IOP Conf. Series: Materials Science and Engineering **180** (2017) 012210 doi:10.1088/1757-899X/180/1/012210

Barriers to Physical Activity on University Student

Jajat*, K Sultoni and A Suherman

Program Studi Ilmu Keolahragaan, Fakultas Pendidikan Olahraga dan Kesehatan, Universitas Pendidikan Indonesia, Jl. Dr. Setiabudhi No.229, Bandung 40154, Jawa Barat, Indonesia

*jajat_kurdul@upi.edu

Abstract. The purpose of the research is to analyze the factors that become barriers to physical activity in university students based on physical activity level. An internet-based survey was conducted. The participants were 158 University students from Universitas Pendidikan Indonesia. Barriers to Physical Activity Quiz (BPAQ) were used to assessed the factors that become barriers to physical activity in university students. IPAQ (short form) were used to assessed physical activity level. The results show there was no differences BPAQ based on IPAQ level. But when analyzed further based on seven factors barriers there are differences in factors "social influence and lack of willpower" based IPAQ level. Based on this it was concluded that the "influence from other and lack of willpower" an inhibiting factor on students to perform physical activity.

1. Introduction

Regular physical activity can improve the health of psychological and physical fitness can prevent a variety of diseases including cardiovascular(1)(2). Currently, there are many studies that reveal the lack of physical activity and physical fitness that occurs in almost all countries and at all age levels.

Low physical activity must not be separated from a variety of reasons and barriers experienced and felt by everyone. Experts in many countries has been a lot of research about the barriers that the reason everyone to do physical activity. Research from differences factors become barriers to physical activity by gender, age and others.

Experts in many countries has been a lot of research about the barriers that the reason everyone to do physical activity. Research from differences factors become barriers to physical activity by gender, age and others, but no study about the differences barriers that occur at every level of activity.

2. Method

The method use in this study is a causal comparative (3). Samples were students of Universitas Pendidikan Indonesia with a total 158 participants and is divided into three groups of physical activity categories, namely vigorous, moderate and low physical activity. Instrument used to determine the group category of physical activity is the IPAQ-SF, while the instrument used to look at the barriers to physical activity are BPAQ. Questionnaires were translated from English to Bahasa Indonesia.

Participants were asked to report the number of days and the duration of the vigorous (V), moderate (M), walking activity (W), and a combined total physical activity score. All scores were expressed in

MET-minutes/week (www.ipaq.ki.se). The following values have been used for the analysis of IPAQ data:

- V MET = 8.0 x walking minutes x walking days;
- M MET = 4.0 x walking minutes x walking days;
- W MET = 3.3 x walking minutes x walking days;
- Total PA MET = sum of V + M + W MET minutes/week scores.

Barriers to physical activity is divided into seven sub-scales, namely: lack of time (3 statements), social influence (3 items), lack of energy (3 items), lack of willpower (3 items), fear of injury (3 items), lack of skill (3 items) and lack of resources (3 items). The scale used is a Likert scale ranging very likely to very unlikely. Processing and analysis of data using ANOVA and Tukey HSD test.

3. Result and Discussion

The results of processing and analysis of data showed that overall, the perceived barriers to physical activity in all three sample groups (vigorous, moderate and low) there was no significant difference p=0,125 (Table 1).

Tabel 1. SPSS Output ANOVA Test BPAQ

ANOVA

Barriers

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	391.458	2	195.729	2.109	.125
Within Groups	14386.694	155	92.817		
Total	14778.152	157			

When viewed from the sub-scale, there is a significant difference in the "social influence" (p = 0.044) and a "lack of willpower" (p = 0.004) (Table 2). the Sub-scale social influence there are significant differences between vigorous and low groups (p = 0.037) (Table 3). While on the sub-scale lack of willpower there are significant differences between the vigorous and moderate groups (p = 0.006) and the vigorous and low groups (p = 0.010) (Table 3).

Tabel 2. SPSS Output ANOVA Test Seven Sub-Scales BPAQ

ANOVA

		Sum of Squares	Df	Mean Square	F	Sig.
Lack_of_Time	Between Groups	9.777	2	4.888	1.436	.241
	Within Groups	527.565	155	3.404		
	Total	537.342	157			
Social_Influence	Between Groups	24.037	2	12.019	3.183	.044
	Within Groups	585.330	155	3.776		
	Total	609.367	157			
Lack_of_Energy	Between Groups	4.072	2	2.036	.412	.663
	Within Groups	766.035	155	4.942		
	Total	770.108	157			
Lack_of_Willpower	Between Groups	47.228	2	23.614	5.824	.004
	Within Groups	628.443	155	4.054		
	Total	675.671	157			
Fear_of_Injury	Between Groups	4.451	2	2.226	.685	.505
	Within Groups	503.270	155	3.247		
	Total	507.722	157			

Table 2. Cont.

Lack_of_Skills	Between Groups	4.824	2	2.412	.678	.509
	Within Groups	551.511	155	3.558		
	Total	556.335	157			
Lack_of_Resources	Between Groups	.209	2	.105	.042	.959
	Within Groups	388.626	155	2.507		
	Total	388.835	157			

Tabel 3. SPSS Output Tukey HSD Test Seven Sub-Scales BPAQ by Physical Activity Intensity Level

Multiple Comparisons

Tukey HSD

Dependent Variable	(I) Intensity	(J) Intensity	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Lack_of_Time	Vigorous	Moderate	-.61495	.36607	.216	-1.4812	.2513
		Low	-.49797	.42081	.465	-1.4938	.4979
	Moderate	Vigorous	.61495	.36607	.216	-.2513	1.4812
		Low	.11698	.35653	.942	-.7267	.9607
	Low	Vigorous	.49797	.42081	.465	-.4979	1.4938
		Moderate	-.11698	.35653	.942	-.9607	.7267
Social_Influence	Vigorous	Moderate	-.70270	.38560	.166	-1.6152	.2098
		Low	-1.10270*	.44325	.037	-2.1516	-.0538
	Moderate	Vigorous	.70270	.38560	.166	-.2098	1.6152
		Low	-.40000	.37554	.537	-1.2887	.4887
	Low	Vigorous	1.10270*	.44325	.037	.0538	2.1516
		Moderate	.40000	.37554	.537	-.4887	1.2887
Lack_of_Energy	Vigorous	Moderate	-.28862	.44112	.790	-1.3325	.7553
		Low	-.45405	.50708	.644	-1.6540	.7459
	Moderate	Vigorous	.28862	.44112	.790	-.7553	1.3325
		Low	-.16543	.42961	.922	-1.1821	.8512
	Low	Vigorous	.45405	.50708	.644	-.7459	1.6540
		Moderate	.16543	.42961	.922	-.8512	1.1821
Lack_of_Willpower	Vigorous	Moderate	-1.25492*	.39954	.006	-2.2004	-.3094
		Low	-1.35338*	.45928	.010	-2.4402	-.2665
	Moderate	Vigorous	1.25492*	.39954	.006	.3094	2.2004
		Low	-.09846	.38912	.965	-1.0193	.8224
	Low	Vigorous	1.35338*	.45928	.010	.2665	2.4402
		Moderate	.09846	.38912	.965	-.8224	1.0193
Fear_of_Injury	Vigorous	Moderate	.05873	.35755	.985	-.7874	.9048
		Low	-.34189	.41101	.684	-1.3145	.6307
	Moderate	Vigorous	-.05873	.35755	.985	-.9048	.7874
		Low	-.40062	.34822	.485	-1.2247	.4234
	Low	Vigorous	.34189	.41101	.684	-.6307	1.3145
		Moderate	.40062	.34822	.485	-.4234	1.2247

Table 3. Cont.

Lack_of_Skills	Vigorous	Moderate	-.40207	.37429	.531	-1.2878	.4837
		Low	-.43108	.43025	.577	-1.4493	.5871
	Moderate	Vigorous	.40207	.37429	.531	-.4837	1.2878
		Low	-.02901	.36453	.997	-.8916	.8336
	Low	Vigorous	.43108	.43025	.577	-.5871	1.4493
		Moderate	.02901	.36453	.997	-.8336	.8916
Lack_of_Resources	Vigorous	Moderate	-.08976	.31419	.956	-.8333	.6538
		Low	-.04932	.36117	.990	-.9040	.8054
	Moderate	Vigorous	.08976	.31419	.956	-.6538	.8333
		Low	.04043	.30600	.990	-.6837	.7646
	Low	Vigorous	.04932	.36117	.990	-.8054	.9040
		Moderate	-.04043	.30600	.990	-.7646	.6837

*. The mean difference is significant at the 0.05 level.

The result showed that the total score questionnaire based on the number BPAQ no barriers difference between students who have vigorous, moderate, and low levels of physical activity. This means that, every activity level in general has the same barriers in physical activity. Vigorous, moderate and low physical activity level, presented with similar barriers to physicsal activity and exercise participation. Results of other studies on the barriers to physical activity showed similar conclusions. Middle-aged and elderly respondents presented with similar external and internal barriers to physical activity and exercise participation (4).

When examined by sub-indicators, there are significant difference barriers to the sub-indicators of "social influence" and "lack of willpower". Students who have lower levels of physical activity, have a higher barrier to “social influence” when compared with students who have a vigorous physical activity.

For the sub-indicators of "social influence" there is significant difference barriers between groups of vigorous and low physical activity. While the sub-indicator "lack of willpower" there is difference barriers between vigorous and moderate physical activity levels as well as vigorous and low physical activity level. Students who have lower and moderate levels of physical activity, have a higher barrier to “lack of willpower” when compared with students who have a vigorous physical activity. Perceived barriers can predict a person's physical activity (5).

4. Conclusion

Internal and external barriers to physical activity is an important factor to be considered and solved. Barriers to physical activity will determine the level of physical activity.

Reference

[1] Grosclaude M, Ziltener J-L. Benefits of physical activity. Rev Med Suisse. 2010;6(258):1495–8.
[2] Tergerson JL, King K a. Do perceived cues, benefits, and barriers to physical activity differ between male and female adolescents? J Sch Health. 2002;72(9):374–80.
[3] Fraenkel JR, Wallen NE, Hyun H. How to Design and Evaluate Research in Education. Eight Edit. New York: McGraw-Hill Companies; 2012.
[4] Justine M, Azizan A, Hassan V, Salleh Z, Manaf H. Barriers to participation in physical activity and exercise among middle-aged and elderly individuals. Singapore Med J. 2013;54(10):581–6.
[5] Allison KR, Dwyer JJ, Makin S. Perceived barriers to physical activity among high school students. Prev Med. 1999;28(6):608–15.