

UBC Social Ecological Economic Development Studies (SEEDS) Sustainability Program

Student Research Report

**UBC Intramurals: Identifying and Assessing Barriers Limiting Female Participation Rates**

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## **EXECUTIVE SUMMARY**

The objective of our study, UBC Intramurals: Identifying and Assessing Barriers Limiting Female Participation Rates, was to identify key barriers influencing the decline in women's participation in UBC Intramurals and develop recommendations for UBC Athletics and Recreation (UBC Rec). Recommendations will aim to reduce barriers and facilitate female participation in their Intramurals leagues. Through previous literature, psychosocial, physical, and environmental barriers to participation in intramurals were identified. These barriers, including social media, body image, self-esteem, perceived fitness level, past sports experience, and the accessibility and convenience of intramurals programs, were then used as a guide when creating our online survey questions.

Our online survey was created using an online software tool called Qualtrics. The survey was used to collect responses from female UBC students regarding their perceived barriers to participation and allowed participants to provide feedback or recommendations to improve UBC Intramurals. The survey consisted of 23 questions with two open-ended and optional questions. Participants were recruited using social media by sending a survey link through word-of-mouth on Facebook Messenger and creating posts on UBC Facebook groups.

Ninety-two participants were recruited, and their responses were recorded during the two-week data collection period. Of the 92 participants, 76% were commuter students and 24% were non-commuters. In addition, 84% of the participants were not currently participating in UBC Intramurals. Qualtrics was then used to conduct a descriptive analysis of the multiple-choice responses and Microsoft Excel was used to conduct a content analysis on the open-ended responses, which were organized into themes.

From the analysis of our findings, the most common reasons for not participating included self-esteem, specifically participants' perception of their ability to appear confident or successful in the skills required, and the convenience and accessibility of UBC Intramurals. Furthermore, three main themes were identified as improvements that participants wanted UBC Rec to implement into Intramurals leagues. This included better access to information regarding UBC Intramurals leagues, more consistent league schedules and game times, and the creation of more opportunities for students with different needs, including more gender-specific and just for fun leagues.

Five recommendations were created for UBC Rec to implement into their current Intramurals programs. The first recommendation is to improve the awareness and access to information regarding UBC Intramurals leagues by incorporating female student advocates and using different methods of promotion. The second recommendation focuses on the creation of a female hat league, allowing for a smaller group of students to sign up during registration and allowing female students to learn from other players and improve their self-confidence in their ability to perform the required skills. The third recommendation focuses on having consistent times offered for the Intramurals games, which will help reduce the variability of schedules and help female students better manage their schedules. The fourth recommendation involves increasing the number of sports and the variety of tiers offered within the UBC Intramurals leagues. The last recommendation relates to the direction of future research, specifically using a mixed-methods study on a larger sample.

## **INTRODUCTION & LITERATURE REVIEW**

At the University of British Columbia (UBC), there are currently ten intramural leagues that are available to students that offer a wide range of sports (Intramurals, n.d.). In each league, UBC Intramurals offer three different categories: an Open division, a Women, Two-spirit, Trans, Gender non-conforming (W2STGN) division, and a Co-rec division, in addition to tiers that are catered to different skill levels. The schedule of UBC Intramurals varies for different sports, but an overall trend shows a long window for game times (Intramurals, n.d.). On weekdays, games can begin as early as 5:00 p.m. to as late as 1:00 a.m.; whereas, on weekends, games can begin anywhere from 9:00 a.m. and run until 11:00 p.m. (Intramurals, n.d.).

Although engaging in physical activity (PA) has been shown to have several health benefits, such as a decrease in stress and an increase in strength (Fry, 2017), the number of women participating in UBC Intramurals has been slowly declining. This may be problematic as women across varying age groups already spend less time engaging in PA in comparison to men (Fry, 2017). As a result, certain initiatives have been taken to promote female participation in PA at UBC. This includes having a women's division in sports leagues, female-only fitness hours, and female representation in promotional material (Intramurals, n.d.). However, it is also important to identify and address possible challenges influencing the success of UBC Intramurals programs and the barriers that may inhibit women attending UBC from participating in Intramural leagues.

Several studies have identified success metrics that may have an influence on female participation rates in intramural programs (Brunton, 2016; Palmer, 2010). In a study conducted by Palmer (2010), 246 students were surveyed on their preferred times for intramurals programs. It was found that from Monday to Thursday, 5:00 to 8:00 p.m. were the most ideal times

(Palmer, 2010). Specifically, female students preferred games being scheduled at the beginning of the week from 7:00 to 8:00 p.m., and off-campus students preferred games early in the evening during the weekdays (Palmer, 2010). Furthermore, the scheduling of intramural games may limit the involvement of commuter students in recreational sports as they typically spend less time on campus (Becker, Dupont, & Fincham, 2019; Woodley, 2017). Therefore, universities that encourage and incorporate student feedback regarding program scheduling may find more success in increasing female participation rates in intramural sports as adjustments can be made to best suit the schedules and needs of students (Stoll, 2010).

Moreover, Brunton (2016) found success in having student advocates help expand the reach of recreational and intramural programs. It was found that student participation increased as student advocates became sources of information by using personal experiences, peer encouragement, and communication with students across campus (Brunton, 2016). Additionally, students from specific demographics were more likely to engage in recreational programs if their advocate was a part of their demographic (Brunton, 2016). Thus, having female students educate and inform other female students on the types of intramurals programs, schedules, and facilities offered by the university, may spark an interest in more female students and potentially increase the overall participation rate of female students in intramural programs on campus (Stoll, 2010). Despite UBC Athletics and Recreation's efforts in incorporating and implementing the following success metrics into their programs, other barriers may explain the decline in female participation rates.

### **Psychosocial Factors: Social Media, Body Image, and Self-Esteem**

Psychosocial factors such as social media, body image, and self-esteem are some barriers and challenges that may explain the decline in female intramural participation. For example, the

growing use of social media has influenced the delivery of female representation in sports (Liechty, Freeman, & Zabriskie, 2006). Women have been socialized into acting in a gender-appropriate manner that reflects hegemonic femininity— qualities defined as womanly— and are often pressured into attaining and maintaining a thin body (Krane, 2001). These normalized ideals of women may then influence their choice of fitness activities and could result in body weight and body image dissatisfaction (Frederick & Shaw, 1995; Krane, 2001). Research results have also indicated that the physical appearance of a woman may determine their perceived self-worth and status (Guszkowska, 2015). Liechty et al. (2006) found that appearance dissatisfaction was a prevalent constraint in leisure activities, particularly in university and middle-aged women. The authors also found that body-focused activities reduced enjoyment in the choice of leisure sports. The influence of social media in socializing women into normalized ideals and its negative influence on body image and self-esteem in female university students may further explain the reduced number of female participants in intramural sports.

### **Physical Factors: Perceived Fitness Level and Sports Experience**

Additionally, physical factors such as an individual's perceived level of fitness and previous sports exposure may impact their decision to participate in PA (Lemoyne, Valois, & Guay, 2015). Previous study results showed that those with high sport competence were more inclined to participate in correlated physical activities (Buckworth & Nigg, 2004). In a study conducted by Lemoyne et al. (2015), the correlation between physical self-concept and participation in PA in 386 college students was investigated. It was found that students with higher sport competence were more motivated to partake in sports in comparison to other varieties of PA. Similarly, Molina-Garcia, Castillo, and Pablos (2009) found that students with a long history of PA, before entering university, expressed high intentions of practicing PA in the

future. Thus, it could be expected that female students with a low perceived level of fitness and little experience in sports are less likely to participate in intramural sports (Lemoyne et al, 2015; Molina-Garcia et al., 2009).

Furthermore, Thomas et al. (2019) found that male students had higher levels of participation in recreational sports such as intramurals leagues and competitive sports, whereas females participated more in fitness-related activities such as group fitness classes, dance, and yoga. Given female university students' increasing interest in other activities such as fitness classes, dance classes, and yoga classes, it may explain the decline in female participation in UBC Intramurals sports leagues (Thomas et al., 2019).

### **Environmental Factors: Accessibility and Convenience of Programs**

Lastly, environmental factors such as the accessibility to recreational facilities that provide indoor and outdoor space for PA may facilitate participation in fitness activities (Humpel, Owen, & Leslie, 2002). Humpel et al. (2002) found that environmental attributes such as space, aesthetics, and the convenience of the facility contributed to the likelihood of sport participation. Previous studies also proposed that female participation in leisure sports may rise with increasing accessibility to sporting facilities (Eime et al., 2017). Additionally, students who live off-campus frequently rely on the use of public transportation to reach recreational facilities (Butler, Black, Blue, & Gretebeck, 2004). However, despite the mode of transportation, the perceived convenience and geographical proximity of sporting facilities is an important factor. Sallis et al. (1990) investigated the distance between homes and exercise facilities in relation to exercise frequency in San Diego residents. It was found that although nearby facilities were desirable, factors such as inadequate or paid parking and inconvenient league schedules influenced exercise participation. Subsequently, female students who do not live on campus may

choose not to participate in UBC Intramurals if UBC is relatively distant from their home or if the intramurals schedule does not coincide with their own.

Psychosocial, physical, and environmental factors influencing participation rates in Intramurals programs have been investigated in students who attend institutions outside of UBC (Krane, 2001; Lemoyne et al., 2015; Sallis et al., 1990). In addition, the topic of female participation in UBC Intramurals has not been thoroughly investigated, and consequently, UBC Rec may not have the necessary insight to explain the decline in female participation rates observed in their Intramurals programs or to work on possible solutions to combat this issue. Therefore, the purpose of this study is to determine the barriers influencing the decline in female participation rates in UBC Intramurals, specifically in female students ages 17 to 25. An online survey questionnaire will be created to identify psychosocial, physical and environmental barriers that female students may face, in addition to collecting student feedback and experiences with UBC Intramurals programs. Through descriptive statistics and content analysis of the questionnaire results, recommendations will be provided for UBC Rec to reduce barriers and enhance female participation rates in UBC Intramurals leagues.

## **METHODS**

### **Background Information: Target Group and Rationale for Choosing Target Group**

As identified in the literature review, there are a variety of psychosocial, physical, and environmental barriers that may influence the decline in female intramurals participation rates (Krane, 2001; Lemoyne et al., 2015; Sallis et al., 1990). However, there has not been extensive research regarding barriers influencing female participation rates in UBC Intramurals, and the factors identified in previous literature may not be specific to UBC Rec. Additionally, some factors may influence female participation rates more than others, thus, creating solutions to

combat unidentified barriers would be ineffective. To address this issue, the first step is to identify barriers that may influence the decline in female participation rates, specifically in UBC Intramurals. Possible solutions and recommendations will then be explored to combat the identified barriers. With an increasing trend of sedentary behaviour among university students, it is important to identify and address the barriers influencing female student participation in intramurals sports (Baghurst et al., 2019).

According to Szeri & Mathieson (2018), the representative age range of UBC female students are 17 to 25 years of age, with 57% of the overall population being commuter students (Becker et al., 2019). Also, compared to students who live on campus, commuter students typically spend less time on campus (Becker et al., 2019). Their commute time to and from school may limit their ability to form strong relationships with peers and faculty members, and become involved in clubs, events, and programs such as UBC Intramurals (Newbold, Mehta, & Forbus, 2011; Woodley, 2017). Thus, for the purpose of our investigation, the target group will aim to include female UBC students, ages 17 to 25, with an emphasis on the comparison between commuter and non-commuter students.

### **Description of Methods**

An online survey was created using Qualtrics and 23 questions were generated based on the barriers and success metrics identified in our literature review. Participants were recruited using social media platforms, specifically our personal Facebook accounts. The online survey link was promoted through word-of-mouth on Facebook Messenger and posts were created on UBC Facebook groups (Figure 1, Appendix C). The survey link directed participants to a consent form that included a description of the research purpose and information regarding the research



project including the procedures, outcomes, potential benefits and risks, and the contact information of the principal investigator. The consent form also ensured the privacy and anonymity of participants' responses before they proceeded to the survey (see Appendix A).

In the online survey, participants were asked a range of questions that included general questions regarding their participation in UBC Intramurals and the potential factors that could be influencing their choice in participating. Two of the 23 questions were open-ended, where participants were able to voice their concerns and provide feedback or recommendations for UBC Rec and their Intramurals programs. After the two-week data collection period, 92 participants were recruited and completed the survey. The resultant data were analyzed through the use of descriptive statistics and qualitative analysis. For the descriptive analysis, the quantitative data were grouped automatically by Qualtrics and were based on participant responses to the survey questions. Statistical figures were then created using Qualtrics (Appendix C). Additionally, the qualitative data were analyzed using content analysis, where participant responses from the open-ended questions and optional text boxes in the survey were categorized into common themes and tables were created using Microsoft Excel. Answers that were relative to the options that we provided were grouped as recommendations for UBC Rec (Table 1, Appendix C; Table 2, Appendix C). From the analysis of our findings, five possible recommendations were created for UBC Rec to implement into their current Intramurals program: two short-term recommendations, two long-term recommendations, and the last one being a recommendation for future research.

### **The Rationale for Using Online Surveys**

Qualtrics is an online survey tool that can formulate multiple-choice and Likert-type scale questions, as well as open-ended questions (UBC Survey Tool, 2020). As university students

frequently use online platforms such as Facebook and Instagram (Liechty et al., 2006), the use of an online survey allowed us (the researchers) to reach our target group more conveniently through the use of our Facebook accounts. Additionally, online surveys are convenient for the participant as they only take a few minutes to complete, are straightforward, and participants can complete them at their own time and pace (Evans & Mathur, 2005). Lastly, Qualtrics does not require respondents to provide personal identifiers, such as their name, to complete the survey. This helps ensure the privacy and confidentiality of the responses collected from each participant.

### **Recruitment Procedures**

From March 4th to March 18th, 2020, our group members promoted the online survey through Facebook. An online link was sent through word-of-mouth on Facebook Messenger, and posts were created in various UBC groups, such as the UBC Graduating Class of 2020 and 2021, and the UBC Kinesiology Facebook group. Each post consisted of the link to our Qualtrics survey and outlined the purpose of our research project (Figure 1, Appendix C). The survey was open to any UBC student who identified as female.

### **Challenges Encountered in Data Collection and Analysis**

Throughout the data collection and analysis process, we did find it difficult for the whole team to evaluate the data as the software we used, Qualtrics, only allowed the member who created the survey to access the data, conduct the analyses, and create the statistical figures. As such, the raw data had to be extracted into a Microsoft Excel document for the rest of the team to view as opposed to viewing it directly on Qualtrics.

Additionally, due to the use of online surveys to collect our data and the assumption that the recruited participants were current UBC students, it was difficult to confirm the true age of

each participant who completed our survey. Consequently, our objective to gather data regarding barriers to female participation in UBC Intramurals in students ages 17 to 25 may include individuals who are younger and/or older than this age range. However, this also allowed us to provide UBC Rec with recommendations that could reach a broader demographic of female students at UBC.

## **RESULTS**

### **Quantitative Data Analysis: Descriptive Statistics**

From our survey responses, 76% of our sample took public transportation or drove to school, whereas, 50% of those respondents commuted to school 3 to 5 days of the week (Figure 2, Appendix C). Furthermore, nearly 50% of respondents had a commute time of fewer than 30 minutes (Figure 3, Appendix C). In comparison, almost equally (49.4%), respondents had a commute time between 30-90 minutes (Figure 3, Appendix C). Additionally, we also found that 82% of respondents knew about UBC Rec and what they had to offer (Figure 4, Appendix C). However, many respondents had not participated in UBC Intramurals (50%) while 34% of respondents had previously participated but are no longer a part of UBC Intramurals (Figure 5, Appendix C). The most common reasons for not participating in UBC Intramurals were inconvenient league times (41.5%), commute time (35%), and the lack of friends to join with (27.7%; Figure 6, Appendix C). In the survey, 37.7% of survey participants participated in an intramural/recreational league outside of UBC (Figure 7, Appendix C). We found that the top four factors that influenced their decision to participate in leagues outside of UBC included convenience (45.7%), accessibility (39.4%), more friends to join with (39.4%), and more options in terms of skill level/tier (31.9%; Figure 8, Appendix C).

### **Factors that Influence One's Decision to Not Participate in UBC Intramurals**

When considering social media as an influence to not participate in intramurals, 70% of responses stated that social media had no influence on their considerations for participating in UBC Intramurals (Figure 9, Appendix C). Similarly, when considering body image as a factor that influenced participation, we saw that 52% of responses were not influenced by body image. On the other hand, only 22% of respondents stated that the fear of judgement from other participants based on their physical appearance influenced their decision to not participate in UBC Intramurals. Similarly, 21.3% of respondents were worried about what they look like when they played in intramurals (Figure 10, Appendix C). When considering self-esteem as a factor, 40% of the respondents were concerned with their ability to perform well, while 37% were concerned with their ability to effectively display the skills required for the intramural sport. Collectively, 52% of participants were concerned with their perception of their ability to appear confident in the skills required (26.6%) or their ability to succeed in intramurals (25.5%; Figure 11, Appendix C). When considering factors around the convenience of UBC Intramurals, 47.9% of the responses stated that the scheduling of UBC Intramurals league games (e.g. time and day) influenced one's decision to not participate in UBC Intramurals. Other common responses included the commute time to UBC Intramural leagues (28.7%), and the skill level and/or competition of UBC Intramural leagues (21.3%; Figure 12, Appendix C). For past sports experience influencing one's decision to not participate in UBC Intramurals, 48% of the responses strongly disagreed or disagreed that one's past sports experience had not influenced their decision to not participate. Within those responses, 34.6% somewhat agreed or agreed that their past sports experience influenced their decision not to participate in UBC Intramurals (Figure 13, Appendix C). Finally, participants were asked to evaluate whether their perceived

fitness level has influenced their decision not to participate in UBC Intramurals. Within these responses, 45.3% strongly disagreed or disagreed, while 37.4% of respondents somewhat agreed or strongly agreed (Figure 14, Appendix C).

### **UBC Rec and Intramurals**

Participants in this study were asked to rank the facilities in which UBC Intramurals took place and also UBC Rec's use of UBC students to promote their intramurals programs. When asked about the facilities, findings showed 43.4% of participants who responded that the facilities equalled their expectations (Figure 15, Appendix C). In terms of the UBC Rec's use of UBC students to promote their intramural programs, 48.7% of responses ranked it as moderately effective or very effective (Figure 16, Appendix C). Participants were also asked whether UBC Rec encouraged student feedback on their intramural's programs—43.4% put that this question did not apply to them which is likely because they had never participated in a UBC Intramurals or recreational league (Figure 17, Appendix C). Within this question, those who have participated in intramural leagues responded with sometimes (22.4%) and most of the time (14.5%). Finally, participants were asked to provide recommendations to improve female participation rates in UBC Intramural's programs. These factors included scheduling more times that intramural leagues are run (46.8%), including more formats for intramural sports (45.7%), including more tiers for different skill levels (43.6%), including a wider range of intramural sports (31.9%), and improving UBC Rec's reach and exposure for intramurals programs to students on campus (30.9%; Figure 18, Appendix C).

### **Qualitative Data Analysis: Content Analysis**

Through data analysis on the qualitative questions, summaries were made for each question. For Question 22, we asked participants to suggest recommendations for UBC Rec to

help increase women's participation in intramural sports. Five themes emerged from the responses: better access to information about the leagues (i.e. intramurals opportunities, how to join the league or create a team), improvements on scheduling methods, more opportunities for gender-specific and Just for Fun leagues, buffering the intimidation factor of sport, and better facility management.

The three major recommendations that received the most feedback included better access to information regarding UBC Intramurals, scheduling methods, and creating more opportunities for people with different needs. Many participants mentioned that they did not know about the intramural leagues that UBC Rec offered and that advertising such information would be helpful. Similarly, individuals found it difficult or did not know how to join the league "if [they didn't] already know someone who [was] on an intramural team" (Table 2, Appendix C). Participants suggested referral programs for students who have never joined an intramural league before. In addition, not only was it difficult to join a team, but the process of creating and registering a team was also troublesome for participants. For example, there was a lack of information regarding the process of registering a team as some participants indicated that they "[didn't] know how to become [a captain] nor [know] the responsibilities of being a captain" (Table 2, Appendix C). Moreover, the responsibility of being a captain was "pretty troublesome," which deterred individuals from creating a team. Consequently, without a captain, a team cannot be formed and may result in a decrease in participation in leagues.

The second major theme revolved around the scheduling methods of UBC Intramurals. Currently, UBC Rec requires students to register for the intramurals league first, and once the registration period is closed, the schedule is made. Therefore, participants are currently registering for the leagues despite "schedules not [being] released before signing up and

frequently [being] changed during the league” (Table 2, Appendix C). Without knowing the scheduled days for games before registration, this may create feelings of uncertainty for the participants and may deter participants from committing to the leagues. Additionally, an important concern regarding the scheduled time of play is safety. Many female participants voiced their concerns about having league games at night and subsequently having to “walk [or commute] home at night” (Table 2, Appendix C). If games were scheduled at more suitable times, perhaps more female participants would feel inclined to join an intramurals league.

The last major theme surrounded the idea of creating more opportunities for people with different needs. This included participants who wanted more gender specific, Just for Fun, and lower commitment leagues. These needs may have presented due to feelings of intimidation in joining UBC Intramurals. For example, a participant voiced their opinion that “an all-female just for fun league would make [her] join” (Table 2, Appendix C). It should be taken into consideration that other female students may feel the same way due to the fear of being judged and intimidated by others and those of the opposite gender. Although there is a women's (W2STGN) category, some female students may feel that an all-women’s league is necessary. If there were more opportunities for female students to participate with other females in specific intramural leagues, it may improve female participation rates in UBC Intramurals.

## **DISCUSSION**

The overall goal of our survey was to use the data we collected to investigate and gain a better understanding of the potential barriers influencing women’s participation in UBC Intramurals. By gathering more information about these barriers, we can provide recommendations to UBC Intramurals to help reduce barriers, increase female participation rates, and better understand why female participation in intramurals is decreasing.

Initially, we planned to collect data on female students between the age of 17 to 25, however, we realized that our survey was more suitable for a broader range of female students at UBC. A comparison between commuter and non-commuter students was possible due to a large portion of survey participants being commuter students (Figure 2, Appendix C). These individuals classified themselves as having previously participated in UBC Intramurals and are not currently participating in one or have never participated in the leagues (Figure 5, Appendix C). It was found that a majority of the students that participated in the survey were aware of UBC Intramurals. Although a majority of the survey participants knew about UBC Intramurals, there were still some participants that were unfamiliar as to what UBC Intramurals had to offer (Figure 4, Appendix C). The knowledge gap about UBC Intramurals could be related to the lack of information surrounding how to register for a team and the programs and leagues offered (Table 2, Appendix C). Increased exposure and the promotion of UBC Intramural programs would then have a significant role in raising awareness in female students. Similarly, the results suggest that UBC Intramurals needs to improve their reach and exposure for intramural programs to students on campus. With the data collected, common themes had emerged concerning the targeted factors that have been previously described in the literature surrounding social media, student self-perception and confidence, and building accessibility and commute time, that have influenced intramurals participation (Eime et al., 2017; Humpel et al., 2002; Lemoyne et al., 2015; Liechty et al., 2006).

In the data collected, we found that having more available time slots for intramurals leagues would be beneficial for participants. Through our open-ended questions, participants brought up the idea of having a variety of available times for intramural games, where certain times and days were allocated for a specific tier (Table 2, Appendix C). This suggests that



participants would prefer a completed schedule prior to the registration period. Having a set schedule may enhance female participation numbers as students can incorporate and adjust their personal and school schedules around the timing of intramural games. Additionally, as a large portion of our survey participants were commuter students, results showed that commute times also influenced the students' decision on whether or not to participate in UBC Intramurals (Figure 6, Appendix C). As commute time may take up a large fraction of an individual's day, having a determined schedule could potentially increase their participation in intramurals. With commute time and mode of transportation being factors influencing women's participation, the accessibility and location of UBC facilities is also a contributing factor. Humpel et al. (2002) found that the accessibility of recreational facilities can help facilitate participation in fitness activities. Earlier literature also proposed that female participation in leisure sports could rise if there were increasing accessibility to sporting facilities (Eime et al., 2017). With survey respondents being mostly commuter students, our results suggest that UBC Intramurals should encourage and promote intramurals leagues to female campus student residents, as facilities would be the most accessible and convenient for this demographic of students.

Additionally, our results suggest that UBC Intramurals should include more team categories, tiers, and types of sports in their leagues (Table 2, Appendix C). UBC Rec currently has competitive, recreational, and Just for Fun teams with 10 league categories available to students (UBC Recreation, n.d.). Recreational and Just for Fun leagues differ in that recreational teams are similar in all aspects of competitive teams but are played at a lower intensity and students typically have beginner to intermediate skill level in the sport. On the other hand, Just for Fun teams eliminate team structure and tiers (UBC Recreation, n.d.). Both competitive and recreational teams include an Open category, a Women's (W2STGN) category, and a Co-rec

category (UBC Recreation, n.d.). The Open category welcomes all individuals to participate regardless of gender, whereas the mixed Co-rec category has a maximum number of self-identified males on each team. Within each sport, there are also different tiers. There are currently three competitive tiers within the leagues, however, not all tier options are offered for all leagues (UBC Recreation, n.d.). From the information gathered, results suggest that respondents wanted to incorporate a wider range of sports to the leagues as well as various tiers for different skill levels (Table 2, Appendix C). In addition, different team categories in intramurals were also preferred, such as having an all-women's team. However, as there is currently a W2STGN category available, the knowledge gap surrounding intramurals is present. With survey participants being unaware of the tiers and categories offered by UBC Intramurals, the interest of having more team categories could be addressed with further education and promotion of UBC Intramurals programs.

Furthermore, our findings suggest that there is an intimidation factor amongst our survey participants. Some of the factors that we provided in the survey included an individual's perceived level of fitness, past sports experience, and overall body image and self-esteem. These psychological factors may potentially be generalized to the larger female UBC population as there has been an overall decline in UBC Intramurals. Previous literature also supports the idea that female students with a low perceived level of fitness and little amount of experience in sports are less likely to participate in intramural sports (Lemoine et al, 2015; Molina-Garcia et al., 2009). Contrary to the supporting literature, our data shows that half of the participants disagreed or strongly disagreed that their sporting background influenced their decision to not partake in UBC Intramurals. However, it should be noted that the other half did agree or somewhat agreed that their past sporting knowledge did have an influence (Figure 13, Appendix

C). Additionally, results suggest that a majority of the participants' perceived level of fitness did not influence their decision in not participating in intramurals, but there were a few respondents that somewhat agreed that their perceived level of fitness influenced their decision (Figure 14, Appendix C).

Moreover, as earlier research has suggested, the growing use of social media has influenced female representation in sport (Liechty et al., 2006). With social media being one of the factors that we identified as being a potential barrier in women's participation, an individual's body image and perceived level of fitness could also be impacted. Despite previous literature, our results displayed that social media had a weak influence on a respondent's decision to not participate in UBC Intramurals (Figure 9, Appendix C). Additionally, a majority of participants responded that no aspect of body image influenced their decision to not participate in intramurals, but 22% of the participants did fear being judged based on their physical appearance (Figure 10, Appendix C). It is then plausible that some psychosocial factors could instill a sense of intimidation and fear in some individuals' decisions to engage in the leagues facilitated by UBC Intramurals.

### **Challenges, Limitations, and Possible Improvements to the Study Design**

Some limitations and challenges that were presented throughout the course of our study included the disadvantages of using online surveys, reporting biases, and an inability to maximize the external validity of our study.

#### **Disadvantages of Using Online Surveys**

When creating our online survey, a majority of the questions were tailored towards three barriers identified in previous literature (Krane, 2001; Lemoyne et al., 2015; Sallis et al., 1990). This may be disadvantageous as there may be other factors or barriers resulting in a lower female

participation rate in UBC Intramurals. We attempted to address this challenge by providing participants with an optional text box for any factors that were not included in the original survey options. However, participants may have chosen to select options already embedded in the question if they found it inconvenient to type out an answer. Surveys may also be disadvantageous because responses may not be as insightful compared to interviews. We chose to create a short online survey as it was the most convenient option for students to complete while also providing valuable information for our analysis and recommendations.

However, if we were to re-run this study, an option would be to conduct a mixed-methods study that included a broader survey addressing barriers and semi-structured interviews with female UBC students to gain further insight into their experience with UBC Intramurals. This would also help enhance our data analysis and subsequent recommendations we could provide to UBC Rec as we would have unmediated information from students who do and do not participate in UBC Intramurals.

### **Reporting Biases**

The analyses conducted on the data we gathered may be susceptible to response biases, or the tendency of an individual to answer questions on a survey untruthfully or misleadingly (Kowalski, McHugh, Ferguson, & Sabiston, 2018). To address this challenge, we ensured that prospective participants were aware that their responses remained anonymous in the consent form. However, we had no method of validating participant responses and therefore could not rule out any participants who may have agreed to statements or questions because they had difficulty understanding the question (i.e. acquiescence; Kowalski et al., 2018).

During our data analysis, we found that participants often included responses in the optional text box that were similar to options already provided in the original survey. In future

studies, we would create a survey with additional questions that addressed each of the barriers more specifically so participants could understand each option before choosing a response.

Another change would be to structure our survey questions more articulately to avoid confusion when choosing a response and prevent response biases such as acquiescence.

### **Inability to Maximize the External Validity of the Study**

Our ability to maximize the external validity of our study was impacted as our target group initially focused on female UBC students between the age of 17 and 25. Specifically, our study may produce low population validity: a type of external validity in which findings from a sample can be generalized to the broad population (Kowalski et al., 2018). Therefore, we would have difficulty generalizing our findings and recommendations to all the female students who attend UBC due to a small target group that only represented a fraction of the total population at the university.

To address this limitation in a future study, we would include a larger demographic of female students at UBC. For example, by not restricting the age range of our target group and recruiting more students into our study, we would be able to further generalize our findings to a broader population. Additionally, promoting our survey using other methods, such as posters, may help recruit students who do not use social media platforms. A broader target group would also allow us to gain more insight into the barriers perceived by female students when participating in UBC Intramurals. Lastly, the recommendations that we make from our findings and analyses would provide a more accurate representation of what female students at UBC are looking for in an intramural sports program if a larger demographic of female students were recruited.

## **RECOMMENDATIONS**

To enhance female participation rates and reduce barriers to participation in UBC Intramurals programs, five main recommendations have stemmed from our research. Two short-term recommendations that UBC Rec may implement into their current Intramurals programs include improving access to information regarding UBC Intramurals programs and introducing a hat league format during sign-up and registration. In addition, two long-term recommendations that UBC Rec may work towards involve developing a consistent league schedule for each sport and offering a wider range of formats and sports options for students. Lastly, a recommendation for future research is provided for this topic.

### **Improving Awareness and Access to Information Regarding UBC Intramurals Leagues**

One of the first short term recommendations that UBC Rec can implement promptly would be to improve access to information regarding intramurals league opportunities, registration, and the responsibilities of being a captain. This recommendation relates to the concept of “Making the Healthiest Choice, the Easiest Choice” — if the information is made to be more accessible, then it may enable more students to engage in intramural leagues efficiently and with ease (World Health Organization, 1986).

From our findings, it was apparent that many participants lacked awareness of intramural leagues organized by UBC Rec. Therefore, promotional topics could include informing students on the types of sports and tiers offered by UBC Intramurals, educating students on how to sign up for an intramural league, or educating students about the responsibilities of a captain role.

With respect to the methods of promotion, UBC Rec often has booths set up in various locations across campus, with student staff members who provide information and answer questions regarding the services and events run by UBC Rec. Additional recommendations for

promoting UBC Intramurals programs would include having female student advocates to encourage other female students to join the leagues. Through peer encouragement, student advocates can promote recreational and intramurals programs effectively by creating a welcoming and personable environment for female students (Brunton, 2016). However, more posters or media-based methods may also help promote UBC Intramurals and reach female students who may not feel comfortable approaching the booths on campus. For example, UBC Rec could create short videos about the leagues offered by UBC Intramurals or have demonstrations on how to create and register an intramurals team. It could be advertised on social media, such as Facebook or Instagram, as students frequently use these platforms. In addition, posters or infographics could be created to encourage students to join UBC Intramurals leagues and be posted in populated areas on campus, such as The Nest, the Life Building, or near the bus loop.

Additionally, UBC Rec currently has a Facebook group created for free agents in which students can look for more teammates to join their teams, and vice versa, for individuals to look for a team to join. However, another option would be to create a separate Facebook group or page that is dedicated to promoting UBC Intramurals leagues and providing first-timers with a safe space to ask questions. This may be beneficial for increasing female student awareness and participation rates as it creates more dialogue for participants to connect, making registration for a league less intimidating, and can be used to provide more information for existing intramural leagues. Having a Facebook group or page managed by UBC Rec would also facilitate a welcoming environment for students to search for necessary information and could also be promoted through other official UBC social media outlets.

A goal that could be directed toward this recommendation is an increase in female students' awareness and an increase in women's participation in UBC Intramurals leagues. After introducing new methods of promotion, a campus-wide survey could be created and distributed to students and indicators could include the number of female students who know about the leagues offered by UBC Intramurals, who know how to register an intramurals team, and the number of female students currently registered or are interested in registering for an intramurals league.

### **Creation of a Female Hat League Sign-Up**

Another short-term recommendation is the creation of a hat league. From our results and discussion, a common theme for female students who decided not to participate in intramurals included the lack of interested friends to sign up for a league. This may occur when team captains fail to recruit enough players to register or when a free agent struggles to find a team to join for the league. To address these issues, a female hat league could be created where female students can register for a league as a solo, pair, or trio, and the league organizers would sort them into random teams together. To have an equal level of skill across the teams, a number can be assigned to each student who registers, and higher numbers would represent those who are more advanced in the sport.

As intramural leagues are a source of physical activity, having a hat league would make a healthier choice, such as participating in an intramurals league, an easier choice as less work would be required for female students to find a team. Another benefit of implementing a female hat league includes the social benefits that the participants may gain. For example, if you sign up as a pair, you remain with your partner throughout the league, but also get an opportunity to meet new teammates. This may cultivate new friendships with individuals you may have never had the



opportunity to meet otherwise. In turn, the individuals you meet during the hat league could eventually form the building blocks of a consistent team in the intramurals league. Another advantage of a female hat league is the shared learning that may occur among the team. For example, higher skilled players can educate newer players regarding the sport. This will increase a new player's perceived level of fitness and their overall confidence in their ability to perform skills and be successful. These benefits will target the individual level within the social-ecological model.

The success of a female hat league can be evaluated with a survey at the end of the league, which will gauge the satisfaction of the female students who participated in the league. Possible indicators include satisfaction with the league, plausibility to return to the league in the upcoming term, and the likelihood of recommending the league to others. The success of this recommendation may be based on success within these indicators, where the decision to continue the hat league can be decided. A long-term indicator for the success of a female hat league is an increased number of female students participating in other intramurals leagues offered by UBC Rec. The hat league may serve as a steppingstone between those who do or do not decide to participate in intramurals leagues offered by UBC Rec.

### **Consistent League Schedules and Game Times**

A long-term recommendation that UBC Rec may implement includes having consistent league times throughout the school year. Through the use of our open-ended questions, the results of our survey suggested that female students preferred having consistent league times. Currently, individuals are given a few days in the week and a range of times for when their league games may occur. To participate in the league, players must keep their availability open to avoid schedule conflicts. With the current scheduling format, individuals are unable to plan

out their week due to the variability in game time. As inconsistent league times may be inhibiting female students from participating in UBC Intramurals, we recommend that UBC Rec develops consistent and specific time slots and days for games in each tier or category, prior to the registration period. This can be implemented by using the dates that are already set for each sports league as a reference. By having a consistent time each week for their league, participants can adjust their personal schedules to avoid any conflicts. If students are opposed to the scheduled times and dates, UBC Rec can distribute a survey to students to determine the most preferred times for each league. It has been found in previous literature that universities that encourage and incorporate student feedback regarding program scheduling, found success in increasing female participation in intramural sports as adjustments were made to best suit the schedules and needs of students (Stoll, 2010). A way for UBC Rec to measure whether this recommendation has succeeded is to see an overall increase in female participation in intramurals leagues.

However, it may be difficult to accommodate the preferred times and days for each sports league. Therefore, another recommendation could be to notify teams in advance of their next scheduled game. For example, an email reminder could be sent to each team member a day before their game. Under the social-ecological model of health, by changing the social environment, i.e. the scheduling of the league games, individual factors can be better managed. These individual factors may include school, work, or extracurricular activities. As a result, this may ultimately change the health behaviour of female students as they would be more inclined to participate in UBC Intramurals.

### **Introduction of New Sports Leagues and Additional Tiers**

Another long-term recommendation for UBC Rec is to increase the number of sports

leagues offered within the intramurals program. Furthermore, another recommendation is to increase the number of tiers available for each sports league and include a larger range of skill levels, such as more Just for Fun tiers or women's only tiers. One way this may be implemented is to hold test trials for certain sports leagues that are not currently being offered for a short period of time. As seen in our survey, self-esteem had a prevalent influence on female students' decision to participate in UBC Intramurals. Therefore, incorporating more tiers that vary in different skill levels or a women's Just for Fun may create a more inclusive environment that allows female students to lower feelings of intimidation or the fear of judgement from others.

Additionally, through our survey results, many participants suggested that the incorporation of different formats, more tiers for different skill levels, and a wider range of sports would increase female participation. Therefore, UBC Rec could benefit from these additions to their current intramural's programs. Implementation of this recommendation requires collaboration from multiple stakeholders within UBC Rec. This may include marketing organizers, program organizers, volunteers, and participants. Integrating additional sports into the intramural programs requires copious amounts of planning, organizing, and execution from the core stakeholders (i.e. UBC Rec). Therefore, communication and cooperation between stakeholders are needed to ensure the success of these trial runs. Furthermore, Move U can also support UBC Rec's implementations to their intramurals programs through campaigns to increase female student awareness on campus and in classrooms. Incorporating these recommendations may improve female participation rates as student interests are being met and efforts are put into expanding student awareness of intramurals programs.

### **Recommendation for Future Research**

The last recommendation relates to how future research is needed on this topic. In the

process of conducting this research study, there were challenges during data collection and analysis. As outlined, there were disadvantages in solely using online surveys and we were unable to gain detailed responses of female students' experiences with UBC Intramurals. Additionally, due to having a restricted sample size, the extent to which the recommendations and strategies outlined in this research paper may be generalized to the entire female UBC population are limited. To reduce these barriers, future research should be conducted through a mixed-methods study with a different instrument to obtain in-depth data. Specifically, semi-structured interviews can be used to gain further insight into participants' experiences related to UBC Intramurals, along with online surveys. Furthermore, future research should be conducted on a larger sample to examine whether the recommendations addressed in this research paper can be generalized to the entire female UBC population.

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## Appendix A Consent Form

### **KIN 464: Health Promotion and Physical Activity Participant Consent Form for Class-based Projects Women in Intramurals (Group #24)**

**Principal Investigator:**

Dr. Andrea Bundon (Assistant Professor, School of Kinesiology, Faculty of Education)

**The purpose of the class project:** To gather knowledge and expertise from female students at UBC on the barriers to women's participation in intramurals, opportunities for enhancing participation and reducing barriers, to help make recommendations for increasing women's participation and help UBC Athletics and Recreation understand why participation is declining.

**Study Procedures:** With your permission, we are asking you to participate in a survey. With the information gathered, students will critically examine how different individuals understand or engage in health promoting activities or health promotion initiatives.

**Project outcomes:** The information gathered will be part of a written report for the class project. The written report will be shared with campus partners involved with the project. Summaries of findings will also be posted on the following websites. *No personal information/information that could identify participants will be included in these reports or shared with campus partners.*

**UBC SEEDS Program Library:** <https://sustain.ubc.ca/courses-degrees/alternative-credit-options/seeds-sustainability-program/seeds-sustainability-library>

**Potential benefits of class project:** There are no explicit benefits to you by taking part in this class project. However, the survey will provide you with the opportunity to voice your opinion on your experiences with health promoting activities or initiatives in a broad sense and will provide the students with an opportunity to learn from your experiences.

After completing this survey, participants can enter into a draw to **win one of the following prizes:**

- 1 of 2 \$25 gift cards
- 1 of 2 yoga mats
- 

**Confidentiality:** Maintaining the confidentiality of the participants involved in the research is paramount, and no names of participants will be collected.

At the completion of the course, all data (i.e. notes) and signed consent forms will be kept in a locked filing cabinet in Dr. Andrea Bundon's research lab (1924 West Mall) at the University of British Columbia. All data and consent forms will be destroyed 1 year after completion of the course.

**Risks:** The risks associated with participating in this research are minimal. There are no known physical, economic, or social risks associated with participation in this study. You should know

that your participation is completely voluntary and you are free to **withdraw from the study** and there will not be negative impacts related to your withdrawal. If you withdraw from the study, all of the information you have shared up until that point will be destroyed.

**Contact for information about the study:** If you have any questions about this class project, you can contact Andrea Bundon by phone at 604-822-9168 or by email at [andrea.bundon@ubc.ca](mailto:andrea.bundon@ubc.ca)

**Research ethics complaints:** If you have any concerns or complaints about your rights as a research participant and/or your experiences while participating in this study, contact the Research Participant Complaint Line in the UBC Office of Research Ethics at 604-822-8598 or e-mail [RSIL@ors.ubc.ca](mailto:RSIL@ors.ubc.ca) . or call toll free 1-877-822-8598.

**By continuing with this study, you are providing consent**

**Appendix B**  
**Survey Questions**

1. In a typical school week (eg. Monday to Friday), how often do you commute to school by driving or taking public transportation?
  - Always: 5 days a week
  - Most of the time: 3-4 days a week
  - Sometimes: 1-2 days a week
  - Never
  
2. What is your most common mode of transportation to school?
  - Car
  - Public Transportation
  - Walk
  - Bike
  
3. Based on your answer from above, if you commute to UBC, how long is your commute on average?
  - Less than 30 minutes
  - Between 30 and 60 minutes
  - Between 60 and 90 minutes
  - More than 90 minutes
  
4. Have you heard of UBC Athletics and Recreation (UBC Rec) and their Intramural programs?
  - Yes
  - I've heard of it but I am not familiar with what they offer
  - No
  
5. How often do you currently participate in Intramural leagues run by UBC Rec?
  - 3 or more days a week
  - 1-2 days a week
  - I've participated in UBC Intramurals league in the past, but am not currently participating in one
  - I've never participated in UBC intramural leagues
  
6. If you do not participate in UBC Intramurals, what are the reasons you chose not to? Select all that apply.
  - Commute time
  - Inconvenient league schedule
  - Lack of Finances
  - Lack of Friends to Join With
  - I didn't know they existed
  - I play in an intramural/recreational league outside of UBC
  - UBC Intramurals does not have the sports/activities I am interested in
  - Other \_\_\_\_\_

**For the following questions, please provide an answer that best describes your feelings according to the following barriers to participation.**

7. The following statements regarding **social media** have influenced my decision **not to participate in** UBC Intramurals. Select all that apply.
- Seeing posts on social media from other athletic or fit individuals
  - Seeing posts on social media from your friends
  - Seeing posts on social media from UBC Athletics and Recreation and/or UBC Intramurals
  - No aspect of social media has influenced my decision not to participate in UBC Intramurals
  - Other \_\_\_\_\_
8. The following statements regarding **Body Image** have influenced my decision **not to participate in** UBC Intramurals. Select all that apply. This may include worrying about what other students think about your physical appearance, or having negative self-perceptions about your body.
- Having negative self-perceptions of your body
  - Worrying about what you look like when you play Intramurals
  - Fear of judgment from other participants based on your physical appearance
  - Fear that someone will make comments about your physical appearance when playing Intramurals
  - No aspect of body image has influenced my decision not to participate in UBC Intramurals
  - Other \_\_\_\_\_
9. The following statements regarding **self-esteem** have influenced my decision **not to participate in** UBC Intramurals. Select all that apply.
- Your perception of your ability to perform well in UBC Intramurals
  - Your perception of your ability to succeed in UBC Intramurals (e.g. win)
  - Your perception of your ability to effectively display the skills required in the sport
  - Your perception of your ability to appear confident in the skills required in the sport
  - No aspect of self-esteem has influenced my decision not to participate in UBC Intramurals
  - Other \_\_\_\_\_
10. Your **perceived fitness level** has influenced your decision **not to participate** in UBC Intramurals. This includes your perception of your current level of physical fitness.
- Strongly agree (Perceived fitness level HAS influenced my decision not to participate)
  - Agree
  - Somewhat agree
  - Somewhat disagree
  - Disagree

- o Strongly disagree (Perceived fitness level HAS NOT influenced my decision not to participate)
11. Your **past sport experience** has influenced your decision **not to participate** in UBC Intramurals? This includes your history of playing sports or being physically active.
- o Strongly agree (Past sports experience HAS influenced my decision not to participate)
  - o Agree
  - o Somewhat agree
  - o Somewhat disagree
  - o Disagree
  - o Strongly disagree (Past sports experience HAS NOT influenced my decision not to participate)
12. The following statements regarding the **accessibility of UBC Intramurals** have influenced my decision **not to participate in** UBC Intramurals. Select all that apply.
- The ease of access to buildings and facilities in which UBC Intramurals take place
  - The commute to participate in UBC Intramurals leagues
  - The types of sports leagues offered by UBC Intramurals
  - The ease of finding and navigating the UBC Intramurals website
  - The ease of registering for UBC Intramurals leagues
  - No aspect of accessibility has influenced my decision not to participate in UBC Intramurals
  - Other \_\_\_\_\_
13. The following statements regarding the **convenience of UBC Intramurals** have influenced my decision **not to participate in** UBC Intramurals. Select all that apply.
- The commute time to UBC Intramurals leagues
  - The scheduling of UBC Intramurals league games (e.g. the day and time)
  - The types of sports leagues offered by UBC Intramurals
  - The skill level and/or competition of UBC Intramurals leagues
  - No aspect of convenience has influenced my decision not to participate in UBC Intramurals
  - Other \_\_\_\_\_
14. How often do you participate in intramural/recreational sports leagues **outside of UBC**?
- o Always: 5+ days a week
  - o Most of the time: 3-4 days a week
  - o Sometimes: 1-2 days a week
  - o I do not participate in intramural/recreational sports league outside of UBC Intramurals
15. For the following statement, please select the answer that best applies to you: participating in intramural/recreational sports leagues **outside of UBC Intramurals** has influenced your decision to participate in UBC intramural leagues.

- Strongly agree
  - Agree
  - Somewhat agree
  - Somewhat disagree
  - Disagree
  - Strongly disagree
16. Select all factors that may apply in your decision to participate in intramural/recreational sports leagues **outside of UBC**:
- Convenience (eg. program scheduling)
  - Accessibility (eg. the facility is easier to access)
  - Facility Design (eg. the space is more satisfying)
  - Lack of funds (eg. UBC Intramurals is costly)
  - More options in terms of skill level/competition
  - More friends to join with
  - Other \_\_\_\_\_
17. In your experience, does UBC Athletics and Recreation **encourage** student feedback on their intramurals programs?
- Always
  - Most of the time
  - About half the time
  - Sometimes
  - Never
  - This question is not applicable to me
18. In your opinion, has UBC Intramurals incorporated student feedback into their leagues?
- Yes
  - Maybe
  - No
  - This question is not applicable to me
19. How would you rate the facilities in which UBC Intramurals takes place?
- Far exceeds expectations
  - Exceeds expectations
  - Equals expectations
  - Short of expectations
  - Far short of expectations
  - This question is not applicable to me
20. How effective is UBC Recreation's use of UBC students to promote their intramurals programs?
- Extremely effective
  - Very effective
  - Moderately effective
  - Slightly effective

- o Not effective at all
  - o This question is not applicable to me
21. What could UBC Rec incorporate to improve female participation rates in their intramural programs? Select all the recommendations that apply.
- Schedule more times that intramural leagues are run
  - Include a wider range of intramural sports
  - Include more tiers for different skill levels
  - Include more formats for intramural sports (e.g. women's only, co-ed, etc.)
  - Improve their reach and exposure for intramural programs to students on campus
  - Include more facilities on campus that can host intramural sports
  - Include larger facilities on campus that can host intramural sports
  - Include off-campus facilities that can host intramural sports
22. For the recommendations you chose in the previous question, feel free to expand on any recommendations you have for UBC Rec (open-ended response)
23. Are there any recommendations you have for UBC Rec that were not mentioned in the question above? (open-ended response)

## Appendix C Tables and Figures

Table C.1.

Are there any recommendations you have for UBC Rec that were not mentioned in the question above?	A	B	C	D	E
Make it easier to be a captain	x				
The idea of UBC Rec in general when you are not directly involved is a tight knit close athletic family so as an average player that is relatively unfit it can feel intimidating or as if it is not being advertised to me. Also, it would be helpful to have lower commitment leagues or on better days as some sports are on the weekend and as a commuter full time student it can be tough to do that when that's the only option for that sport.			x	x	
Ensuring cleanliness of the facility before games, floors in the SRC are usually very dusty and can cause injuries for individuals playing sports such as Basketball, dodgeball or volleyball					x
not super related but being clear at the time and days a specific tier and league they play at. its quite confusing to give a vague number of days/time that it could be in. some of the times it requires the need to switch tiers.	x	x			
Advertising around accessibility and inclusiveness (if that is true) of intramurals.	x		x		
If the lack of staffing is an issue, perhaps using a space and dividing it, for example running volleyball simultaneously with dodgeball, etc.					x

\*A: accessibility of information

\*B: scheduling

\*C: more opportunities

\*D: intimidation factor

\*E: facility management

*Note.* Open ended responses for recommendations to UBC Athletics and Recreation. Each answer has been categorized to a factor that was identified.

Table C.2.

For the recommendations you chose in the previous question, feel free to expand on any recommendations you have for UBC Rec:	A	B	C	D	E
It is hard to join a team if you don't already know someone who is on an intramural team. Also no one knew how to make a team when our team leader from the last semester went on exchange. Maybe marketing better when the dates are somehow or more word of mouth would excite people? Also we had to play a couple games past 6 or something; there should be a 'when to meet' type of thing for intramurals, let the players choose the best days for their sport	x	x			
Need more captains that can rally people together to participate	x				
If there was an option of 1-2 days of the week where a team may be scheduled for a particular league I believe this may increase people's motivation to participate. For example, I can no longer play with my Womens Only Basketball team because games always happen Monday nights and I have a 3 hour evening lecture. If this league happened on both the Monday and another day of the week, there would be more opportunity for individuals like me to participate.			x		
More education about how to sign up that is readily available in first year! Also maybe a referral program for people who have never played before.	x	x			
Perhaps having a special intramural event for girls only			x		
In my experience I've just been hesitant to join because I don't know about intramural and since I don't have much friends interested in sports or athletics, I have always looked toward individual activities (like gym memberships and classes) instead of looking toward joining a team. I guess being a part of intramural wasn't really on my mind beforehand.	x			x	
Schedule during daylight hours so women don't have to walk home at night		x			
Times that are not late at night.		x			
The scheduling is a major issue as schedules are not released before signing up and frequently changed during the league.	x	x			
Could include participation in tournaments with a women's bracket (i.e. Storm the Wall).			x		
I think having these recommendations would make it more convenient for students to participate in intramurals. As a student who does not participate in sports, I find it intimidating.				x	
An all female just for fun league would literally make me join			x	x	

*Note.* Open ended responses expanding on recommendations to UBC Athletics and Recreation. Answer legend replicates Table C.1.



Hi Everyone!

As part of my KIN 464 Health Promotion project, we are looking to identify barriers to women's participation in UBC Intramurals.

You will be entered to win two \$25 UBC gift cards and two yoga mats if you fill out the survey!

The survey is open to students who identify as a female.

Thanks!

[https://ubc.ca1.qualtrics.com/jfe/form/SV\\_3eHwgaYrzqZUWc5?fbclid=IwAR3dujHOai5h9Oa97iz6OyCRPEQI2WHxR4SxA6JvP07sBOAM1VEZb5rLCSk](https://ubc.ca1.qualtrics.com/jfe/form/SV_3eHwgaYrzqZUWc5?fbclid=IwAR3dujHOai5h9Oa97iz6OyCRPEQI2WHxR4SxA6JvP07sBOAM1VEZb5rLCSk)

UBC.CA1.QUALTRICS.COM



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Figure C.1. Facebook recruitment post with survey details

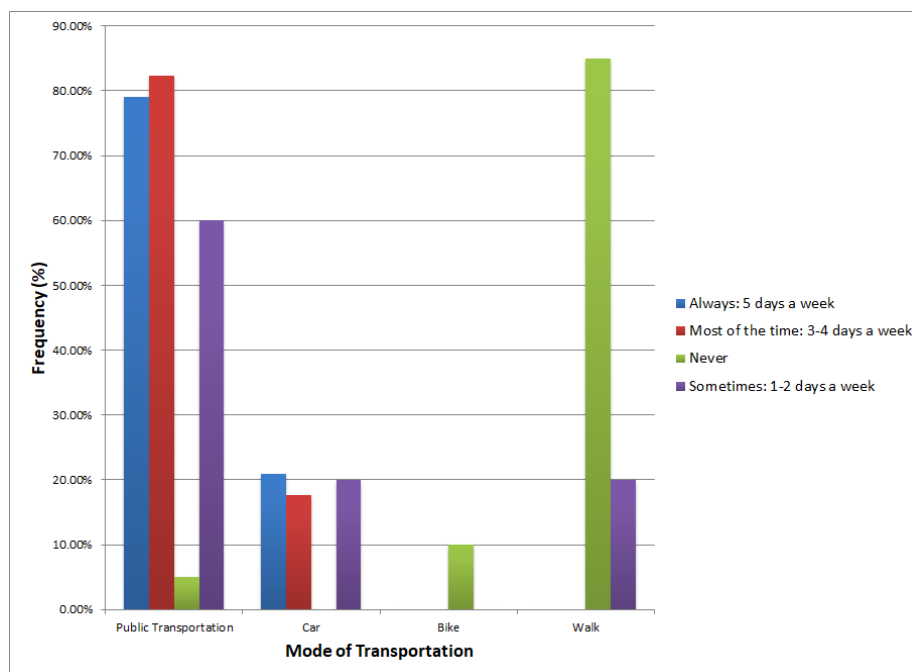


Figure C.2. Mode of transportation compared to number of commute days.

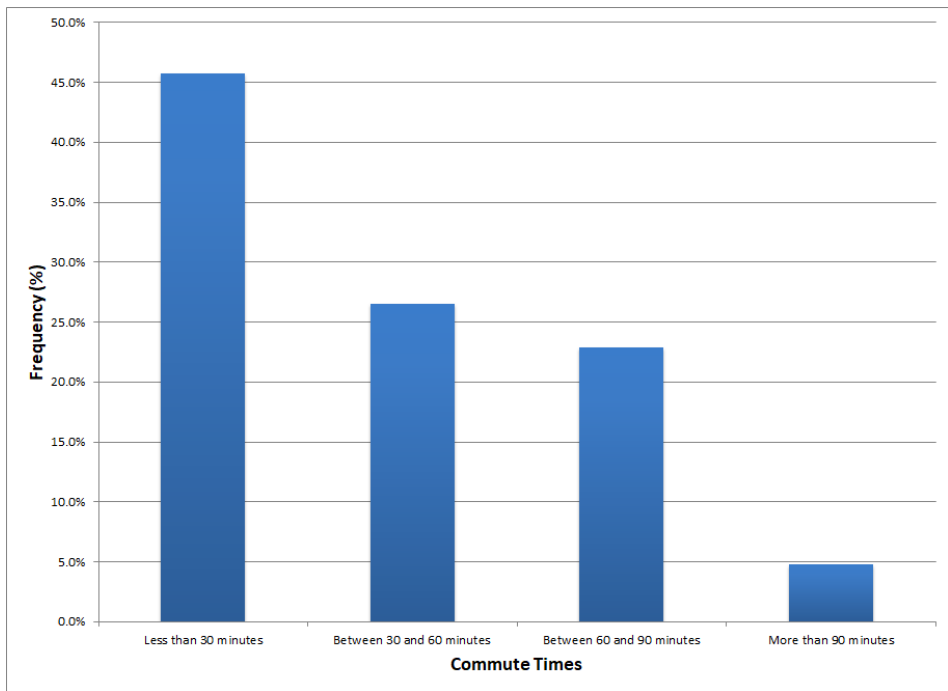


Figure C.3. Frequency table for respondent’s average commute times

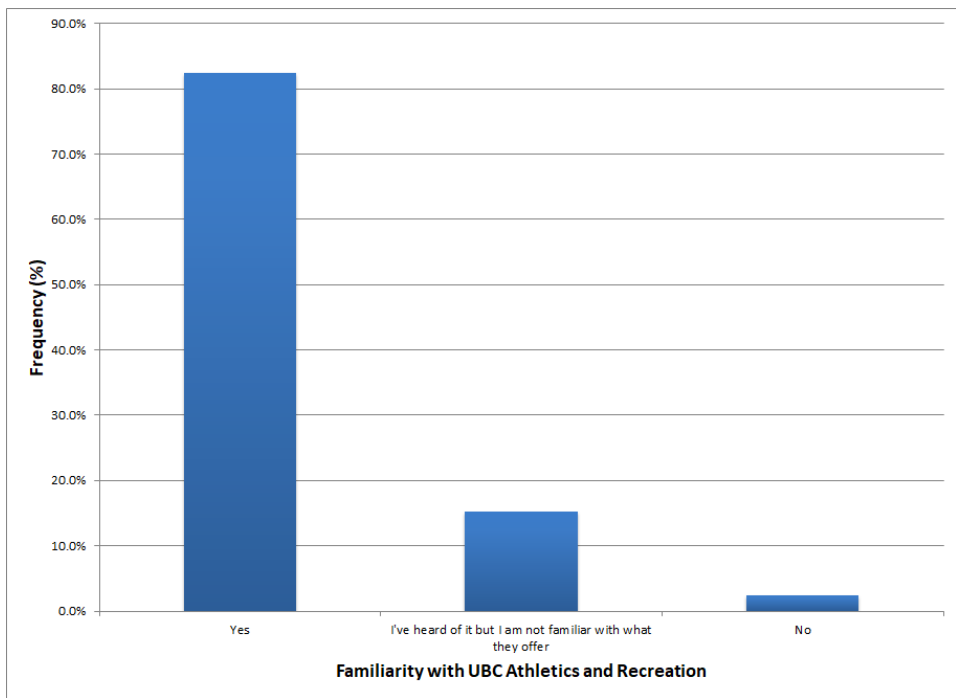
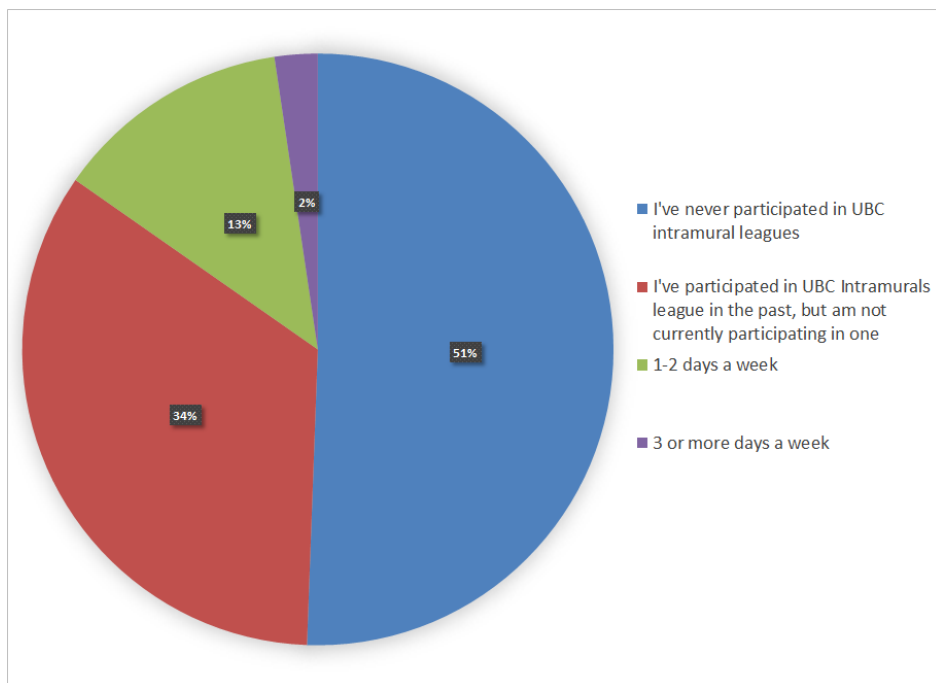
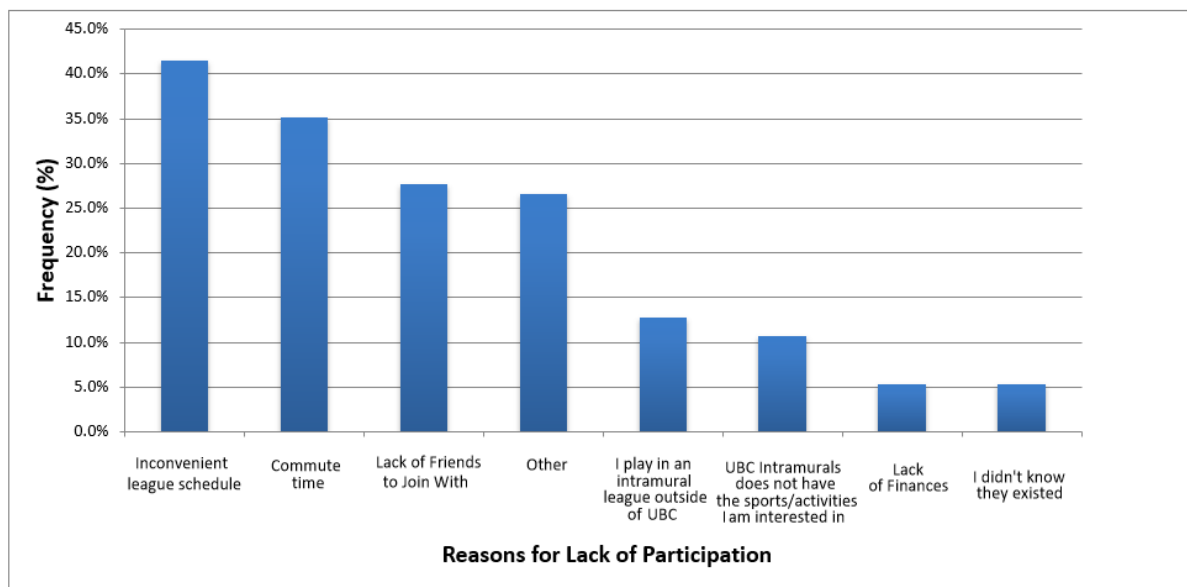


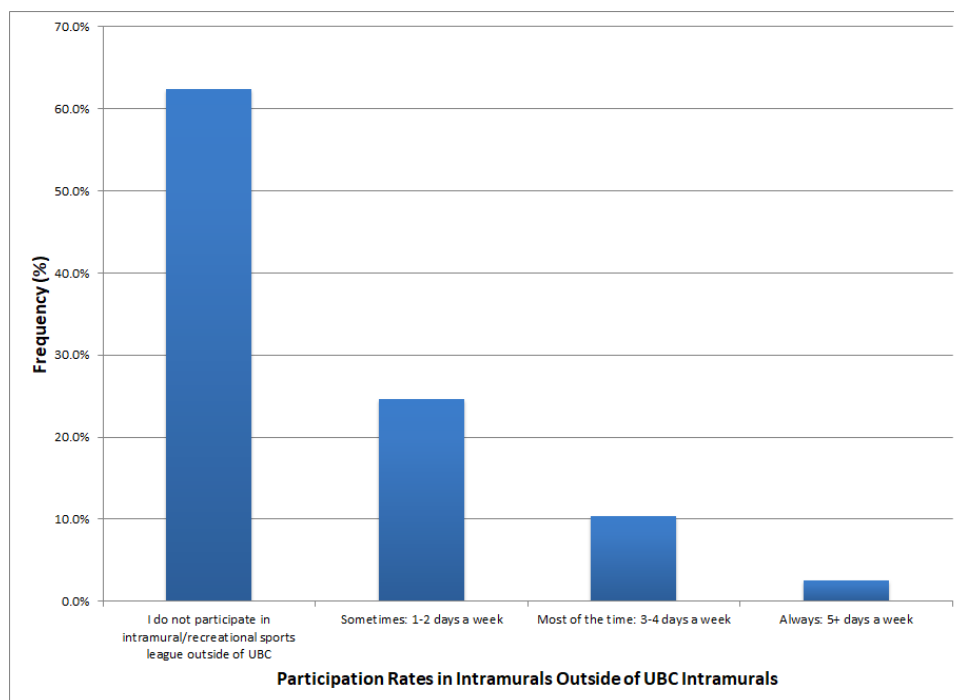
Figure C.4. Frequency Table Showing Familiarity with UBC Athletics and Recreation. Participants were asked if they have heard of UBC Athletics and Recreation and their Intramural programs.



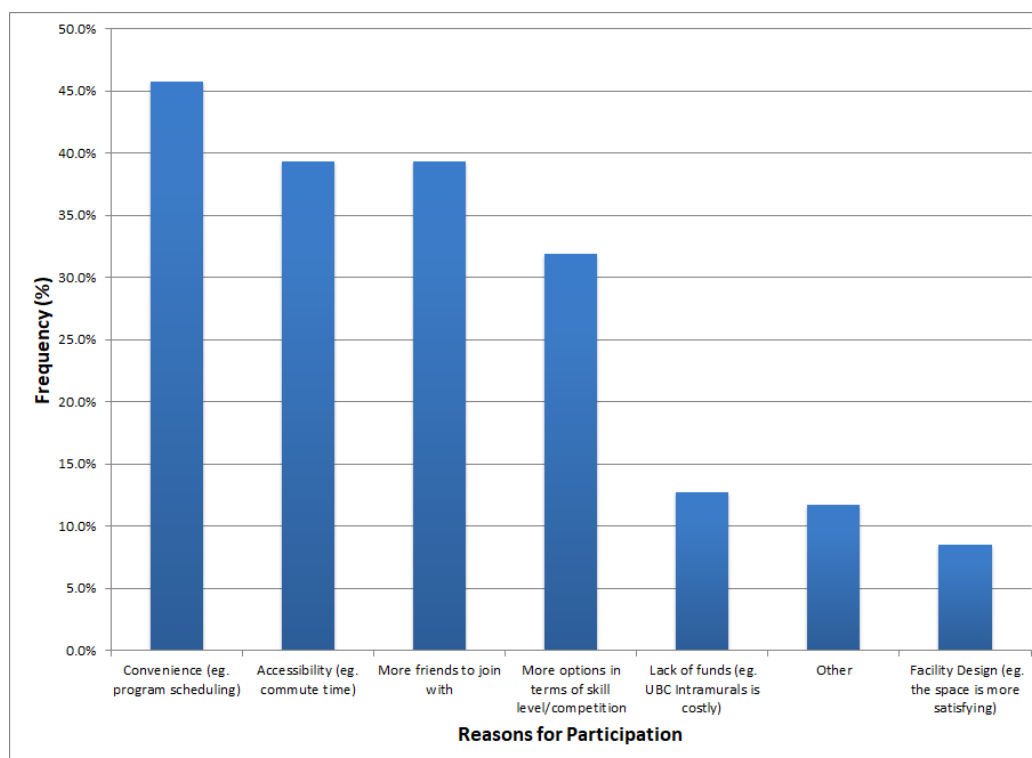
*Figure C.5.* UBC Intramural participation rates. Participants were asked how often they currently participated in Intramural leagues run by UBC Rec.



*Figure C.6.* Factors for lack of participating in UBC Intramural leagues. Participants were asked to select all factors that applied towards not participating in UBC Intramural leagues.



*Figure C.7.* Frequency table of participation rates in intramural leagues outside of UBC Intramurals.



*Figure C.8.* Reasons for participating in intramural leagues outside of UBC. Participants were asked to select all factors that applied.

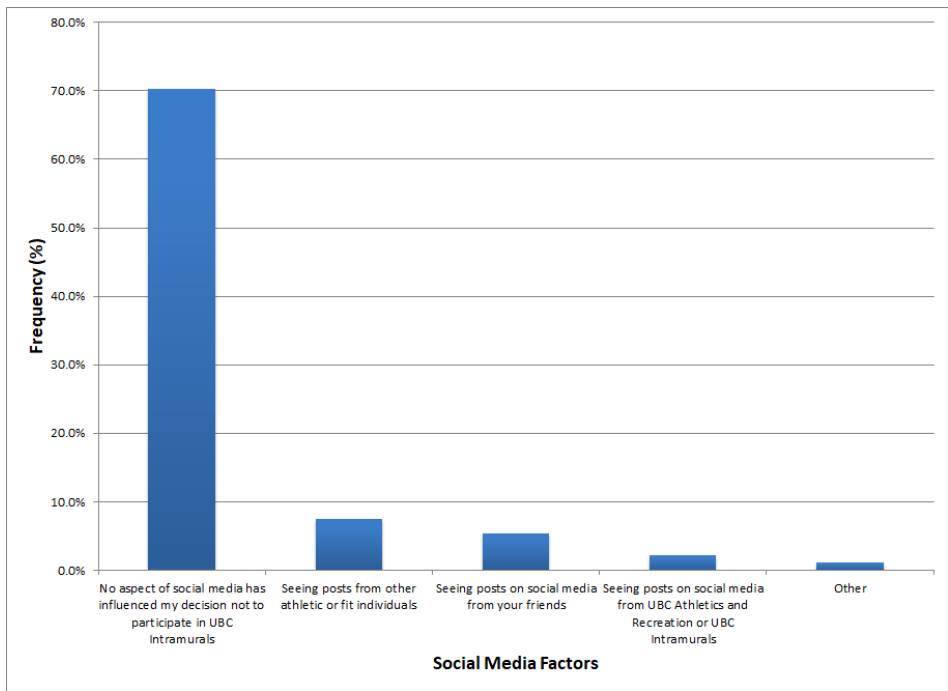


Figure C.9. Social media factors. Participants were asked to select all factors regarding social media that influenced their decision not to participate in UBC Intramurals.

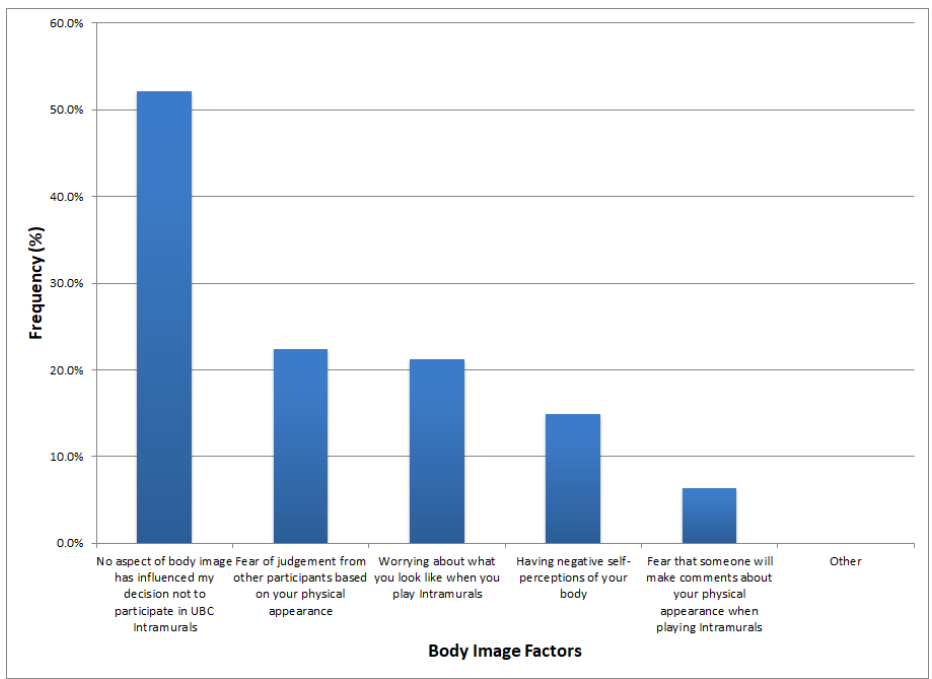
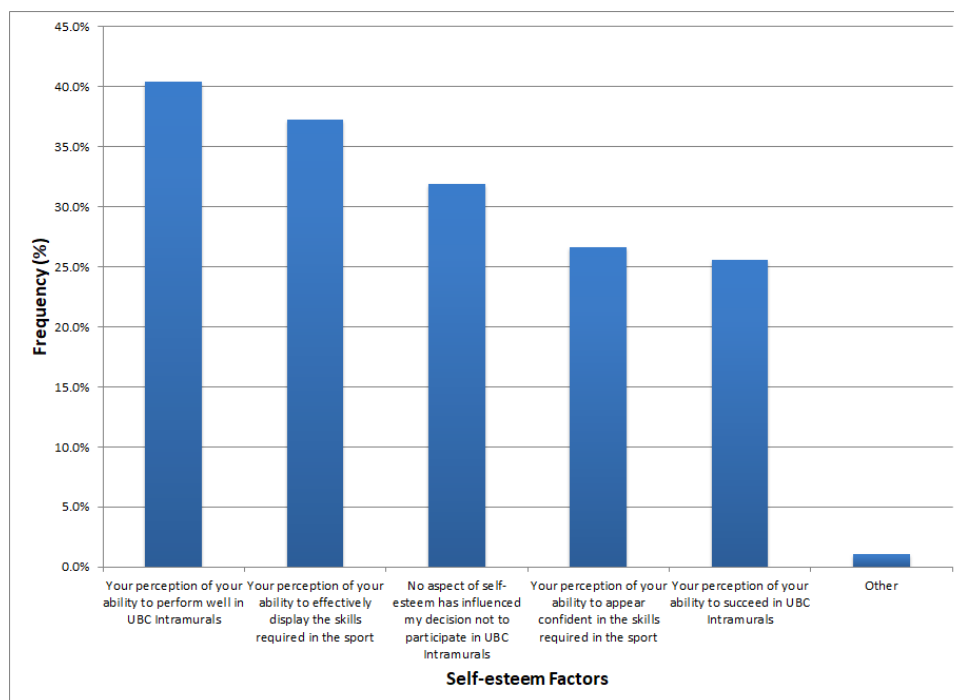
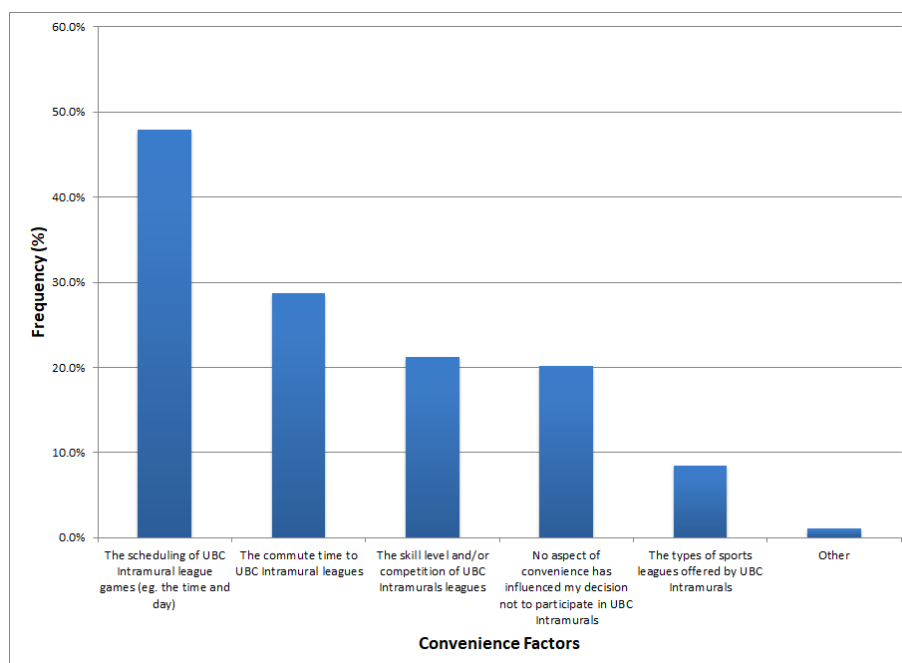


Figure C.10. Body image factors. Participants were asked to select all factors regarding body image that influenced their decision not to participate in UBC Intramurals.



*Figure C.11.* Self-esteem factors. Participants were asked to select all factors regarding self-esteem that influenced their decision not to participate in UBC Intramurals.



*Figure C.12.* Convenience factors. Participants were asked to select all factors regarding convenience that influenced their decision not to participate in UBC Intramurals.

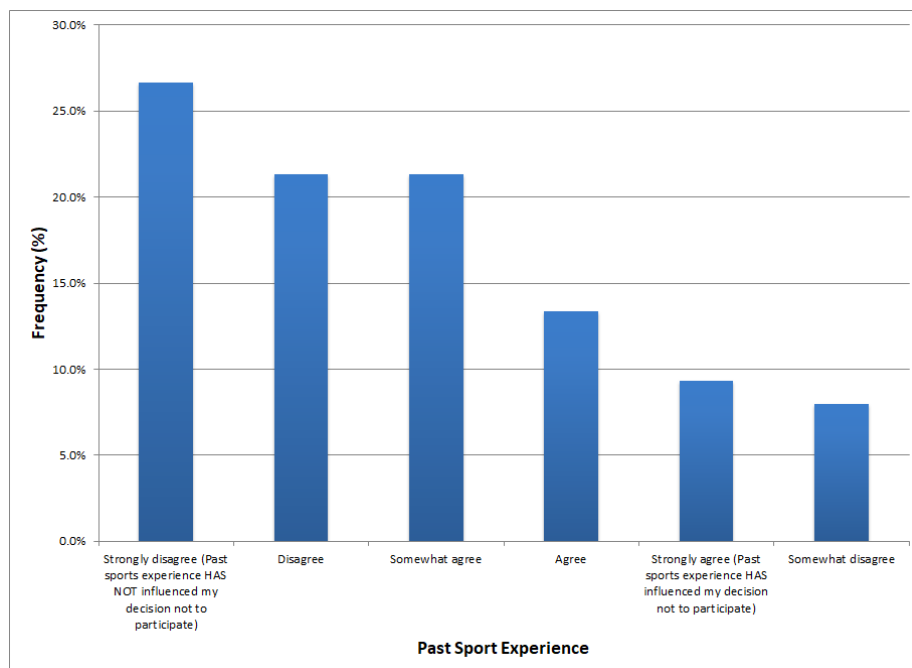


Figure C.13. Past sports experience. Participants were asked to provide an answer that best describes their feelings with the statement: Your perceived fitness level has influenced their decision not to participate in UBC Intramurals.

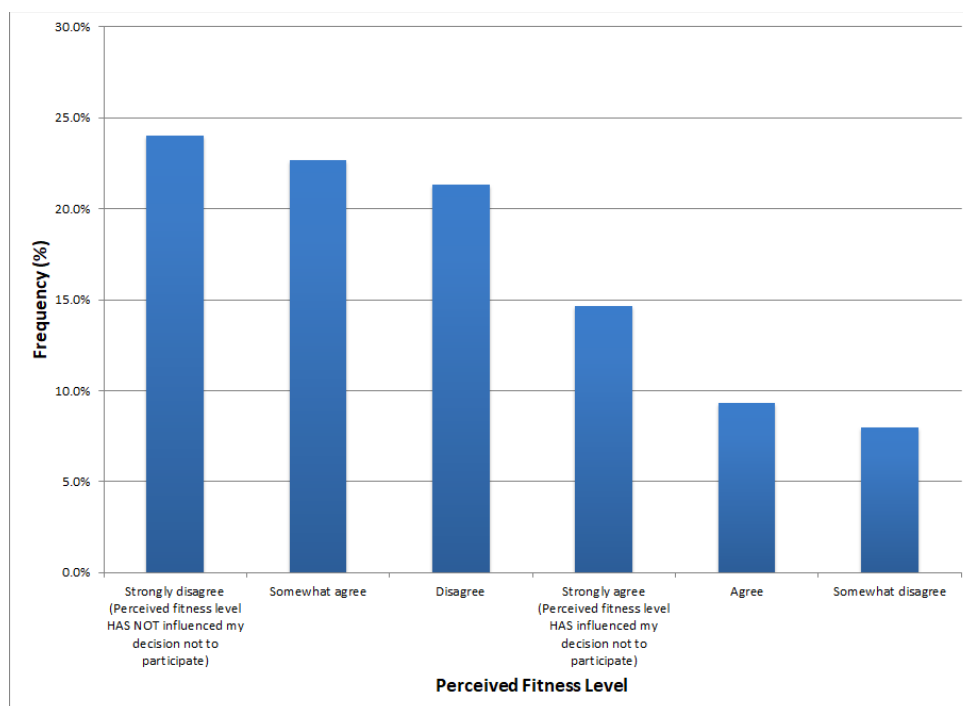
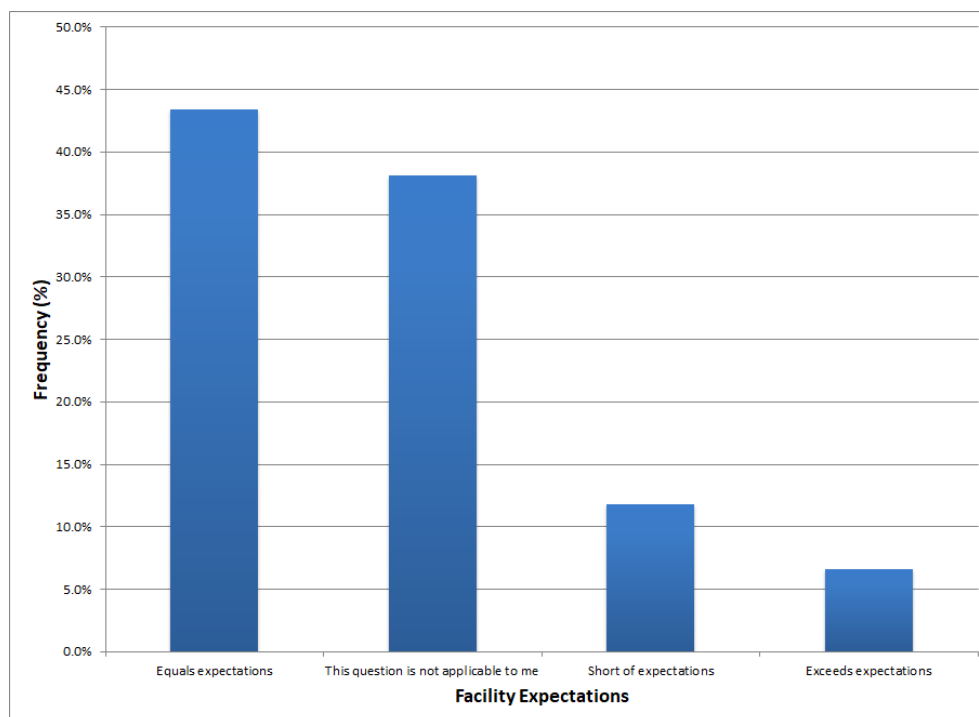
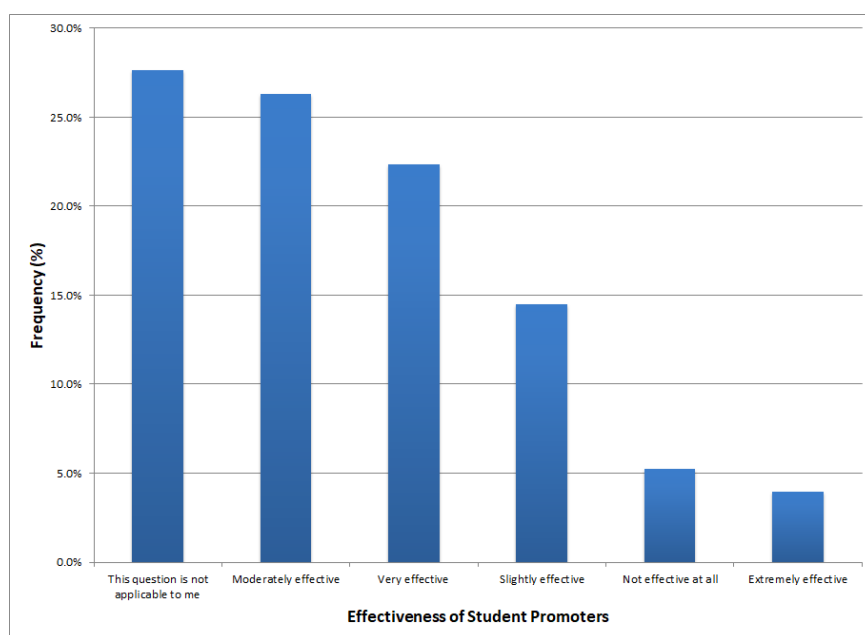


Figure C.14. Perceived fitness level. Participants were asked to provide an answer that best describes their feelings with the statement: Your perceived fitness level has influenced their decision not to participate in UBC Intramurals.

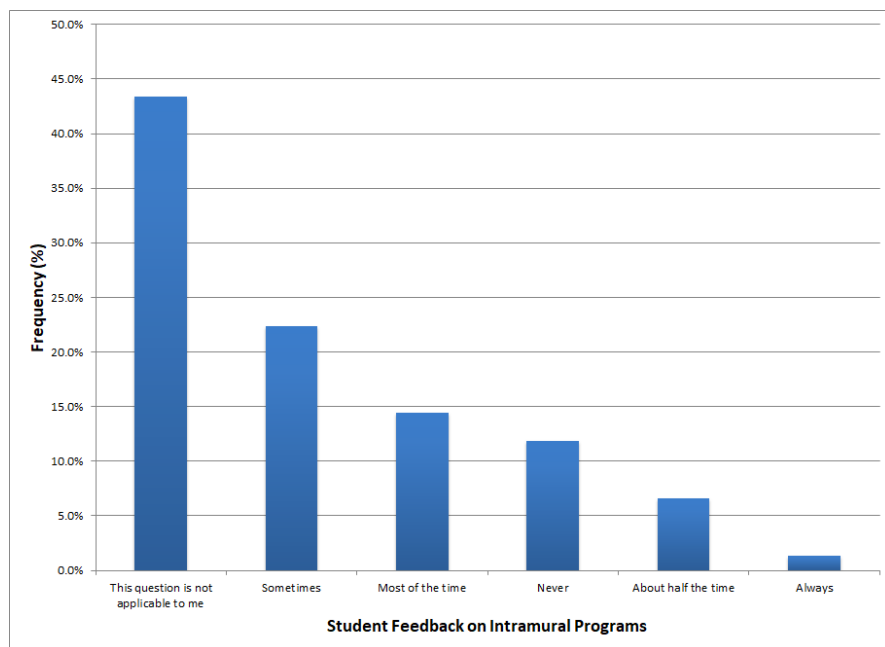


*Figure C.15.* Facility expectations. Participants were asked to rate the facilities in which UBC Intramurals takes place.

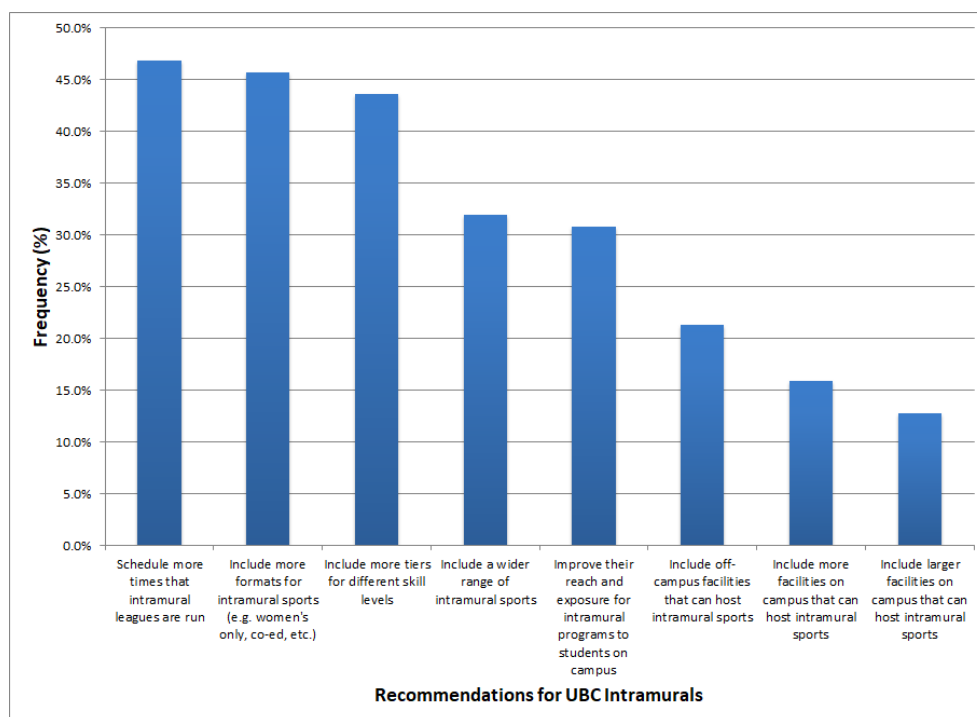


*Figure C.16.* Effectiveness of student promoters. Participants were asked to rate whether UBC Recreation's use of UBC students to promote their Intramural programs were effective.





*Figure C.17.* Student feedback on intramural programs. Participants were asked whether UBC Intramural encouraged student feedback in their intramural leagues.



*Figure C.18.* Recommendations for UBC Intramurals. Participants were asked to select all recommendations they believed would improve female participation rates in intramural programs.