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Physical and Sedentary Activity Among Facebook Users in Croatia

Ivana CRNKOVIĆ[a1], Janko BABIĆ [b] and Aleksandar RACZ[c]
[a] *Department of Physiotherapy, University of Applied Health Sciences, Zagreb, Croatia*
[b] *Department of Health Psychology, University of Applied Health Sciences Zagreb, Croatia*
[c] *Department of Public Health and Health Protection, University of Applied Health Studies Zagreb, Croatia*

Abstract. The aim of the research was to examine the level of physical activity of users of the social network in Croatia, the relation of the sociodemographic characteristics and the level of physical activity compared to the time spent on the following activity. The study involved 333 respondents who are active users of Facebook (FB). The short version of the IPAQ questionnaire and BMI Calculator were used to assess the physical activity of respondents. This research has determined that the BMI index (BMI) ranges from 16.04 to 42.25, average 24.00. The total level of physical activity of the participants, expressed through the Metabolic equivalent task (MET) is high, and according to the MET category the participants are in the high level of involvement category or HEPA active. There is a statistically significant correlation between the overall results obtained with the IPAQ compared to the MET category, BMI, quality of life and self-assessment of health in FB users. Participants spend on average 5 hours per day sitting during a week, and there is statistically significant correlation between the overall results of the IPAQ compared to the MET category and the time spent sitting. In conclusion: that involvement in social networks for participants in this study does not disturb the level of physical activity.

Keywords. health behavior, social networks, IPAQ.

1. Introduction

Today is the era of media and social networks have become an inevitable part of the present, making life, in general, more practical, more effective and simpler. Facebook (FB), as one of the leading social networks in both Croatia and the world, has a high rate of usage, statistics show that every day FB has 1.23 trillion users via mobile devices. The average time spent on the aforementioned social network is around 20 minutes. According to 2017 data, 67% of all the total time spent on digital social networks is on FB [1]. Long hours of FB use, especially at night, cause mostly the feeling of burning eyes, headaches and similar disorders [2], which can ultimately bring closer the results of research from the United States where the sedentary lifestyle is counterproductive and a predisposing factor to many diseases of the vascular system and the emergence of malignant outcomes [3], although users express they have a relief from the everyday life by

[1] Corresponding author, Ivana Crnković, ZVU, Mlinarska cesta 38, Zagreb. Email: ivana.crnkovic@zvu.hr.

using social networks. The research by Schank and Jonah [4] foresees extensive growth in the education and that online teaching in schools and higher education institutions will result in the reduction of physical activity within the pupils. Punamäki et al. [5] according to research by Straker et al. [6] confirmed the correlation between frequent use of ICT and sleep disorders in adolescents. The incidence of disease development in the musculoskeletal system correlates with the time spent using ICT in adulthood, but recent studies suggest that difficulties with the musculoskeletal system also occur in adolescents.

The prevalence of non-performance of physical activity in the 21st century is present in all age groups. The Internet and digitization have resulted in a sedentary way of life, either during work or during leisure time. The results of research on the relationship between time spent on social networks and physical activities are different [7]. Lajunen et al. [8] reported that home computer ownership was associated with increased risk of a higher BMI in adolescents, while possession of PC with Internet access was not statistically significantly related to BMI. Burke et al. state that they did not find correlation between computer time and physical activity [9].

There are a small number of researches in Croatia dealing with the assessment of the level of physical activity of users of social networks and their impact on health behavior in young adults is given in consideration of the above-mentioned research. Objectives of this study were to examine: (1) level of physical activity of social network users in Croatia, (2) relationship between the sociodemographic characteristics and the level of physical activity of the examined population, (3) relationship between the sociodemographic characteristics and the time spent sitting by the examined population.

2. Respondents and Methods

2.1. Sample Description

The study involved 333 respondents aged 14 to 60 (mean 28.10) who are active users of FB social network and they are part of a working-active population.

2.2. Measuring Instrument

For the purposes of this study, a questionnaire on sociodemographic data was used with questions about age, gender, education, health. For the purpose of this study, additional questions also were used: about assessing the quality of life and doing sports, BMI was calculated [10, 11]. The short version of the International Physical Activity Evaluation Questionnaire (IPAQ) was used to assess the physical activity of respondents [12]. The IPAQ was developed in 1997 with the aim to standardize physical activity measurements [13]. The IPAQ was often used as a measuring instrument in numerous studies whose results confirmed that the metering characteristics were satisfactory. The level of physical activity is estimated as sum of time (minutes) and frequency (days of the week) spent in each activity or domain through the Metabolic equivalent task (MET). Calculation of total results implies summation of duration and frequency of activity, for all types of activity in each domain. Calculation of results in a particular domain requires the values calculated for walking, moderate intensity physical activity and high intensity physical activity in that category. In this study a validated Croatian version of the questionnaire was used.

2.3. Procedure

Data were collected by the snowball method: the participants who agreed to participate in the survey were asked to send this questionnaire to FB friends. Members of the research team used personal FB accounts to publicly post with study information and a link to the survey. The theoretical part applied as the basic method a descriptive method of work with a review of relevant literature and research into the domain of physical activity of social network users. The survey was carried out from March to June 2016. Data processing used descriptive statistics (mean, range, minimum, maximum, standard deviation). Within the group and between the groups differences were analyzed by parametric (t-test) and non-parametric (Mann-Whitney-Utest) statistical-analytical procedures. Spearman's correlation coefficient was applied in the correlation analysis. SPSS Statistics 17.0 software was used for analyses.

3. Results

3.1. The Link between Sociodemographic Characteristics and the Time Spent Sitting by FB Users

There is a statistically significant correlation between the overall results obtained with the IPAQ relative to the MET category and the time spent sitting ($p<0,01$) (see Table 1). During the week most of the participants spend on average 5 hours a day sitting (mean=346.38).

Table 1. Correlation of results of MET versions, seating minutes and BMI index

Correlations							
Spearman's rho							
		MET high	MET moderate	MET walking	MET total	IPAQ sitting minutes	BMI
MET high	Correlation Coefficient	1	,392**	0,103	,653**	-,237**	0,027
	Sig. (2-tailed)	0	0	0,059	0	0	0,629
	N	333	333	333	333	333	333
MET moderate	Correlation Coefficient		1	,315**	,636**	-,320**	0,004
	Sig. (2-tailed)		0	0	0	0	0,945
	N		333	333	333	333	333
MET walking	Correlation Coefficient			1	,639**	-,140*	-0,051
	Sig. (2-tailed)			0	0	0,011	0,357
	N			333	333	333	333
MET total	Correlation Coefficient				1	-,295**	-0,006
	Sig. (2-tailed)				0	0	0,915
	N				333	333	333
IPAQ sitting minutes	Correlation Coefficient					1	-0,051
	Sig. (2-tailed)					0	0,352
	N					333	333
BMI	Correlation Coefficient						1
	Sig. (2-tailed)						0
	N						333
** Correlation is significant at the 0.01 level (2-tailed).							
* Correlation is significant at the 0.05 level (2-tailed).							

3.2. The Link between Sociodemographic Characteristics and the Level of Activity of FB Users

Distributions of results for all the parts of the IPAQ according to the Kolmogorov-Smirnov test are statistically significantly different from the normal distribution. The

non-parametric Mann-Whitney U test was used analyzing the difference between the IPAQ and MET in gender results. There is a statistically significant difference in the level of physical activity of men and women: in physical activity of high intensity and in total physical activity, with men being more physically active ($p<0.01$). There is a statistically significant correlation between the IPAQ overall results compared to the MET category, BMI, quality of life and self-assessment of health ($p<0.01$) (see Table 2).

Table 2. Correlation between the IPAQ quality of life, age, BMI index and self-assessment of health

Correlations									
Spearman's rho									
		QUALITY OF LIFE	AGE	BMI	HEALTH	MET high	MET moderate	MET walking	MET total
QUALITY OF LIFE	Correlation Coefficient	1	-0,063	-,178**	,564**	,353**	,119*	-0,039	,169**
	Sig. (2-tailed)	0	0,255	0,001	0	0	0,031	0,477	0,002
	N	333	333	333	333	333	333	333	333
AGE	Correlation Coefficient		1	,234**	-0,077	-,145**	-,120*	-0,06	-,132*
	Sig. (2-tailed)		0	0	0,16	0,008	0,029	0,278	0,016
	N		333	333	333	333	333	333	333
BMI	Correlation Coefficient			1	-0,1	0,027	0,004	-0,051	-0,006
	Sig. (2-tailed)			0	0,069	0,629	0,945	0,357	0,915
	N			333	333	333	333	333	333
HEALTH	Correlation Coefficient				1	,285**	,201**	-0,032	,171**
	Sig. (2-tailed)				0	0	0	0,564	0,002
	N				333	333	333	333	333
MET high	Correlation Coefficient					1	,392**	0,103	,653**
	Sig. (2-tailed)					0	0	0,059	0
	N					333	333	333	333
MET moderate	Correlation Coefficient						1	,315**	,636**
	Sig. (2-tailed)						0	0	0
	N						333	333	333
MET walking	Correlation Coefficient							1	,639**
	Sig. (2-tailed)							0	0
	N							333	333
MET total	Correlation Coefficient								1
	Sig. (2-tailed)								0
	N								333
** Correlation is significant at the 0.01 level (2-tailed).									
* Correlation is significant at the 0.05 level (2-tailed).									

3.3. Sociodemographic Data of Respondents

The majority of 333 participants, 61.3% were women. The education: 37.8% had secondary education, and 60.6% higher education. The BMI ranges from 16.04 to 42.25, the average BMI is 24.00, which is in line with the recommended BMI according to the classification by the WHO for the European. The perceived quality of life and health satisfaction range from 60 to 80% of the scalable maximum. About half of the respondents were included in sports activities (mean 58.6%), mostly recreational forms. The total level of physical activity of FB users, expressed through the MET-minute/week is high (mean 2350.99). The participants, 57.7% belong to the high level of involvement or HEPA active (Health Enhancing Physical Activity).

4. Discussion and Conclusion

Since it has been a relatively short time since social networks started dominating online activities, there is not enough research to show their impact on the quality of life, health and physical activity. Social networks directly and indirectly affect people's behavior, including their leisure time and health. Social networks have created a new social dimension as a medium that provides a fast and constant source of information.

The average value of BMI of FB users in this survey is about the recommended. More than half of the respondents are involved in recreational sporting activities and into the category of high levels of involvement or HEPA active. There is statistically significant correlation between the overall results obtained with the IPAQ compared to the MET category, BMI, quality of life and health in FB users. There is a statistically significant correlation between the overall results of the IPAQ compared to the MET category and the time spent sitting. The distribution of the results on the IPAQ and the time spent sitting is in line with the fact that the surveyed population falls under younger active working age. The positive association of sociodemographic features of FB's social network users and levels of physical activity in this research suggests that mass media, such as FB can be one of the leading factor in engaging in sports activities.

This research provides guidelines for further research into the influence of social networks on individual health and behavioral health. The practical value is the specificity of respondents: FB users and a group of younger working-active population. There are some methodological shortcomings within this research, e.g. sample size, which does not allow the generalization. New research should be carried out over a longer period in order to define the role of social networks and media on health behavior and participation in physical activity extended to all age groups. The results point to the fact that involvement in social networks does not diminish the level of physical activity for participants in this study.

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