshel 2014). However, managing exercise regimen is not an easy task. Many people find it difficult to maintain their exercise level for longer than a half a year (Wilson, Brookfield 2009). It is probably due to complex nature of this behavior. Regular exercising demands overcoming numerous barriers – emotional, physical, social, time constraints etc. Promoters of an evolutionary view on physical activity claim that we have innate physiological need of being active (as it is important regulator of many biochemical and physiological processes), but at the same time on the psychological level we are more prone to avoiding it (in order to save energy, not wasting it “unproductively” on actions not relating to our survival) (Eaton, Shostak, Konner 1998). As human beings, fortunately, we are aware of our limitations and we can actively seek ways of regulating behaviors of ourselves and of other people. Various

approaches to promoting exercise and other forms of physical activity exists – environmental, behavioral, cognitive etc. (Dishman, Washburn, Heath 2004, Anshel, 2014).

One of the modern ways offering unique opportunities to support one's exercise and other health behaviors is using special mobile applications, that help tracking physical activity, provide information how to perform exercises or help one's motivation by enhancing implementation of self-regulatory strategies like goal setting or performance feedback (Middelweerd et al 2014, Conroy, Yang, Maher 2014, Vickey, Breslin, Williams 2013). Another important feature of such technology are social interactions in the form of sharing results via social networks, like Facebook, a cheer heard by an exerciser and even motivational messages from world's top athletes – a technology used in Nike+ App (Vickey, Breslin, Williams 2013). All of the above mentioned properties of mobile fitness apps, along with their accessibility and little or no cost, contributed to their popularity, reaching millions of users worldwide. According to Ehlers and Huberty (2014) over 19% of smartphone owners have installed at least one app belonging to the health category, thus making them potentially useful mean for promoting and maintaining physical activity behaviors. However, little is known on how often the said apps are used by different segments of people who installed them in their mobile devices, for what purposes they are used, how they are perceived by its users etc.

Therefore, the principal objective of the study was to explore fitness-apps usage among fitness centers attenders. Specifically, it was aimed at gaining insight how many fitness centers attenders use fitness-apps in their exercising, what kinds of apps are installed on their mobile devices, do users of fitness apps share their results via social media and/or with friends, and how the said apps are assessed by them?

## **MATERIAL AND METHODS**

A total of 92 fitness centers attenders (including 48 males and 44 females), aged 17 to 56 (females 18 to 51, males 17 to 56), mean  $29,89 \pm 8,13$  years (females  $31,34 \pm 8,25$ , males  $28,56 \pm 7,86$ ) agreed to participate in the survey. Fifty six subjects (60,87%) declared themselves as a gym users, 24 (26,09%) are fitness classes attenders and 12 subjects (13,04%) do their exercise programs in both places. Preferred forms of attendance didn't significantly differentiated females and males ( $\chi^2=0,61$ ;  $p=0,736$ ). All participants were asked to fill in an anonymous questionnaire containing questions about their fitness apps usage.

Descriptive statistics (means and standard deviations) were used to describe the data and to test differences between groups  $\chi^2$  test and  $\chi^2$  with Yate's correction in cases when some of the expected values was less than 5, were used. Additionally, Cramer's V statistic as a measure of effect size in contingency tables larger than 2 x 2 or  $\phi$  statistic for tables 2 x 2. It was assumed that value under 0,30 means small effect size (weak association between variables), between 0.30 and 0.50 medium effect size (moderate association), and above 0.50 large effect size (strong association) (Speed, Andrsen 2000).

## **RESULTS**

### **The range of fitness-app use among respondents**

Almost half of the respondents ( $n=45$ ; 48,92%) declared themselves as actual (28,26%) or past (20,66%) fitness-apps users with no significant difference in proportion of males and females ( $\chi^2_{(df=2)}=3,20$ ;  $p=0,525$ ; Cramér's  $V=0,17$ ). The most common frequency of using these kind of apps for exercise tracking purposes was 2-3 times a week ( $n=19$ ), although some respondents use them daily ( $n=9$ ), while the others rarely – once a week or even less. Frequency of using fitness-apps was weakly related to sex: only the trend toward significance of difference between proportions of female and male users was observed:  $\chi^2_{(df=2)}=17,16$ ;

$p=0,067$ ; Cramér's  $V=0,38$ . Among everyday users there were more males than females (7 vs 2), while the latter more frequently declared themselves as seldom users (6 vs 1).

### **Fitness-apps categories and their download sources**

Most fitness apps are downloaded from the store GooglePlay ( $n=26$ ), probably because of greater popularity of devices fitted with Android operating system, then from iStore ( $n=13$ ) and WinPhone ( $n=5$ ). Additionally one person indicated both sources - Google Play and iStore (probably an owner of two mobile devices). The most popular application is Endomondo, which is/was used (alone or along with other apps) by 24 respondents, especially females (significance of difference between both sexes:  $\chi^2_{(df=21)}=35,28$ ,  $p=0,027$ , Cramér's  $V=0,78$ ). Next in the list of the most popular were exercise guides and programs, like Seven minutes workout, KFD Atlas, Fitness Kulturstyka. Among other apps listed by name were also Cardiotrainer, Nike+, Polar Flow, Runtastic, Workout Trainer, JEFIT, Seven Minutes Workout and S Health. All of them are examples of exercise trackers, from which users could obtain information of calories burned by them during activity, steps and/or distance covered, workout schedules, progress monitoring, feedback and reminders. Some respondents mentioned only general comments, like apps with motivators or workout plans. Forms of physical activity that are most frequently supported by fitness-apps are: cardio workouts, resistance exercises, running (outdoor and/or on a treadmill), fitness classes, biking/spinning and Tabata intervals. In general, all except for one participant preferred using free or freemium apps, so apps that are completely free of charge or apps that are free in their basic versions with fees charged for versions extended on more sophisticated functions.

### **Social media featuring**

About one third (28,89%) of fitness apps users reported that they shared their performances through social media – especially females ( $n=10$  vs  $n=3$ ;  $\chi^2_{(df=1)}=3,92$ ,  $p=0,047$ ,  $\phi=0,31$ ). Similar proportion (33,33%) prefer direct comparing their results with results of their acquaintances, however in this case the difference between sexes was insignificant ( $\chi^2_{(df=1)}=1,01$ ;  $p=0,316$ ,  $\phi=0,14$ ).

### **Perceiving motivational potential of fitness-apps**

Nearly every second user of fitness-apps ( $n=22$ , 48,89%) feels more or even definitely more motivated to exercise thanks to them, 16 (35,56%) users are not sure, and the remaining don't feel motivated to exercise by their fitness-apps. In this regard differences between males and females were not observed ( $\chi^2_{(df=3)}=3,93$ ;  $p=0,269$ , Cramér's  $V=0,27$ ). However, only four respondents declared that they couldn't be able to continue their exercise regimen without being supported by their fitness-apps, seven persons are not sure if they could, and the remaining majority can easily imagine themselves exercising without their apps support. Again, the assessment of usefulness of apps were similar for males and females because no differences between them were observed ( $\chi^2_{(df=3)}=3,46$ ;  $p=0,466$ ; Cramér's  $V=0,27$ ). Perceived benefits of fitness-apps induce most of their users to recommend their friends to install them: such recommendations concerned 80% of apps users, irrespectively to their sex ( $\chi^2_{(df=1)}=1,27$ ;  $p=0,260$ ;  $\phi=0,15$ ).

### **Perceived ease of use**

With the exception of one person, all apps users perceive using them as easy or very easy.

## **DISCUSSION**

The main purpose of the study was to explore fitness-apps usage among fitness centers attenders in order to better understand this relatively new phenomenon. Mobile technologies has changed our life. Some of these changes may be treated as posing a threat to our mental

and physical health, like being addicted to social media and feedback from widely defined friends in the forms of “likes” and “hates” of our photos, comments etc. However, at the same time mobile devices became tools to promote and support health-related goals, such as diet and physical activity. By demonstrating techniques of making exercises, enabling tracking intensity and volume of physical activity, offering behavior change techniques (like goal-setting, reminding of activity etc.), mobile applications may offer unique possibilities for exercisers.

Our results suggest that, independent to sex, nearly every second fitness centres attender is or was a user of some kind of fitness-app. The most popular, especially among women, is Endomondo, which was downloaded by about half of fitness-app users. This application enables user to track the distance walked or run by GPS, to make use of the coach-function and compare results with results of other users by way of social media. Among other apps the most popular are apps offering exercise sets and workout plans. While the idea using of mobile technology to spread knowledge how to correctly do exercises and how to work out plans of workouts seem promising, it would be interesting to examine if they do not constitute – at least to some extent – an alternative to professional advice from personal coaches.

About half of respondents who are users of fitness-apps believed that they are valuable tool that enables them motivate themselves to exercise. On the opposite pole are 15,5% respondents for whom the said apps are of no value for their motivation purposes. However, even among those who have highly assessed usefulness of the apps, only few cannot imagine their workouts without such support. The result suggests that from one hand characteristics of fitness apps, many of which offers not only tools for tracking physical activity and a sets of exercises, but also some behavior change techniques like providing instruction on how to perform various activities, providing feedback on user performance, goal-setting or social support, perform really well. On the other hand, however, their users seem not to be dependent on them. An important feature of many fitness apps is a possibility of social feedback and social comparisons via social media or other forms of contact with others. It enables to show off with one’s performance to friends and fellows counting on positive feedback, but also to see what others are doing and comparing to them. In a study of Ehlers and Huberty (2014) women were not so much interested in features helping them receiving social support, but at the same time many of them value the possibility to connect and compete with others. In another study of young adults in Denmark, Middelweerd et al. (2015) found that respondents were not eager to use social media to share their performance results. In our study about one third of fitness app users shared their performances through social media, while similar proportion preferred direct comparisons of their results with results of their acquaintances.

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