Barriers to Physical Activity on University Student

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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).

| 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).

| Barriers           | 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.

|                          | Between Groups | Within Groups | Total |
|--------------------------|----------------|---------------|-------|
| **Lack_of_Skills**       | 4.824          | 551.511       | 556.335 |
| **Lack_of_Resources**    | .209           | 388.626       | 388.835 |

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

### Multiple Comparisons

| Dependent Variable    | (I) Intensity | (J) Intensity | Mean Difference (I-J) | Std. Error | Sig. | Lower Bound | Upper Bound |
|-----------------------|---------------|---------------|-----------------------|------------|------|-------------|-------------|
| **Lack_of_Time**      | Vigorous      | Moderate      | -.61495               | .36607     | .216 | -1.4812     | .2513       |
|                       | Vigorous      | Low           | -.49797               | .42081     | .465 | -1.4938     | .4979       |
|                       | Moderate      | Vigorous      | .61495                | .36607     | .216 | -.2513      | 1.4812      |
|                       | Moderate      | Low           | .11698                | .35653     | .942 | -.7267      | .9607       |
|                       | Low           | Vigorous      | .49797                | .42081     | .465 | -.4979      | 1.4938      |
|                       | Low           | Moderate      | -.11698               | .35653     | .942 | -.9607      | .7267       |
| **Social_Influence**  | Vigorous      | Moderate      | -.70270               | .38560     | .166 | -1.6152     | .2098       |
|                       | Vigorous      | Low           | -.10270               | .44325     | .037 | -2.1516     | -.0538      |
|                       | Moderate      | Vigorous      | .70270                | .38560     | .166 | -2.098      | 1.6152      |
|                       | Moderate      | Low           | -.40000               | .37554     | .537 | -.2887      | .4887       |
|                       | Low           | Vigorous      | 1.10270               | .44325     | .037 | .0538       | 2.1516      |
|                       | Low           | Moderate      | .40000                | .37554     | .537 | -.4887      | 1.2887      |
| **Lack_of_Energy**    | Vigorous      | Moderate      | -.28862               | .44112     | .790 | -1.3325     | .7553       |
|                       | Vigorous      | Low           | -.45405               | .50708     | .644 | -1.6540     | .7459       |
|                       | Moderate      | Vigorous      | .28862                | .44112     | .790 | -.7553      | 1.3325      |
|                       | Moderate      | Low           | -.16543               | .42961     | .922 | -.1182      | .8512       |
|                       | Low           | Vigorous      | .45405                | .50708     | .644 | -.7459      | 1.6540      |
|                       | Low           | Moderate      | .16543                | .42961     | .922 | -.8512      | 1.1821      |
| **Lack_of_Willpower** | Vigorous      | Moderate      | -1.25492              | .39954     | .006 | -2.2004     | -.3094      |
|                       | Vigorous      | Low           | -1.35338              | .45928     | .010 | -2.4402     | -.2665      |
|                       | Moderate      | Vigorous      | 1.25492               | .39954     | .006 | .3094       | 2.2004      |
|                       | Moderate      | Low           | -.09846               | .38912     | .965 | -.10193     | .8224       |
|                       | Low           | Vigorous      | 1.35338               | .45928     | .010 | .2665       | 2.4402      |
|                       | Low           | Moderate      | .09846                | .38912     | .965 | -.8224      | 1.0193      |
| **Fear_of_Injury**    | Vigorous      | Moderate      | .05873                | .35755     | .985 | -.7874      | .9048       |
|                       | Vigorous      | Low           | -.34189               | .41101     | .684 | -.3145      | .6307       |
|                       | Moderate      | Vigorous      | -.05873               | .35755     | .985 | -.9048      | .7874       |
|                       | Moderate      | Low           | -.40062               | .34822     | .485 | -.12247     | .4234       |
|                       | Low           | Vigorous      | .34189                | .41101     | .684 | -.6307      | 1.3145      |
|                       | Low           | Moderate      | .40062                | .34822     | .485 | -.4234      | 1.2247      |
Table 3. Cont.

|                  | Vigorous | Moderate | Low  | Vigorous | Moderate | Low  | Vigorous | Moderate | Low  |
|------------------|----------|----------|------|----------|----------|------|----------|----------|------|
| Lack_of_Skills   |          |          |      |          |          |      |          |          |      |
| Vigorous         | -0.40207 | -0.37429 | 0.531| -1.2878  | 0.4837   |      |          |          |      |
| Moderate         | -0.43108 | -0.43025 | 0.577| -1.4493  | 0.5871   |      |          |          |      |
| Low              |          |          |      |          |          |      |          |          |      |
| Moderate         | -0.08976 | -0.31419 | 0.956| -0.8333  | 0.6538   |      |          |          |      |
| Low              | -0.04932 | -0.36117 | 0.990| -0.9040  | 0.8054   |      |          |          |      |
| Lack_of_Resources|          |          |      |          |          |      |          |          |      |
| Vigorous         | -0.08976 | -0.31419 | 0.956| -0.6538  | 0.8333   |      |          |          |      |
| Moderate         | -0.04043 | -0.30600 | 0.990| -0.6837  | 0.7646   |      |          |          |      |
| Low              |          |          |      |          |          |      |          |          |      |
| Moderate         | -0.04043 | -0.30600 | 0.990| -0.7646  | 0.6837   |      |          |          |      |

* 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 physical 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 and 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.