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Perceived Barriers to Becoming Physically Active For Students at UBC

Group GAET

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## **Executive Summary**

Our study seeks to identify whether there are differences in perceived barriers to physical activity between active and inactive university students. We believed that the barriers “lack of energy”, “lack of time” and “lack of willpower” are the most influential barriers. We also hypothesize that physically inactive students will rate each of the 7 barriers to physical activity as more of a barrier compared to physically active students. The study we conducted tries to rectify this with a study of UBC students. Undergraduate UBC students (n = 100) were recruited to the study. Participant’s current exercise habits and perceived barriers to physical activity were assessed. Students were asked to participate in a survey found online from a previous research. Mean scores derived from the calculation method provided with the survey were computed. Statistically significant results were found between the physically active and inactive groups. “Lack of energy”, “Lack of willpower”, and “Lack of time” were the top three most significant barriers perceived students at UBC. No significant results between genders were found in this study. This study could be replicated with a larger sample size in future research to increase the validity and to accurately identify perceived barriers in order to enhance physical activity among students at UBC.

## **Perceived Barriers to Becoming Physically Active For Students at UBC**

Research article written by Daskapan, Tuzun & Eker (2006) has stated that "physical activity rates decline consistently during the adolescent years." In order to increase participation of physical activity for students at UBC, this study investigates whether there are differences in perceived barriers to physical activity between physically active and inactive students at UBC. We hypothesize that the barriers "Lack of energy", "Lack of time" and "Lack of willpower" to be more influential than other barriers such as "Fear of injury", "Social Influence", "Lack of skill" or "Lack of resources". We also believe that physically inactive students will rate each of the 7 barriers: "Lack of energy", "Lack of time", "Lack of willpower", "Fear of injury", "Social Influence", "Lack of skill", and "Lack of resources" as more of a barrier compared to physically active students. Previous studies have evaluated physical activity among students, but there is no data on perceived barriers to UBC students (Allison et al., 1999; Daskapan et al., 2006). The purpose of this study is to analyze perceived barriers to physical activity in UBC students.

### **Method**

#### **Participants**

The study sample was composed of 100 students from the University of British Columbia, Vancouver, BC. Of the 100 students, 53 are male and 47 are female. All of the participants are undergraduate students between year 1 to year 4. 60% of the sample were physically inactive students and 40% of the sample were physically active students.

#### **Conditions**

There are two independent variables in this study; the first independent variable this study intends to measure is the physical activity level divided between physically active and physically inactive students. The second independent variable in this study is gender, labeled as male and female students. The 7 dependent variables in this study are the barriers to physical activity as listed: 1.Lack of Energy, 2.Lack of Willpower, 3.Lack of Time, 4.Influence from others, 5.Lack of Resources, 6.Lack of Skill, and 7.Fear of Injury.

To compare the relationships between the 7 barriers to physical activity with gender and physically active or inactive students, we asked students to indicate their gender and whether they classify themselves as being either physically active or physically inactive. According to the World Health Organization, the American Heart Association, and the Canadian Physical Activity Guideline, the recommended level of physical activity for adults aged 18–64 is at least 150 minutes of moderate-intensity aerobic physical activity per week. This level of physical activity is suggested for all adults within the mentioned age range regardless of gender, race, ethnicity, or income level. With proper execution and adherence, the encouraged amount of physical activity may improve cardiorespiratory and muscular fitness, bone health, and reduce the risk of depression. Adults who are able to practice and maintain the recommended physical activity level are shown to have lower rates of all-cause mortality, coronary heart disease, high blood pressure, stroke, type 2 diabetes, metabolic syndrome, colon and breast cancer; are less likely to have a hip or vertebral fracture, and are more likely to achieve weight maintenance with a balanced body mass and composition (WHO). Therefore, we define physically active and inactive students by requesting them to specify if they exercised more than 150 minutes per week

(physically active), or if they have exercised less than 150 minutes per week (physically inactive). There are alternative ways of defining physical activity levels which involve the calculation of calories as advised by Health Canada on the government of Canada website, we decided not to include this method because students might have a hard time estimating the calories of intake or how much they burn through exercise each week.

## Measures

In this research, data was collected in the form of a questionnaire survey obtained from a previous research investigating a similar topic (López, Gallegos, & Extremera, 2010). The survey consists of 21 questions assessing 7 barriers towards physical activity, adopting a Likert scale of 4 points ranging from “very unlikely (0)” to “very likely (3)” (Figure 3). Each barrier to physical activity were assessed with 3 questions, for example, the barrier "Lack of Time" was assessed with questions number 1, 8 and 15. The scores for each set of three questions were added to show how important the barrier is compared with the other six. Referring to the calculation method provided by the survey, an example would be to add scores of questions 1, 8 and 15 for the barrier “Lack of Time” to obtain a final score (Figure 4). This procedure is then repeated for each set of three questions; for each participant, there will be a total of 7 final scores derived from the 7 barriers to physical activity. A final score of 5 or above indicates the corresponding barrier to physical activity is an important barrier to overcome, a final score of 4 or less indicates it is not as much of a barrier. The mean for each barrier was calculated and graphed to show relationships between the 7 barriers to physical activity and gender of students: male and female (Figure 1). For the second graph, mean of the final scores of each barrier was calculated to show the relationship between the 7 barriers to physical activity and the physically active or physically inactive students (Figure 2).

## Procedure

Participants in this research are students from the University of British Columbia, the researchers asked students to fill out surveys at the Student Union Building, located on 6138 Student Union Boulevard (Map of UBC). Data was collected over a period of two days, on Tuesday Mar.24th and Thursday Mar.26<sup>th</sup> from 1:00-3:00pm. Three indoor locations were selected to survey students, the Starbucks near the North East entrance facing the Bus Loop, the South side Lounge across from Pie R Squared Pizza, situated at the South East entrance facing the Aquatic center, and lastly, the sitting area beside the Sub Art Gallery near the South West entrance facing Irving K Barber Learning Centre. All participants were ensured to be in a safe environment away from constructions nearby.

We then input our data from our survey into excel and performed a statistical analysis calculating the mean scores and t test. The mean scores were then turned into bar graphs.

## Results

Results on the t test show no significant gender differences in mean levels of perceived barriers. For genders, all of the barriers had a p value of larger than 0.05 which is why it is considered to be statistically insignificant. Only P values of less than 0.05 are reported as statistically significant. The average mean results for males were found to be slightly higher compared to females. (Refer to figure 1 in the appendix)

Statistically significant results were found between the physically active and inactive groups. The t test showed lack of energy, lack of willpower, and lack of time being the top three most significant barriers perceived by UBC students. Lack of energy (0.0015), lack of willpower (0.0003), and lack of time (0.0020) had a p value of less than 0.05 which is why it is interpreted as statistically significant. The average mean scores for the physically active group were higher than the physically inactive groups. The results were consistent with our hypothesis. The lack of energy, willpower, and time has been reported as the major barriers towards physical activity. (Refer to figure 2 in the appendix)

## Discussion

Due to a small sample size of the subjects analyzed, we were not able to find any significant results between genders. We were also not able to control the temporal and spatial characteristics (e.g. time and location). Data collected at different points in time can influence the results. Failure to consider the time variable, can pose a threat to the external validity. Time, willpower, and energy are the three main factors to consider for student at UBC in promoting physical activity. We anticipated finding gender differences towards physical activity. No significant results between genders were found in this study. Future research done in this field should increase participant size to get a more representative sample of the UBC population. The results will be helpful to accurately identify perceived barriers and then suggest changes to boost physical activity among young people.

## Recommendations for UBC

UBC should build a more tailored approach to encourage physical activity behaviors among students. (e.g.: promote time management workshop). If future research replicating our study finds consistent results, UBC should consider promoting the existing time management workshops to improve wellbeing of students. According to *The free dictionary*, willpower is defined as “the ability to control oneself and determine one's actions.” Our results will hopefully help encourage students at UBC to increase in more quality motor skills practice (e.g.: joining sports clubs, teams, going to the gym, etc.) in order to boost participants’ willpower. Research have shown that large amounts of time spent on work and study has left students with a tight time schedule for their leisure activities (Lopez et al., 2010). Designing a physical education 3-credit course targeted towards students with a lack of energy will motivate and encourage students to take part in physical activity. The results obtained from this research may be used as a reference for UBC in future campaigns targeted towards promoting physical activity and a healthier university environment. We should keep in mind that university is a transitional period that provides many good opportunities and conditions for achieving and attaining a healthy lifestyle.

## Appendix

### Problem

- The first proposal we wrote included many vague ideas. Our proposal did not address the specific details of data collection. We also created a survey of our own, which contained many errors and did not qualify to be handed out to students. Our group decided to use a survey from a previous research paper. This survey was a perfect fit for the purpose of our study as it contained all the seven barriers.
- Before we began our survey, our group members struggled with the location and time suitable to conduct our survey. However, we chose to conduct our survey at the SUB area because the area consists of students from a variety of different faculties and majors.

### Something not Mentioned

- In the survey, we collected data from students' year 1-4 attending UBC and compared them with the seven barriers. Our data analysis did not show any clear patterns of correlations on the t-test which was why the data on "Year of UBC Students" were dropped and excluded.
- We were also unsuccessful on our effort to perform a two-way-ANOVA chart. The two-way ANOVA data analysis required equal numbers of participants for both genders and physical active/inactive groups. Thus, we were not qualified for the data analysis of two-way ANOVA.

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Map of UBC

Retrieved from <http://www.maps.ubc.ca/PROD/mapCampus.php?whichMap=campusMain&x10=343&y10=249&x210=376&y210=277&showPointer=y&bldg2Search=n>



**Table 1.***P-value on T-test between Gender and Barriers.*

<b>Gender</b>	<b>Lack of time</b>	<b>Social influence</b>	<b>Lack of energy</b>	<b>Lack of willpower</b>	<b>Fear of injury</b>	<b>Lack of skill</b>	<b>Lack of resources</b>
t-Test	0.25716021	0.131996427	0.20461526	0.110386769	0.869948977	0.151243421	0.934596446

Note: Comparison to chance (.05) are significant, all  $p > 0.05$ .

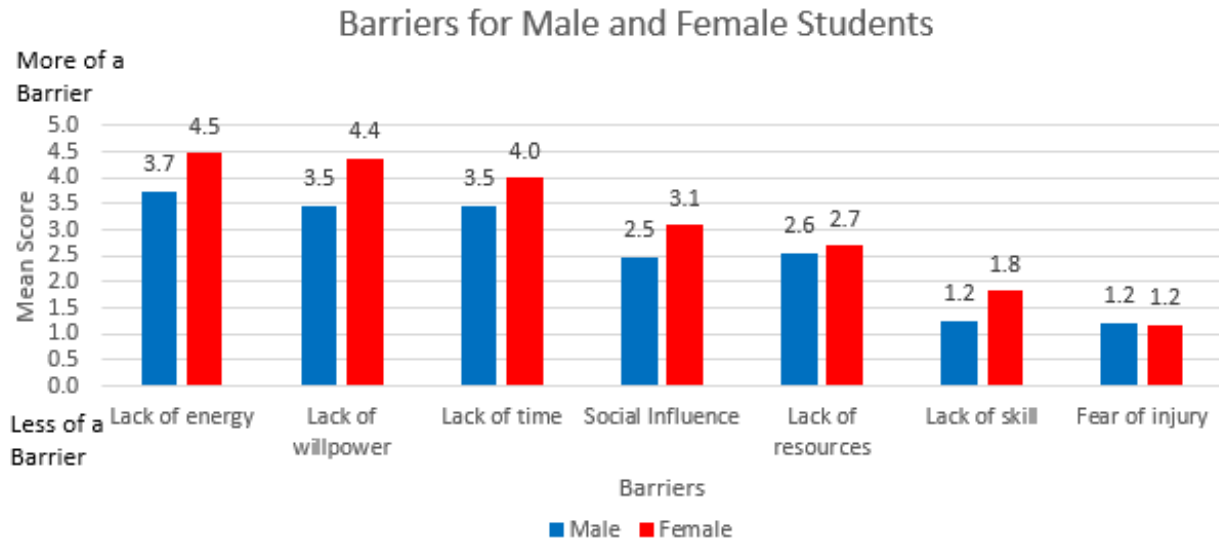
**Table 2.**

*P-value on T-test between Physically Active / Inactive Students and Seven Barriers.*

<b>Active/Inactive</b>	<b>Lack of time</b>	<b>Social influence</b>	<b>Lack of energy</b>	<b>Lack of willpower</b>	<b>Fear of injury</b>	<b>Lack of skill</b>	<b>Lack of resources</b>
t-Test	<b>0.0020493</b>	<b>0.004396371</b>	<b>0.001568211</b>	<b>0.000353646</b>	<b>0.2127303</b>	0.100501212	0.060109304

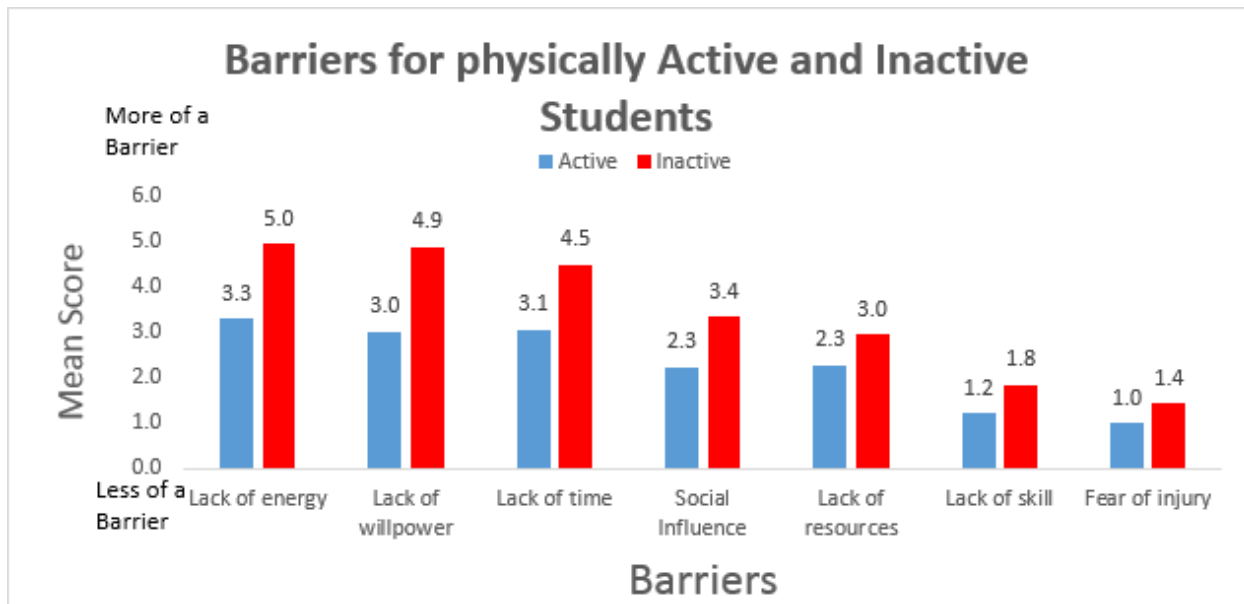
Note:(p-value of lack of time, Social influence, lack of energy and lack of willpower< 0.05)

## Figures



**Figure 1.** Barriers for Male and Female Students

Note: The bar graph shows the mean scores of male and female students compared with the seven barriers.



**Figure 2.** Barriers for physically Active and Inactive Students

Note: The bar graph shows the mean scores of the students who are physically inactive vs. active compared with the seven barriers.

**Barriers to Being Active Survey**

**What keeps you from being more active?**

Directions: Listed below are reasons people do not get enough physical activity. Read each statement and mark how that fits you.

How likely are you to say?

Very likely    Somewhat likely    Somewhat unlikely    Very unlikely

1. My day is so busy now, I just don't think I can make the time to include physical activity in my regular schedule.  
3                    2                    1                    0
2. None of my family members or friends like to do anything active, so I don't have a chance to exercise.  
3                    2                    1                    0
3. I'm just too tired after work to get any exercise.  
3                    2                    1                    0
4. I've been thinking about getting more exercise, but I just can't seem to get started.  
3                    2                    1                    0
5. I'm getting older so exercise can be risky.  
3                    2                    1                    0
6. I don't get enough exercise because I have never learned the skills for any sport.  
3                    2                    1                    0
7. I don't have access to jogging trails, swimming pools, bike paths, etc.  
3                    2                    1                    0
8. Physical activity takes too much time away from other commitments—time, work, family, etc.  
3                    2                    1                    0
9. I'm embarrassed about how I will look when I exercise with others.  
3                    2                    1                    0
10. I don't get enough sleep as it is. I just couldn't get up early or stay up late to get some exercise.  
3                    2                    1                    0
11. It's easier for me to find excuses not to exercise than to go out to do something.  
3                    2                    1                    0
12. I know of too many people who have hurt themselves by overdoing it with exercise.  
3                    2                    1                    0
13. I really can't see learning a new sport at my age.  
3                    2                    1                    0
14. It's just too expensive. You have to take a class or join a club or buy the right equipment.  
3                    2                    1                    0
15. My free times during the day are too short to include exercise.  
3                    2                    1                    0

16. My usual social activities with family or friends do not include physical activity.  
3                    2                    1                    0
17. I'm too tired during the week and I need the weekend to catch up on my rest.  
3                    2                    1                    0
18. I want to get more exercise, but I just can't seem to make myself stick to anything.  
3                    2                    1                    0
19. I'm afraid I might injure myself or have a heart attack.  
3                    2                    1                    0
20. I'm not good enough at any physical activity to make it fun.  
3                    2                    1                    0
21. If we had exercise facilities and showers at work, then I would be more likely to exercise.  
3                    2                    1                    0

Lastly, we would like you to identify your

Gender: Male Female or \_\_\_\_\_

Grade: Year 1 2 3 4

Physical activity: Physically active or inactive

(working out over 150 mins (2.5hrs) per week is considered physically active)

**Thank you for your kind participation!**

*Figure 3. Survey*

## Score

Follow these instructions to score yourself:

- Enter the circled number in the spaces provided, putting together the number for statement 1 on line 1, statement 2 on line 2, and so on.
- Add the three scores on each line. Your barriers to physical activity fall into one or more of seven categories: lack of time, social influences, lack of energy, lack of willpower, fear of injury, lack of skill, and lack of resources. A score of 5 or above in any category shows that this is an important barrier for you to overcome.

\_\_\_ + \_\_\_ + \_\_\_ = \_\_\_\_\_

1 8 15 Lack of time

\_\_\_ + \_\_\_ + \_\_\_ = \_\_\_\_\_

2 9 16 Social influence

\_\_\_ + \_\_\_ + \_\_\_ = \_\_\_\_\_

3 10 17 Lack of energy

\_\_\_ + \_\_\_ + \_\_\_ = \_\_\_\_\_

4 11 18 Lack of willpower

\_\_\_ + \_\_\_ + \_\_\_ = \_\_\_\_\_

5 12 19 Fear of injury

\_\_\_ + \_\_\_ + \_\_\_ = \_\_\_\_\_

6 13 20 Lack of skill

\_\_\_ + \_\_\_ + \_\_\_ = \_\_\_\_\_

7 14 21 Lack of resources

*Figure 4. Calculation Method*



*Figure 5. Map of UBC*

Note: Red arrow point to Student Union Building (SUB)