

UBC Social Ecological Economic Development Studies (SEEDS) Sustainability Program

Student Research Report

Identifying Recreation Gaps for Graduate Commuter Students

Stephanie Zepedeo, Laurila McCollough, Cole Baldigara, Gurleen Minhas,

Ryan Randhawa

University of British Columbia

KIN 464

Themes: Community, Wellbeing

April 3, 2018

Disclaimer: "UBC SEEDS Sustainability Program provides students with the opportunity to share the findings of their studies, as well as their opinions, conclusions and recommendations with the UBC community. The reader should bear in mind that this is a student research project/report and is not an official document of UBC. Furthermore, readers should bear in mind that these reports may not reflect the current status of activities at UBC. We urge you to contact the research persons mentioned in a report or the SEEDS Sustainability Program representative about the current status of the subject matter of a project/report".

Graduate student commuters face many barriers to recreation participation at UBC.

This research project determined commuting time as well as the stress of workload and finances make physical activity difficult to incorporate in daily life.

Our changes to the UBC recreation department will help.

Recreation Gaps for Minority Communities

UBC Kin-Graduate
Commuter Students

Executive Summary

Our research project identified the barriers faced by kinesiology graduate students who commute to the University of British Columbia (UBC) in accessing and participating in recreation programming on campus. Previous research indicates that commuter students are more likely to face barriers such as inconvenient timing of on campus activities compared to ideal and practical commute times and therefore are less likely to participate in recreation programs offered on campus compared to students who live on or closer to campus. These barriers also included workload, finances, and other responsibilities such as teaching assistant and volunteer positions. Kinesiology graduate students were a group of interest as they are highly educated in terms of the social, mental and physical benefits of regular physical activity. This project aimed to seek participant input in establishing the major barriers and the potential and desired solutions for low participation by commuter graduate students. Graduate students have been established as having lower participation rates in recreation on campus and unique barriers compared to undergraduate students.

The recruitment process for this specific population was to reach out to all kinesiology professors listed on the UBC's faculty directory and request connecting our researchers to their graduate students. Five semi-structured interviews approximately 15 minutes in duration were carried out with our participants. Questions asked about their current involvement in recreation on and off campus, their satisfaction with said participation, their commitment inside and outside school, their commute time and planning, as well as potential solutions that would benefit the specific issues raised by their circumstance.

Data collected indicated a few major themes in the barriers specific to commuting grad students. Firstly, the commute in itself left students with less free time in the day, a calculated time on campus around classes which left smaller time for leisurely time on campus, and less energy to participate. Secondly, graduate students mentioned higher levels of stress due to an increase in financial burden in taking on a second degree, as well as an increased workload as a result of teaching and research commitments. Students were deterred from investing that same time and money into recreation rather than more highly prioritized work and school.

Using the direct suggestions of participants and inferred solutions based on their interview a list of recommendations for changes to programming was created.

IDENTIFYING RECREATION GAPS FOR GRADUATE COMMUTER STUDENTS

1. Scheduling of games on campus to coincide more suitably to when commuter students are on campus and can transit home at a reasonable time.
2. A formation of satellite leagues in hubs central to large populations of commuter students in the suburbs of the Greater Vancouver Area.
3. Have more gym space and lower rates to participate in events.
4. Capitalize on underutilized campus space to cut costs and develop more independent/low commitment grad student intramural platforms targeted at stress relief.
5. Partnering with other organizations to offer programming if times are not convenient for the current staff as well as lessening the cost and workload by expanding the management to other groups on campus with resources.

Introduction/Literature Review

This research will identify barriers that commuter kinesiology graduate students attending UBC face when accessing recreation programming offered on campus. For the purposes of our project, commuter students are defined as students who travel to campus 30 minutes or greater via bus or car. We chose to include both bus and car travel as it encompasses a wider range of commuter graduate students who may face unique barriers in accessing recreation at UBC.

Recently, a mass survey was conducted in Toronto for 15,226 commuter students. These students were all from four major campuses, including Ontario College Arts Design University, Ryerson University, York University and The University of Toronto. This survey found that transportation time had a direct impact on how often students came to campus and these students also reported missing out on campus opportunities that occur at unsuitable times for them (Quick Links Menu, 2016). Thus, these individuals are potentially missing out on extracurricular activities, such as involvement in recreation programs on campus. UBC is a campus of 50,000 wherein 80% of students reportedly commute to school (Who are our Students, UBC, 2018). Based off 2016/2017 Statistics, there are 10 533 graduate students attending UBC and currently only 1300 of these students live on residence at UBC. Therefore, graduate students comprise 20% of the population at UBC (Who are our Students, UBC, 2018) and thus must be addressed to adequately take care of the entire student body. UBC recognizes the gap between resident and

commuter students, discussing how commuters are both psychologically and physically removed (A New Kind of Campus Center, 2018).

In a study by Hilbrecht, Smale & Mock, (2014), Canadians were surveyed to examine the relationship between daily commute time and access to activities that are beneficial to well-being. Time spent commuting was associated with lower life satisfaction and inability to participate in physically active leisure. Notably, an increased sense of time pressure influenced decisions in participation of recreation activities wherein the choice to be recreational at all was often neglected (Hilbrecht et. al, 2014; Reichert, Barros, Domingues, & Hallal, 2007). Additionally, lack of money and energy were also cited as reasons adults chose not to participate in physical recreation (Reichert et. al, 2007). The implication of these findings is directly relevant in our approach to graduate commuter students at UBC as these students face similar barriers to participating in recreation offered on campus.

Commuter students face a multitude of difficulties regarding their academic responsibility, work, family, finances, and personal well-being (Reichert et. al, 2007). However, graduate students may experience additional stresses due to adjustments and transitions. Some of these additional stresses include increased financial responsibilities, graduate teaching, and career planning (Berkel & Reeves, 2017). Since these stressors are routine throughout an academic year, they may culminate into chronic stress. Chronic stress may lead to increased headaches, lack of sleep, digestive issues, viral infections, depression, and irritability (Barkel & Reeves, 2017). These effects can be negated by regular physical activity, or recreation on campus. Notably, a study found that graduate students were 2.05 times less likely to participate in recreation on campus (Henchy, 2013). This makes graduate students a group that particularly needs focus. Participation in recreation activities leads to an increased desire to stay fit as well as increased feelings of belonging within the campus environment. Recreation programs also helped create more friendships/social connections among students as well as improved academic retention (Henchy, 2013).

As previous research findings suggest, involvement in recreation is an important tool for improving UBC graduate students' overall well-being. Our research aims to identify the major barriers faced by commuter graduate students at UBC and provide recommendations based on

graduate commuter students' testimonials that may help overcome these barriers in accessing recreation programming on campus.

Methods

This project engages kinesiology graduate students attending UBC who commute to campus 30 minutes or longer via bus or car to identify the unique barriers these students face in accessing recreation programming offered by UBC.

This population was selected for this project because research indicates that commuter students are less likely to participate in recreation programs offered at their university compared to students who live on or very close to campus (Reichert et. al, 2007). The discrepancy between the participation of commuter and non-commuter students in existing recreation programs across university campuses provided a rationale for this project.

A variety of potential barriers faced by commuter students may contribute to this groups' lower level of recreation participation compared to their non-commuter counterparts including: time constraints, unfavourable scheduling/inconvenience in terms of time and place, lack of company and overall time spent on campus. It may also be the case that the greater amount of time spent on campus for students who live on or close to their university has allowed them the opportunity to build more connections and friendships which as a result may increase their likelihood to participate in recreation programs. To reiterate this point, it is likely that an individual will be more inclined to participate in recreation if they have friends and/or acquaintances also participating (Hilbrecht et. al, 2014; Reichert et. al, 2007).

A study conducted by Henchy (2013) found that graduate students were less likely to participate in recreation programs offered by their university compared to undergraduate students. The difference in recreation participation between graduate students and undergraduate students further provided a rationale for this project. As studies suggest, due to being physically and often more psychologically removed from life on campus, commuter students (whether graduate or undergraduate) face more barriers when it comes to engaging in recreation programming offered by their university (Reichert et. al, 2007).

In addition to the potential barriers faced by commuter students in general, graduate commuter students may experience additional barriers in accessing recreation programming as a result of:

greater financial constraints, increased workload/busyness resulting in greater time constraints, and other major priorities such as work and family responsibilities (Berkel & Reeves, 2017).

UBC graduate commuter students may have many unique needs given the potential barriers they may face to participating in existing recreation programs. In order to enable these students with the opportunity to become more involved in recreation at UBC, these needs must first be identified and then addressed strategically. Such needs may include making recreation programs more convenient in terms of time and place. For example, creating more flexible times for intramural games and recreation events to run based on student availability and feasibility in terms of having to commute to and from campus.

We decided to narrow our population even more as we restricted our participants to only kinesiology graduate students. We acknowledge that this specific group of people are more likely to participate in physical activity and recreation programs than the rest of the population but we presume that their health background gives them an interesting understanding on the state of recreation affairs and participation at UBC. It was found that people who know of the risks of sedentary behaviour and the benefits of physical activity, as kinesiology students are, were more likely to participate in physical activity (Haase, Steptoe, Sallis, & Wardle, 2004). Due to this finding, choosing kinesiology graduate students may seem counter productive but it is our belief that this population, due to their education, will have a greater insight into how to change the system to better improve participation for all graduate students as they have a greater understanding of the physical activity and recreation world. This population will also help us determine if the current system in place at UBC works for a group that is considered 'better off' than the majority of the commuting graduate population. The researchers involved with this project understand the possible limitation with this assumption but deem the positive benefits in knowledge outweigh the loss in generalizability.

By understanding and identifying some of the potential barriers and unique needs for UBC graduate students who commute 30 minutes or longer to campus, we will be able to create strategies aimed towards making recreation programs more accessible for these students.

Furthermore, by identifying barriers and designing specific adaptations in cooperation with the group, this project proposes ways to increase this unique group of students' overall participation in recreation across the UBC campus.

Data Collection and Analysis

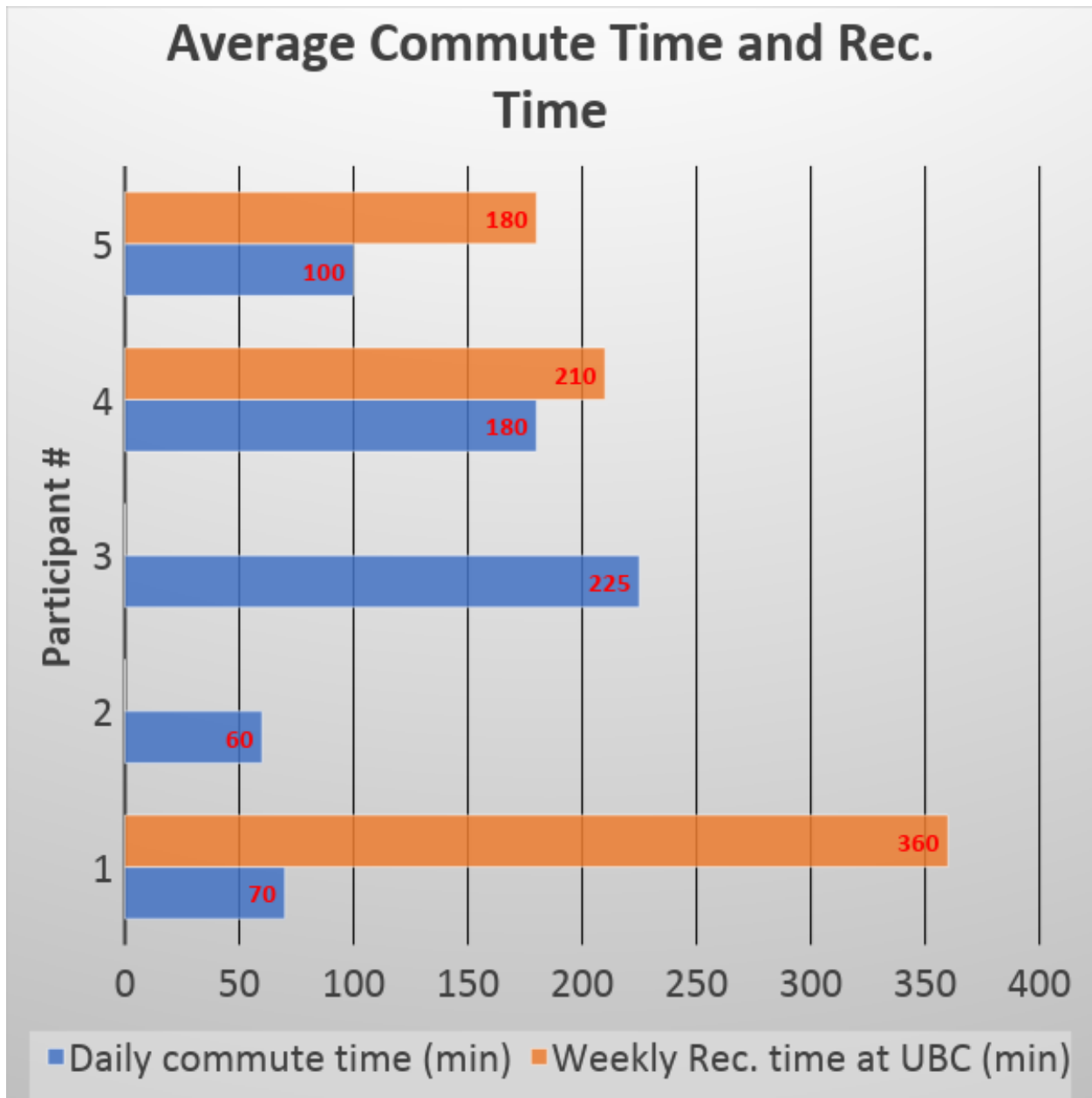
This study included the conduction of five qualitative semi-structured interviews that were approximately 15 minutes in duration. The recruitment process consisted of emailing UBC kinesiology professors requesting participation of their graduate students for our study. We obtained a list of professor emails through UBC's online faculty directory. In addition, we reached out directly to our teaching assistants and requested their participation provided they met the criteria; must be a graduate UBC commuter student travelling 30 minutes or greater to and from campus. Once we had received replies from willing participants who also met our criteria, we went ahead and set up a time and place of meeting in which the interview was conducted. Four out of the five interviews were held on the UBC campus in different locations including: Woodward library, Irving K. Barber learning center, and the Robert Osborne centre. These interviews were conducted on two separate days, in the afternoon. Prior to the start of the interviews, participants read and signed a consent form. The final interview was conducted over the phone on as the participant was out of town during the time of data collection. This participant received a consent form by email, read and signed it, scanned it and sent it back to the researcher via email before beginning the interview.

Each interview followed a template of questions that had been created by the researchers beforehand, however, there was some flexibility to the questions asked, for example, if something seemed of significant importance to the researcher they may have delved deeper into a specific topic or deviated away from the template a bit, hence the semi-structured interview design. Nonetheless, this template provided the foundation for each interview and consisted of the core questions of interest relating to the research topic (See appendix B). Each interview was recorded using a voice recording application on the researchers' personal cell-phones. Following the interviews, three of the recordings were transcribed using an online transcribing application and two were transcribed by hand due to complications with the online transcriber being able to detect these recordings.

Once the interview recordings had been transcribed, the researchers developed a chart that included the list of interview questions asked and each of the five participants' responses to each question (See Appendix A). A thematic approach was used when organizing the data which allowed the researchers to identify key themes including similarities and differences between

each of the participants' responses. As key themes were identified, the researchers were then able to identify the major barriers faced by commuter graduate students in accessing recreation programming at UBC. Following these discoveries, the researchers were able to come up with recommendations to help improve graduate commuter students' ability to partake in recreation programming offered on campus based on the participants' responses themselves.

Below is the average commute time found between our participants against the amount of time spent in recreation weekly:



Findings & Results

Theme 1:

Commute time and peak hours as a barrier to recreation participation on campus

Throughout the conducted interviews with UBC graduate commuter students, one of the main findings from the interview process was that most participants expressed feeling deterred from recreation on campus due to the amount of commute time required. Participants felt as though commute time took away precious hours of the day that could otherwise be used in recreation participation. One interviewee stated:

“The commute now makes it really difficult to participate because I’m not on campus. It’s not feasible...the commute just sucks up so much time, it’s very limited time for everything else. There’s a reduction in the amount I’m able to do.”

This same participant related the commute time to their past level of involvement on campus recreation, noting the stark difference since moving away from campus. This is significant because this participant could exclusively state commute time as the barrier behind their change in behaviour. Prior to this move, the participant lived 5 minutes away from campus, with a notable difference in participation of recreation on campus.

Two participants also discussed how the commute took away from their desire and motivation to exercise both on and off campus. This is relevant as it addresses another facet of commuting that deters participants from recreation on campus. The fatigue involved in commute time is significant in the decisions made for recreation as well. These interviewees had the following to say:

“I also don’t feel as motivated after I feel like I’ve wasted time sitting on the bus.”

“After being on the bus for two hours the last thing I want to do is go to the gym.”

Finally, our participants noted the strategic travel involved in both coming to and leaving campus. Participants noted the need to adjust their schedules to avoid commuting during peak hours. Participants noted feeling as though they’d rather leave campus early to avoid commuting during peak hours as opposed to staying and participating in recreation that would cause their commute to land within peak hours. One participant stated:

“I try and leave before the work and school rush, like 2:30 – 3:00... I really try and avoid peak bus times otherwise it’s awful.”

This calculation of scheduling presents itself as another conflict within the commute time barrier. Finally, one participant mentioned how intramural games were not feasible for a commuter student, saying:

“Games sometimes don’t work for a commuter because I’ve got a two-hour commute home.”

“Sometimes I skip games because of the commute...”

With over 9000 graduate students that commute to UBC every day, a significant portion of this population may be deterred from participating in intramural sports that they enjoy due to the late-night games. If that is not the reason why, there is fatigue, lack of time and scheduling discrepancies due to peak hour travel. All of these factors are tied into commute.

Theme 2:

Workload and finances as a barrier to participating in recreation on campus

Apart from the natural barriers introduced from being commuter students, graduate students also face both an increased workload and limited finances when compared to their undergraduate counterparts. The volume and concentration of workload was a significant noted barrier in almost all our participants when discussing barriers to recreation. Participants discussed the issues with allotting time to recreation when there are so many expectations placed on them. Our participants had the following to say:

“There’s a huge heavy workload. It’s an adjustment.”

“There’s a lot more flexibility as a grad student but there’s a huge expectation of what you have to get done. You’re expected to TA and do research.”

“You’re up marking and at the end of the day you just [want to] relax.”

Considering workload and pressure placed on our graduate students at various times of the year is crucial to addressing lack of participation in recreation, as this was cited as a major issue. Lack of participation in physical activity and recreation due to high stress times only deteriorates the health of our students even more.

Finances were also mentioned in all our participants' responses. All noted the significant influence that lack of funds had on their levels of participation in recreation and physical activity both on and off campus. If something was noted as cheaper, it was also noted as difficult to access. For example, the BirdCoop Fitness Center offers a \$30 membership per semester, something participants noted as being particularly economical. However, participants also noted how the size of the gym often deterred them from participating. Interviewees had the following to say:

"If I had a gym near my house that was cheap I think I would definitely go more. But I can't afford that right now."

"I just don't have any money, like I can't afford anything outside of school."

"It's not feasible to pay \$200 a month for a gym membership -- I know it's been an issue for me. There should be a way students don't have to pay that much. It makes it more accessible."

"It's also like financially really hard. Because now I'm paying for my rent, if I don't work on the side I can't pay tuition and do both."

It's important to note the desire to participate in recreation, and the associated financial barriers that don't allow this to happen. Additionally, graduate students face increased levels of burden as they have been in school longer without a living wage. Some graduate students also have kids or extra jobs to compensate for the burden.

Another significant finding was the subject of mental health. This was mentioned in relation to stressors faced by graduate students. Mental health was an interesting subject because of the evident discrepancy between participants. Two participants discussed the reduction of stress with recreation options whilst the other two discussed mental health as a barrier itself to participating. One participant had the following to say:

"I do a lot because it's important to my mental health to get through grad school."

Another participant discussed facing increasing levels of burnout, stress and high levels of workload as the reason why they are unable to get themselves to exercise both on and off campus.

“I’m finding it very challenging to fight against burnout and find [my] identity as a physically active person.”

Theme 3:

Participation in recreation off campus due to access issues on campus

Our interviews revealed notable participation in recreation outside of campus. When probed for reasons why, participants had a number of issues with the current state of recreation programs at UBC. First, participants most often mentioned the size and accessibility of the gym on campus. The difficulty in obtaining machines and getting space were notable influences in deterring participation. One interviewee stated:

“The population at UBC is too large, the gym needs to be bigger... At my old school we had a small gym and then a bigger gym was brought in and you could see how beneficial it was. You could come in at any time of the day and find a treadmill to run on and I think that could help commuters because it’s not feasible to get up at 4:00 – 5:00 am to get to the gym to get a spot.”

Almost all of the participants cited issues with waiting for machines and the level of crowdedness in the space. The thought of dealing with these issues was enough to deter students from participating, despite the excellent price points.

Participants also referred to the intramural programs as highly beneficial and inviting, but there were also a few issues surrounding them as well. One participant spoke of the lack of professionalism within the intramural teams, how frequent fighting and lack of calls were enough to deter them from participating. Some students had an issue with the timing of intramural games, saying:

“Sometimes intramural games are at 10:30 at night. That just doesn’t work for a commuter because I’ve got a 2.5 hour commute home.”

This participant discussed really wanting to participate but couldn’t simply because of the timing schedule put forth by recreation.

“If I had the opportunity, it’s great to be involved in University rec because we’re all studying, you meet people with similar personality characteristics, you form friendships like that.”

Discussion

Our results suggest that graduate commuter students face unique barriers when accessing recreation on campus. All the participants expressed a desire to be involved in recreation on campus. Therefore, this means that there is a population of graduate students that recognizes the benefits of participation yet are still unable to. This is important because a lack of interest or apathy cannot be cited as reasons why our participants are unable to participate as much as they'd like.

Through our thematic analysis we discovered the implications of our findings. Commute time was a major issue in our commuter grad student population. Commute time led to a multitude of related issues to consider. These included; lack of time allotted for various responsibilities, peak hour travel limiting choices, and lack of motivation after long bus rides. These findings are crucial in understanding the relative levels of health between commuter and non-commuter students. With these, we can illustrate the complexity and levels of issues that arise with living off campus. This allows us to better cater to this population of students.

Secondly, the discussion of workload, mental health and finances revealed an increased set of responsibilities for graduate students. These findings were significant because the structure of both academics and finances created significant disadvantages for our commuter graduate students and their levels of participation. The implication of this is found in the way the university experience is set up for graduate commuter students. The level of workload, stress and financial pressure is so significant that it removes students from healthy situations such as recreation on campus. This indicates that changes need to be made from the ground up.

Finally, the inadequacies pointed out in UBC recreation are significant as they provide valuable data in terms of what could be improved. This finding can be expanded to all kinds of universities around the world with similar levels of populations.

We chose to interview kinesiology graduate students with the understanding that they'd likely be among the most educated on campus in terms of recreation benefits. We hoped to understand why even these graduate students are facing barriers to participating in recreation. However, this becomes a limitation for our study. We recognize the limited point of view or bias we may have experienced in our interview participants as they all have the same background of knowledge and

level of education. Students from different faculties perhaps have different priorities regarding recreation in their lives. Expansion to other graduate students is necessary in understanding the motivations and barriers behind every student on campus. These students could then be compared to kinesiology students to understand the effect (if one exists) of education across different faculties.

Another limitation in our study is perhaps the number of participants interviewed. We were only able to interview 5 participants. This was due to a number of factors, but the main challenge we encountered with recruiting were busy schedules. Since we recruited participants towards the end of the semester, many of our graduate commuter students were already busy with other semester end related responsibilities. Therefore, they were unable to participate. This could be mitigated by conducting the study towards the beginning of the semester instead so that more participants are capable of coming forth. This is related to a challenge we faced ourselves as well. Due to the design of our study, the class and other semester related endings, we weren't able to spend as much time recruiting participants.

Another limitation is our method of data collection – interviews. The process involved relatively inexperienced interviewers. As it is, there is a tendency to introduce bias within interviews. Unknowingly, we may have supported or discouraged particular ideas. The concept of social desirability is also an issue, wherein participants may give answers that are pleasing to the interviewers. Interviews also allow only so many questions, and many of our participants occasionally strayed from the original question. Next time, it'd be a good idea to remove all possible influences of bias by screening our questions and learning more about interview practices.

The UBC graduate commuter student population continues to face barriers to recreation both on and off campus. This study aimed to collect individual experiences in UBC recreation. The findings from our research study are important because they can be applied to all graduate students with lengthy commutes around the world. The themes of workload, finances, inadequacies in programming and lack of time are all valuable pieces of information when discerning the issues. This data provides the first step in addressing the needs of this minority population at UBC. With this information, we are able to create solutions that may help reduce barriers and increase health and participation.

Recommendations

Recommendations for changes to UBC recreation programming to better suit commuter graduate students and increase their participation were formed based on interview participants direct suggestions and inferred solutions based upon their responses.

1) Priority intramural game scheduling.

If the majority of a team is made up of commuter students who travel to campus 30 minutes or greater, a new method of scheduling could be implemented so that those teams have priority to play earlier in the day/evening rather than late at night compared to a team whose players live on or very close to campus. This kind of priority scheduling could potentially make it more feasible for commuter students to get involved in recreation as they would not have to worry about commuting home super late at night or at undesirable peak traffic hours.

2) Extensions of UBC recreation programs across the lower-mainland.

Time and commuting distance repeatedly appeared as a barrier to participation in recreation activity programs at UBC among those interviewed in our study. Participants all stated that the amount of time it takes to travel to campus, participate in their selected activity, and return home afterward was one of the prominent factors in influencing to what degree, if any, they chose to participate in recreation activities at UBC. One possible way to address this common issue would be the establishment of satellite leagues/divisions. What this means is the various intramural activities and sports leagues could - in addition to offering the regular programming local to the UBC community - run their respective programs out of centrally located community centres or other suitable facilities (i.e. school gyms, parks and fields, public courts, fitness/ yoga studios etc.) in different municipalities. This would serve students in areas such as: Richmond, New Westminister, Burnaby, Surrey, North/West Vancouver, Fraser Valley, East Vancouver. This would mean that everything about the game is the same, refereeing, scorekeeping, rules, I.D. checks and so forth. It simply allows for those living in a prescribed zone away from campus a way to participate under the UBC intramural umbrella without having to travel all the way to

school to do so. Scores would be uploaded on the same day as a game, and the league will continue in normal fashion, with playoffs being held at the UBC campus. The rationale being that we raise participation through the removal of the commute barrier by bringing UBC recreation to a neighborhood centrally located within students' municipalities/communities. We believe this would eliminate time and commute as deterring obstacles in grad students' decisions to participate in UBC recreation programs and activities.

3) More diverse recreation options.

Graduate students noted the importance of mental health benefits as part of their intramural participation. They noted the social and psychological benefits of participating in physical activity in general, whether on campus or off. A potential solution is to diversify the forms of recreation to include daily, low commitment guided meditation and yoga programs led in spaces such as the library and other underutilized spaces on campus. These could be more beneficial in targeting the specific goals of graduate students in managing stress. An individual activity could mitigate the difficulties the interview participants noted in finding others to form an intramural team as well as the concerns about gym space availability and a high commitment gym membership pass and the related cost.

4) Making recreation as cost-effective as possible.

A major barrier to recreation participation discussed by many of our participants was financial constraints. In addition to providing as many recreation options at little or no charge, another way to reduce financial burdens while increasing recreation participation amongst this group of students could be by reaching out to city partners to subsidize graduate student recreation participation. By providing these partners with evidence that these students are willing to participate but are extremely restricted due to their financial circumstances, potential programs that fund graduate student recreation participation may be implemented.

5) Partnering with other groups on campus to manage resources and the capacity of the current recreation staff.

Time, staffing, and financial restraints of the recreation program could inhibit the ability to change rental times to peak hours, expand leagues, or add additional more diverse programming. These changes, however, are likely to improve the satisfaction and engagement

IDENTIFYING RECREATION GAPS FOR GRADUATE COMMUTER STUDENTS

with intramurals and recreation from graduate students. As these changes are difficult yet valuable, it is wise to capitalize on the pre-existing groups on campus such as the undergraduate societies, the Alma Mater Society (AMS), the Calendar, the Greek system and Generocksity for example. These groups have the human resources and commitment to campus culture and involvement established. Allowing these groups to lead pop up activities and movement opportunities with the toolkits provided by UBC Recreation would share the workload and engage a wider more diverse population.

References

- A New Kind of Campus Center. (n.d.). Retrieved March 28, 2018, from <https://planning.ubc.ca/vancouver/news-events/newsletter/2013-07-26/new-kind-campus-centre>
- Haase, A., Steptoe, A., Sallis, J. F., & Wardle, J. (2004). Leisure-time physical activity in university students from 23 countries: Associations with health beliefs, risk awareness, and national economic development. *Preventive Medicine*, 39, 182–190. <https://doi.org/10.1016/j.ypmed.2004.01.028>
- Hilbrecht, M., Smale, B., & Mock, S. E. (2014). Highway to health? Commute time and well-being among Canadian adults. *World Leisure Journal*, 56(2), 151-163. doi:10.1080/16078055.2014.903723
- Henchy, A. (2013). The perceived benefits of participating in campus recreation programs and facilities: A comparison between undergraduate and graduate students. *Recreational Sports Journal*, 37(2), 97-105. doi:10.1123/rsj.37.2.97
- Reichert, F. F., Barros, A. J., Domingues, M. R., & Hallal, P. C. (2007). The role of perceived personal barriers to engagement in leisure-time physical activity. *American Journal of Public Health*, 97(3), 515-519. doi:10.2105/ajph.2005.070144
- Quick Links Menus. (n.d.). Retrieved February 05, 2018, from: <http://news.yorku.ca/2016/04/07/four-toronto-universities-release-findings-of-student-transportation-needs/>
- Van Berkel, K., & Reeves, B. (2017). Stress among graduate students in relation to healthy behaviours. *College Student Journal*, 51(4), 498-510.
- Who are our Students? Implications for Teaching and Learning. (n.d.). Retrieved February 13, 2018, from <https://ctl.ubc.ca/2012/08/15/who-are-our-students-implications-for-teaching-and-learning/>

Appendix B

Impact of Commuting on Recreation Participation

What is your program/what are you studying at UBC?

How long is your average daily commute?

What form of transportation do you use?

How much time do you spend on campus daily? Is it all out of necessity or is some for leisure?

Do peak hours affect when you decide to come and leave campus?

How often/how much time do you spend participating in recreation at UBC on average every week?
(Please, only account for time on the field, not commuting time or check in time)

What types of recreation do you participate in at UBC?

IDENTIFYING RECREATION GAPS FOR GRADUATE COMMUTER STUDENTS

Does your commute deter you from spending more time on campus or engaging in more recreation opportunities on campus?

How much physical activity do you get a week? Would you like to be doing more, if so how much?

What are your major priorities away from school that takes up most of your time? Please explain.

Do you participate in recreation activities off campus run by other groups? If something like this was available on campus would you be more inclined to participate?

Are you aware of the recreation options available to you at UBC? Please detail them below

Intramural Leagues Offered	Street Hockey Volleyball Soccer Futsal Flag Football Basketball Ultimate Ice Hockey Dodgeball
Events	Fall Softball Classic

IDENTIFYING RECREATION GAPS FOR GRADUATE COMMUTER STUDENTS

	<p>Day of the Longboat</p> <p>Parasport</p> <p>Gutterball Bowling</p> <p>Pumpkin Run</p> <p>UBC's largest Zumba</p> <p>Tennis Smash</p> <p>Water Wars</p> <p>Lace Up for Kids</p> <p>Curling Bonspiel</p> <p>Gladiator</p> <p>Faculty Cup</p> <p>Fit Mix</p> <p>Yoga Rave</p> <p>Howl at the Moon Volleyball Tournament</p> <p>Triathlon/Duathlon</p> <p>Storm the Wall</p>
Facilities	<p>Free with Student Card- Aquatic Centre and Doug Mitchell Arena</p> <p>Bird Coop Term Based gym membership in the Student Recreation Centre</p>

If you were unaware of these recreation options listed above, will you now be more inclined to participate?

IDENTIFYING RECREATION GAPS FOR GRADUATE COMMUTER STUDENTS

Does the social aspect of recreation programs appeal to you or do you like participating in physical activity alone?

What are the main barriers that hold you back from participating more in Recreation UBC

What changes to these barriers would most likely increase your participation in Recreation UBC?

Do you feel as though being a grad student comes with unique barriers? If so, please discuss:

Which of these solutions do you believe would be most helpful in increasing UBC recreation participation for all grad student commuters?

- A. UBC cards/tuition provided discounts to other local recreation centers and gyms in the Vancouver area
- B. If UBC rec. extended leagues to play out of other locations such as Surrey courts/ice-rinks/fields
- C. If UBC rec. allowed you to put in date and time slot recommendations that worked best for your team
- D. If you had more knowledge about all the programs UBC has to offer
- E. If it was easier to connect people who are singles or groups of people who do not have full teams to join together to create teams
- F. Other. Specify?

Do you feel as a KIN grad student, that because of your education, you are more likely to participate in physical activity and recreation than the rest of the grad student population?