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# Assessing values and attitudes of university students regarding online fitness classes and social connection

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KIN 464  
WITH DR. ANDREA BUNDON

**ASSESSING VALUES AND ATTITUDES OF  
UNIVERSITY STUDENTS REGARDING  
ONLINE FITNESS  
CLASSES AND SOCIAL  
CONNECTION**

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## Executive Summary

This research project examines the current levels of social connection experienced by online fitness class participants with the goal of recommending potential ways to improve social connection in virtual UBC Recreation (Rec) fitness programming. There is little literature available regarding online fitness classes in university-aged populations, and few studies have addressed how social connection can be promoted in online fitness classes.

Therefore, this study aimed to understand how social connection can be fostered in a virtual fitness setting. In this study, we assessed the following three research questions:

1. Do university students value social connection during online fitness programming?
2. What do university students value in their current online fitness classes?
3. What future recommendations do university students believe will increase their social connection during online fitness programming?

A cross-sectional survey consisting of both open and close-ended questions was administered through *Qualtrics*. Survey questions were aimed at capturing participants' current attitudes regarding social connection in online fitness programming, and their preferences regarding several recommendations of how this may be improved.

The target population and inclusion criteria were UBC undergraduate students over the age of 18, who have participated in online fitness programming in the past 12 months. Fifty-one participants' responses were collected, analyzed and contributed to the final data set.

Based on these participants' responses, several key findings were generated. A majority of individuals who completed the survey believed that social connection is important during virtual fitness classes, although very few that they currently felt a sense of social connection with other participants and instructors. Individuals that engaged in live virtual programming had stronger feelings of social connection than those who only completed pre-recorded programming. While most respondents participated in pre-recorded classes, the preferred format was a mix of both live and pre-recorded classes. Furthermore, many survey respondents alluded to feeling disconnected from other participants and having a lack of motivation to complete workouts. Finally, a majority of participants were interested in completing fitness-related challenges and entering competitions, believing that this would improve their feelings of social connection in virtual fitness classes.

These results led to three recommendations being put forward to be considered in order to increase feelings of social connection between participants in a virtual setting. Firstly, as a long-term recommendation, UBC Rec should start providing live virtual classes to increase social connection by allowing a setting for individuals to connect with others in classes, and with the instructor. Related to this recommendation, a second consideration would be to allow for time prior to, or after these live sessions, for participants to socialize and meet other individuals in their fitness classes. Additionally, group chats and social media groups could be created so communication can continue outside of fitness programming. A final, short-term recommendation is for UBC Rec to create challenges and competitions with interactive leaderboards to improve social connection, motivation, and provide an incentive to participate.

By implementing these recommendations, based on the survey results, it is believed that social connection in UBC Rec's online fitness classes would be increased in the university-aged population.

## Introduction and Literature Review

While the mental and physical benefits of exercise are widely known, only 45% of undergraduate students and 37% of graduate students at the University of British Columbia's (UBC) Vancouver campus reported reaching the recommended physical activity guidelines in the 2019/2020 academic year (The University of British Columbia, n.d.). Participation in recreational sport has been found to be a key determinant of satisfaction and success at university (National Intramural-Recreational Sports Association, 2004). UBC has emphasized the importance of health and wellness with the launch of its *Wellbeing Strategic Framework* in 2019. The goals include improving the recreation facilities and programs by 2025, getting 1000+ community members to participate in the *Move UBC* program, and fostering a more community-based and inclusive social environment (The University of British Columbia, n.d.). UBC's Athletics and Recreation (A&R) department provides programming to the community to increase participation in sport and recreation and create connections (UBC Athletics & Recreation, n.d.). In Winter 2020, UBC A&R offered 109 classes weekly, with registration-based and membership-based classes, including dance, martial arts, boot camps, yoga and spin classes (UBC Athletics & Recreation, n.d.). It has seen an increase in student participation from 23,186 students in 2013/2014 to over 25,000 in 2019/2020 (UBC Athletics & Recreation, 2014; UBC Athletics and Recreation, 2020). Since the start of the novel Coronavirus pandemic (COVID-19), these participation figures have significantly dropped, thus providing opportunity to explore the effects of altered recreation programming (UBC Athletics and Recreation, 2020).

The effects of COVID-19 have altered the university experience for all UBC students, including their ability to participate in recreational activities. Unsurprisingly, this has resulted in mental and physical health challenges for many (Szkody et al., 2020). Studies have reported that

as a result of decreased direct connection and in-person contact, feelings of loneliness and isolation have climbed (Labrague et al., 2021; Szkody et al., 2020).

Social connection can be defined as the meaningful relationships an individual has with others (Seppala et al., 2013). Szkody et al. (2020) researched the relationship between social connection and distress on both physical and mental health. In their research, it was found that social support acts as a stress-buffer that is positively correlated with psychological health (Szkody et al., 2020). More importantly, not only did their research show this positive correlation, but in addition, perceived support had the same effect (Szkody et al., 2020). Similar to this study, Labrague et al. (2021) analyzed loneliness among college students over the course of the pandemic thus far, and they too found that social support was protective against stress. Perceptions and feelings of loneliness had a strong relationship with adverse factors that increased risk of psychological distress, while increased support was linked to lower emotional loneliness in students (Labrague et al., 2021). Together, these studies demonstrate the importance of social support and connection on physical and mental health, especially in university students (Labrague et al., 2021; Szkody et al., 2020).

Taking into consideration the importance of social connection, it is imperative to acknowledge how recent social changes due to the pandemic have affected social connection during physical activity. During the pandemic, many social spaces where people used to connect in person have been temporarily closed in an attempt to reduce the spread of COVID-19, in accordance with British Columbia's health restrictions (Government of British Columbia, 2021). Places like gyms, arenas, clubs, and recreation centers are extremely limited in their availability and capacity (Government of British Columbia, 2021). These changes have greatly limited people's social interactions, and participation in physical activity more specifically. As many

fitness classes have been moved online with the intention to allow individuals to safely complete their workouts from home, the sense of social connection between participants has changed as they are no longer able to share a physical space.

Further expanding on the changes in the physical activity sector since the start of the pandemic is the adjustment to the way physical activity occurs, and how this change impacts social connection. In an article published in 2020 by Nyenhuis et al., the authors discuss how the approach to physical activity has been modified since the start of the pandemic. Particularly, the authors list various examples of interactive fitness apps and equipment that can be used at home, such as Peloton, iFit, and Zwift (Nyenhuis et al., 2020). These apps benefit users by providing the ability to track personalized health data and utilize this information in a way that encourages users to continue their exercise regime (Nyenhuis et al., 2020). Additionally, it is discussed that one of the important aspects of these technologies is that they allow exercisers to create a type of social connection with other users (Nyenhuis et al., 2020). This virtual community can help socially motivate participants towards achieving their fitness goals (Nyenhuis et al., 2020). Walmlink et al. (2014) found that individuals exercising in a group or with a partner tended to continue exercising for longer lengths of time than individuals exercising alone. This shows the beneficial effect that groups can have on motivation, thus exemplifying the importance of social support during exercise. These studies illustrate that social connection during exercise is correlated to higher levels of motivation and adherence to exercise routines (Nyenhuis et al., 2020; Walmlink et al., 2014).

For UBC to reach their goals of building community and getting more students physically active, creating environments online which foster social connection is important. Studies have found a positive relationship between the level of social connection experienced by a group

taking part in exercise classes and their satisfaction and adherence to exercise regimes (Carter & Alexander, 2020; Maher et al., 2015). Carter & Alexander (2020), found that belonging to a fitness community where participants also take part in activities together outside of the physical activity setting was more likely to have increased group and task cohesion. Group cohesion is what brings a group together, whereas task cohesion is centred around a group working together to achieve a common goal, such as lose weight or get stronger (Carter & Alexander, 2020; Maher et al., 2015). Maher et al. (2015) found a positive correlation between intrinsic satisfaction and group cohesion, suggesting that individuals who have developed a relationship with the other individuals in their class are more likely to be satisfied with their workout experience in addition to having increased social connection.

Even though there is a considerable literature gap regarding social connection and online fitness programming, there have been studies assessing social connection using social media such as Facebook (Ellison et al., 2007). Ellison et al. (2007) found that social connection can be fostered online on Facebook in student populations. This previous research that indicated the possibility for young people (i.e., student populations) to feel a sense of social connection through online platforms such as social media (Ellison et al., 2007) can be used in conjunction with studies such as Carter & Alexander (2020) and Maher et al. (2015) in order to hypothesize that it is possible for social connection to be formed in places such as online fitness programming.

In the midst of a pandemic, both the physical benefits of adherence to a fitness program and the social connection promoted by group cohesion is important now more than ever. The purpose of this study was to use a survey to assess the values and attitudes of university students regarding online fitness classes and social connection in order to come up with suitable evidence-

based recommendations to increase social connection in UBC's A&R online fitness programs. The target population for this study was UBC undergraduate students that have engaged in online fitness programming. This study was guided by the following three research questions:

1. Do university students value social connection during online fitness programming?
2. What do university students value in their current online fitness classes?
3. What future recommendations do university students believe will increase their social connection during online fitness programming?

## **Methods**

### *Research Design*

This cross-sectional survey collected data from the UBC undergraduate population on their perspectives of social connection during online programming. The goal of data collection was to show how social connection may be improved for the duration of the COVID-19 pandemic, and beyond, through UBC Rec's physical activity programming. More specifically, the survey gathered information about the experiences of online programming, how this relates to feelings of social connection amongst the participants, and feedback on ways to further foster social connection through online programming. The analysis focused on the extent of social connection currently experienced by participants and assessed the sense of community present between both other participants and their instructors, and how participants believe their experience of these measures could be ameliorated.

The self-reported survey was administered through the online platform, *Qualtrics*. Utilizing a survey (as opposed to interviews) allowed for a greater sample size due to the short time commitment required to respond to the questions and ease of answering straightforward questions at the convenience of the responder (Desai & Reimers, 2019). With a larger sample



size, the data reflects a more accurate representation of the UBC population, giving more insight into the perspectives and experiences of those who have participated in online physical activity programming. As a result, the data analysis and recommendations are more generalizable to the target population (Kowalski et al., 2018). Additionally, the survey format provided anonymity which further strengthened the internal validity, as questionnaire responses are more accurate when anonymity and confidentiality are assured (Singer et al., 1995).

Furthermore, at the time of administering the survey, non-essential travel was highly discouraged throughout the province of British Columbia due to the ongoing global pandemic (Government of British Columbia, 2021). The online survey allowed for safe data collection while abiding by BC's provincial health guidelines. This further increased the recruitment reach by recruiting through online channels at a time when physical recruitment was not possible. Ultimately, this provided a more accurate representation of the target population and strengthened the data collection by recruiting a larger sample size.

Lastly, the inclusion of open and closed-ended questions in the survey allowed for the collection of quantitative and qualitative data to better understand the experiences and thoughts of the participants. This allowed for the use of descriptive statistics for the quantitative data, and for more in-depth responses and understandings through qualitative data via the open-ended questions. A survey with open and closed-ended questions assists in achieving internal validity and decreasing bias when analyzing quantitative results, while still capturing participant's individual thoughts through the use of qualitative answers, therefore, increasing external validity (Kowalski et al., 2018).

### *Participants*

The target population for this study was university-aged individuals that have engaged in online fitness programming. The participants that were eligible to participate in this survey had to be 18 years or older to be able to provide their own informed consent. It was also required that they were currently taking, or had previously taken, online fitness programming within the last 12 months. This was because these participants were able to provide informed perceptions on recommendations and attitudes related to online fitness classes by drawing on their own experiences. Additionally, as the survey was hosted through an online questionnaire platform, participants needed to have internet access. Furthermore, the survey was only available in the English language as this is the language of instruction at UBC, thus participants needed to be fluent in English to partake in the survey. The sample population was narrowed to UBC undergraduate students as this is UBC Recreation's primary clientele.

In summary, participants were eligible to participate in this study if they:

- Were 18 years of age or older
- Had participated in online fitness programming in the past 12 months
- Had internet access
- Were undergraduate students at UBC at the time of completion

Participants were not eligible to participate in this study if they:

- Were unable to read and understand English
- Had not participated in online fitness programming in the last 12 months

If participants did not meet the eligibility requirements, they were immediately redirected to exit the survey. This allowed for responses only to be recorded for those who met all requirements.

### *Data Collection*

Once the project had been reviewed and cleared to be administered, the survey link and a brief explanation of the study's objectives were posted in the UBC Kinesiology Class of 2021, 2022, 2023, and 2024 Facebook groups, as many Kinesiology students participate in online fitness programming (Appendix A, Figure 1). Next, flyers with the QR code to the survey were placed in the UBC Student Life building by the ARC gym entrance, on the entrance to the Varsity gym, and on the outside of the Student Recreation Centre (see Appendix A, Figure 2). The survey link was posted on March 18th and remained open until March 27, with the goal of obtaining a minimum of 40 responses from participants meeting the inclusion criteria.

### *Survey Content*

The survey started with a question check box asking for the consent of the individual to participate in the survey, and to ensure that they met the outlined inclusion criteria (see Appendix B). The following questions used a 5-point Likert scale, in addition to open-ended question boxes to receive more detailed participant answers and opinions on the provided questions (Appendix C). In total, the survey had 25 questions; 19 of which were closed-ended questions, and 6 of which were open-ended.

The majority of survey questions were designed to be answered using a 5-point Likert scale, with the following 5 response options: 'strongly agree', 'somewhat agree', 'neither agree nor disagree', 'somewhat disagree', and 'strongly disagree'. Therefore, the survey is considered ordinal (Kowalski et al., 2018). The purpose of using close-ended survey questions was to increase ease of use by the survey respondent, with the intention of gathering more data by having lower attrition rates (Desai & Reimers, 2019). Additionally, closed-ended questions

helped to facilitate statistical analysis, and decreased the likelihood of researcher bias when analyzing survey results (Choi & Pak, 2005). Researcher biases are unintended errors that occur as a result of the expectancies and prejudices of the analyst (Wadams & Park, 2018). It is important that this bias was reduced, as it can lead to a misrepresentation of participant's lived experiences (Wadams & Park, 2018).

The close-ended survey questions aimed at evaluating the social connection between instructors and participants during current online programming, and its perceived importance to participants. As well, the survey collected data on the current perceptions of social connection and community through online fitness programming, and feelings towards possible recommendation options. Furthermore, the questions addressed the topic of how to potentially improve connection in online fitness classes, collected data on participants current attendance in online fitness classes, and whether or not they plan to attend online fitness classes going forward.

Additionally, there were open-ended questions that asked survey participants about any barriers they had experienced with the current available online programming, and for their suggestions and input on how they believe social connection could be improved (see Appendix C). It was beneficial to include these open-ended questions to allow participants the opportunity to provide more information about their opinions (Choi & Pak, 2005).

### *Qualitative and Quantitative Data Analysis*

Upon closing the survey link, data analysis included quantifying survey responses and providing visual representations of the results using JASP statistical analysis software. JASP was used to analyze the descriptive statistics of these survey results (Marsman & Wagenmakers,

2017). Additionally, qualitative descriptive analysis was used to analyze open-ended question responses. In line with the generation of concepts process, patterns were searched for in the responses from which the recommendations were based off of (Bryman & Burgess, 1994). This data was analyzed by grouping common trends across survey participants' responses to draw conclusions about potential ways to proceed with the recommendations (Bryman & Burgess, 1994). The results from the survey allowed for quantification of the participants' perceptions and attitudes of the current social environment in virtual fitness classes. From the results and analysis of the surveys, conclusions and recommendations were determined to provide information regarding the best way to move forward to increase social connection in virtual UBC Rec fitness classes specifically.

## **Results**

A total of 55 survey responses were received during the time frame. Four of these responses were omitted as they did not meet the inclusion criteria or were incomplete surveys, leaving 51 responses to be included in the study results.

### *Current Participation Methods*

In the last 12 months, 84% of respondents reported using dedicated online fitness services, 53% had participated in online workouts with their coach/existing team, 15% had participated in online programming through their gym or health club, 12% had used UBC Rec online fitness classes, and 12% used other methods (Appendix D, Table 1; Appendix E, Figure 1). Eighty-four percent reported using pre-recorded online videos, 66% had participated in virtual workout challenges, 56% used live-group classes, 9.8% had used a personal trainer, and one respondent reported to have used Zwift (Appendix D, Table 2). YouTube was by far the

most popular of services used by survey participants for online fitness programs over the past year, followed by Zoom fitness classes, Strava, and social media video calls and chats. Survey participants that had completed online UBC Rec classes participated in various types of classes, none of which were substantially favoured in these survey results. These included Run, Roll, Walk, UBC Pilates Class, and Movement Breaks.

### *Current Classes*

Eighty-eight percent reported that they were participating in online programming in order to improve their health and reach their fitness goals, 72% wanted to maintain their current fitness level, 31% wanted to learn a new skill, 17% wanted to strengthen relationships with existing friends, and 11% were looking to meet new people through online fitness programming (Appendix D, Table 3). Fifty-three percent of respondents reported experiencing barriers to participating in online fitness programming (Appendix D, Table 4). Survey participants that expressed their experience of facing barriers mainly said the greatest barrier to online exercise classes was a lack of substantial equipment to complete the workouts sufficiently, poor internet connection, lacking space at home to participate in workouts, and low motivation to exercise to full potential. Survey participants expressed that with online programming, it is easy to fit into their day and can be done on their own time. Additionally, having the freedom to work out from home or wherever is convenient was appreciated, and often referenced saving time from commute to facilities or classes. Individuals also appreciated that online programming is easily accessible, convenient, and has more varied opportunities to try exercising. Additionally, being able to re-watch, pause, rewind, and go at one's individual pace was seen as an asset. A few participants said there was an ability to be social and connect with others, while others said they appreciated that there was less pressure to perform due to the anonymity that online classes

provide. A majority of survey respondents said that they felt a lack of motivation to fully participate in online programming. Additionally, many said that there was a lack of a social aspect in online exercise programming that is present during live in-person classes, and expressed that they experienced low amounts of human connection virtually. Twenty percent of respondents reported to be very satisfied with their existing online-fitness programming, 57% were somewhat satisfied, 17% were neither satisfied nor dissatisfied, 6% were somewhat dissatisfied, and none reported being very dissatisfied (Appendix D, Table 5). Two percent of respondents reported that they always participated in online fitness classes with friends, 12% reported that they participated with friends most of the time, 27% reported that they sometimes participated with friends, 37% reported that they didn't participate in online classes with friends often, and 22% never take part in online fitness classes with friends (Appendix D, Table 6).

### *Future Classes*

Twenty-seven percent of respondents said that they would prefer to participate in live-online classes, 18% would prefer pre-recorded classes, 41% would prefer a mix of live and pre-recorded classes, and 14% had no preference (Appendix D, Table 7; Appendix E, Figure 2). Of the respondents that would prefer only live classes or a mix of live and pre-recorded classes, 67% expressed interest in taking part once a week, 19% two times a week, 7% three times a week, 7% four times a week, and none five or more times a week (Appendix D, Table 8). Of the respondents that would prefer solely pre-recorded classes or a mix of live and pre-recorded classes, 35% would prefer a recorded class to be released once a week, 30% would want two classes per week released, 30% would want three classes per week released, none would want four classes per week, and 5% would want five or more classes released each week (Appendix D, Table 9). Participants reported they would be willing to pay a minimum of \$0 and a maximum of

\$81 (Appendix D, Table 10). The mean was \$17.86, the mode was \$20 with a standard deviation of +/-15.7 (Appendix D, Table 10). Many individuals that completed the survey recommended that creating leaderboards or challenges with a competitive side would help to improve social connection during online fitness programming. As well, many respondents said that being given time to connect and interact with other participants and the instructor before or after classes would be beneficial. Scheduled live meetings were suggested to increase social connectedness between participants. Additionally, the use of social media and group chats, goal sharing, introduction posts, and breakout rooms were recommended.

#### *Values and Attitudes Regarding Current Classes*

Eight percent of respondents strongly agree that it is important to have opportunities to connect with fitness class instructors during online classes, 41% somewhat agree, 29% neither agree nor disagree, 18% somewhat disagree, and 4% strongly disagree (Appendix D, Table 11). Currently, 6% of respondents strongly agree that they currently feel a sense of connection with instructors in online programming, 27% somewhat agree, 29% neither agree nor disagree, 28% somewhat disagree, and 10% strongly disagree (Appendix D, Table 12). Six percent of respondents strongly agree that it is important to them to have an opportunity to connect with other participants during online programming, 47% somewhat agree, 16% neither agree nor disagree, 23% somewhat disagree, and 6% strongly disagree (Appendix D, Table 13; Appendix E, Figure 3). Currently, 2% of respondents strongly agree that they currently feel a sense of connection with other participants in online programming, 16% somewhat agree, 29% neither agree nor disagree, 29% somewhat disagree, and 24% strongly disagree (Appendix D, Table 14; Appendix E, Figure 4).



### *Attitudes Regarding Recommended Changes*

Forty-two percent of respondents strongly agreed that they would enjoy participating in online challenges outside of fitness classes, 32% somewhat agreed, 10% neither agree nor disagree, 8% somewhat disagreed, and 8% strongly disagreed (Appendix D, Table 15). Thirty percent of respondents strongly agreed that these challenges would increase their feeling of connection with other participants, 44% somewhat agree, 10% neither agree nor disagree, 12% somewhat disagree, and 4% strongly disagree (Appendix D, Table 16). Forty percent of participants would want to participate in online fitness challenges by themselves, 50% would want to participate with a team that they had registered with, 6% would want to participate with a randomly generated team, and 4% would want to participate in another way (Appendix D, Table 17). Twelve percent of respondents strongly agree that they would enjoy attending non-exercise-related, online meetups with other participants in online fitness classes, 39% somewhat agree, 12% neither agree nor disagree, 20% somewhat disagree, 17% strongly disagree (Appendix D, Table 18). Twenty-five percent of respondents strongly agree that they would feel more connected to other participants through these meetups, 31% somewhat agree, 20% neither agree nor disagree, 12% somewhat disagree, and 12% strongly disagree (Appendix D, Table 19).

### **Discussion**

It was expected that UBC Rec programming would be more popular, considering all respondents were UBC undergraduate students. The most popular platform for online fitness programming was YouTube videos. This is likely due to the accessibility and variety of workout types offered by YouTube, paired with the fact that the target population of this study matches the age demographics for the most frequent users of YouTube (Sokolova & Perez, 2021). Additionally, in recent years, there has been a trend on YouTube of ‘fitspiration’, where

YouTube influencers encourage others to follow their workouts, sharing exercise regimes, lifestyle tips and more (Sokolova & Perez, 2021). In a noteworthy study by Sokolova & Perez (2021), social connection was described as how the viewer builds a parasocial relationship with the influencer through repeated interactions and the speakers language choices when they communicate with them in a unilateral fashion such as referring to them or by ‘looking’ at them through the camera. These repeated interactions result in the viewer feeling as though they have developed a friendship with the video creator and results in them being more likely to continue to watch their videos. As UBC Rec currently uses a similar medium for their fitness programming of online, pre-recorded videos, a consideration for the instructors is to understand how their online presence is facilitating feelings of social connection between the viewer and instructor.

It is important to note that while the pre-recorded programming format was described as the most frequently used medium by the participants, it showed lower feelings of social connection in comparison to those who participate in live online fitness programming. As a result, live online programming should be strongly considered to facilitate a sense of social connection. Additionally, the results indicated that participants are looking for a mix of live and pre-recorded classes with new content each week. This is not surprising as variation in exercise type has been shown to increase motivation and captivation (Baz-Valle et al., 2019).

Another common theme in the results showed that respondents see value in social connection through online programming and are looking for more ways to connect. The result indicated that participants were interested in having space to connect with others before or after the programming was consistent with Carter & Alexander’s (2020) study which showed that fitness communities where participants engaged with each other outside of the classes itself were more motivated. It was also consistent with Maher et al.’s (2015) study that described how this

would increase feelings of social connection and overall satisfaction with the programming. Additionally, the results showed that there is a greater desire to maintain existing relationships through online exercise than to form new ones. 17% (9) of respondents wanted to strengthen relationships with existing friends in comparison to 11% (6) who were looking to meet new people through online fitness programming. Additionally, when asked about participating in fitness challenges, 50% of respondents reported wanting to participate with a team that they had registered with, 40% of participants would want to participate in online fitness challenges by themselves, and 6% would want to participate with a randomly generated team. Understanding that users are looking to use online programming as a tool to strengthen pre-existing relationships may be adopted into the marketing strategy of UBC Rec programming to encourage friends to sign up together, or create fitness challenges that can be done in teams to enhance social connections.

The result that participants saw online fitness challenges as a place for social connection was surprising. Upon further research, studies have corroborated this point by describing how challenges on platforms such as Strava and other digital communities “can be experienced as meaningful sites of interpersonal connection” (Couture, 2020). Social motives are significantly correlated to enjoyment of online fitness communities (Stragier et al., 2016). For example, Strava has been described as a social network for athletes and is a tool that many feel fosters a sense of connection (Couture, 2020). Furthermore, Strava offers a platform to create or join challenges with other participants. Other online platforms such as Facebook where elements of gamification and social support were also shown to increase participant step counts in this social and competitive context (Foster et al., 2010). Social gamification features including leaderboards

create a sense of relatedness through competition which has shown to create an engaging environment for recreational athletes through online fitness communities (Stragier et al., 2018).

### *Limitations*

While the study design was considered with regards to maintaining internal and external validity, there are limitations to consider to the extent of which this data can be used. To begin, as the COVID-19 situation evolves, what participants are looking for in terms of social connection through virtual fitness classes may change. Additionally, by creating a self-reported survey, it is likely that self-reporting biases were present in the answers of the respondents. Furthermore, due to the nature of a survey, participants may have not been able to provide all of their thoughts on the subject explicitly depending on the questions that were asked. Therefore, there is the potential that future research could conduct in-depth one-on-one interviews to better assess the attitudes and beliefs of online fitness participants, and receive more feedback on potential recommendations for increasing social connection in these types of settings.

Sample bias was another limitation of this study, as the recruitment methods used made it quite likely that the sample population was skewed in terms of their participation in virtual fitness classes and exercise in general. Due to the nature of the research questions, participants needed to have completed some type of online fitness class in the past 12 months, meaning it is likely that the respondents were already fairly active. Additionally, because recruitment occurred via Facebook in Kinesiology group chats, and posters were placed in various locations across campus that are frequented by athletes and gym-goers, the sample population was likely not representative of the larger UBC undergraduate student population. Finally, while the use of a survey was intended to increase the sample size of this study, the sample is still very small in comparison to the UBC population. An additional type of bias that limits the usability of this

study is that qualitative data analysis leaves room for researcher bias, as answers are interpreted and grouped based on trends that the researcher discovers.

More data on the effects of decreased social interaction during a pandemic are needed. As well, there is currently limited research available about the benefits and limitations of online fitness classes. Moreover, this study was focused on finding which mediums are best towards fostering social connection through online programming. Future research should be conducted on understanding which delivery methods of online programming will make it more successful in terms of fostering social connection amongst participants and between the participants and the instructor. This may include data on class size, programming type, the language used by the instructor and how the classes are promoted.

Overall, the pandemic has heavily impacted the ways in which individuals are able to foster a sense of connection (Okabe-Miyamoto et al., 2021). Physical activity has been highly encouraged by the Canadian government and BC health authorities for the physical and mental well-being (Government of British Columbia, 2021). In order to prevent attrition from physical activity programming, creating an engaging social experience is key (Stragier et al., 2016). The implications of this project may not only assist the community of people who already attend fitness classes online, but may provide alternate options for people in rural communities to further engage in physical activity and reap the social benefits from their own home. After the restrictions of the pandemic end, these suggestions may be retained as an effort to include these people that live in more rural areas, or individuals who continue to work from home.

## **Recommendations**

Based on the findings, there are several recommendations to be considered in an attempt to increase feelings of social connection between participants during online programming. Some

recommendations to be considered for long term implementation include creating opportunities for participants to exercise in live workout classes led virtually by an instructor, and providing opportunities for participants to converse with the instructor and other participants either before, after, or outside of these live virtual classes. In the shorter term, we recommend the creation of challenges and competitions with updated leaderboards that participants are able to view in order to increase motivation to participate in virtual classes.

*Recommendation 1: Start providing live virtual fitness classes.*

One longer-term recommendation that we believe would increase social connection in virtual UBC Rec classes would be offering live classes that participants can complete. Not only would this help to increase social connection, but it would likely improve motivation for participants to exercise by attending scheduled classes. Because of the current restrictions in place by the BC Government, in person indoor fitness classes are not allowed under any circumstances (Government of British Columbia, 2021). Therefore this provides a different option to form and maintain social connection between participants while following restrictions.

Twenty-seven percent of survey respondents said that they would prefer to participate in live virtual classes rather than pre-recorded classes, and 41% said they would prefer a mix of both live and pre-recorded virtual classes (Appendix E, Figure 5). By offering live virtual classes, it is hypothesized that attendance would increase. Additionally, many participants answered that there was a lack of a social aspect in online exercise programming in pre-recorded classes compared to live in-person fitness classes. Levels of social connection during live virtual classes would increase by having the opportunity to keep cameras and microphones on or off during the class.

One of the major concerns respondents had in terms of virtual pre-recorded programming was a lack of motivation to fully participate. Several participants in their qualitative answers referred to feeling like they are able to ‘cheat’ during pre-recorded classes, and not feeling like they were pushing themselves as hard as they normally would in a live class. By providing live virtual classes, it is hoped that participants would feel more motivated to participate to the best of their abilities.

The other reason that this recommendation is considered beneficial is because by streaming live virtual classes, these classes can then be recorded and posted on the UBC Rec website. Based on the results, participants who preferred using pre-recorded videos wanted new videos to be released between one and three times per week, thus this recommendation would also be beneficial for these individuals. To add, participants would be able to continually access classes they enjoyed, or attend classes that they were unable to attend live. These recorded classes could be categorized by type of workout, or by instructor. This would also allow students who are in different time zones to participate at their leisure. In addition, this would prove beneficial in the longer-term, as individuals who do not live on campus or commuter students can have access to classes without needing to be physically on campus. While this in itself may not increase social connection between participants, it is still seen as being beneficial by increasing inclusivity and accessibility.

*Recommendation 2: Provide time for connection before, after, and outside of live virtual fitness classes.*

Somewhat related to the prior recommendation, providing time for participants to connect with others and with the instructor would likely improve social connection. Many respondents provided the feedback that being given time to connect and interact with others either before or

after classes would be beneficial. Forty-nine percent strongly or somewhat agreed that it is important to have an opportunity to connect with fitness class instructors during online classes. Moreover, 53% of respondents agreed that it is important to have an opportunity to connect with other participants during online classes.

These requests could easily be achieved by allowing time around scheduled classes for participants to talk with others. By opening virtual rooms 15 minutes prior to fitness classes, and leaving them open for 15 minutes after the end of classes, and making participants aware of this, it would provide an opportunity to meet others and interact with their instructor on a more personal level.

One other potential way for interactions to occur between the participant, others in the class, and the instructor would be to create social media groups or group chats to allow participants to interact outside of the scheduled classes. Through these channels, an opportunity to meet new people and set individual or group goals could be easily achieved. Additionally, these groups and chats would help motivate participants. 51% of survey respondents agreed that they would enjoy attending non-exercise related online meetups with other participants in their online fitness classes, and by creating online media channels, these plans could be encouraged. 56% of respondents agreed that they would feel more connected to other participants via these virtual non-exercise related meetups. Thus, by creating opportunities for participants to connect with others before, after, and outside of class, it is likely that social connection would increase both between the participants, and with the instructor as well.



*Recommendation 3: Create challenges and competitions to increase motivation and social connection between participants.*

A final, more short-term recommendation would be creating challenges and competitions to increase motivation and social connection between participants. Many respondents who completed the open-ended question regarding recommendations for future online programming said that creating leaderboards and challenges would improve social connection by adding an element of competition. 74% of respondents agreed that they would enjoy participating in online fitness challenges, and 74% also said that these challenges would be likely to increase their feeling of social connection with other participants. Of these individuals, 40% said they would enjoy completing these online challenges by themselves, and 50% with a team that they had registered with.

Based on these results, we recommend creating online fitness challenges that individuals can choose to compete either individually or with a team. By creating challenges for each month, it would keep individuals that are a part of UBC Rec engaged and interested, while fostering a sense of social connection either with other individuals participating, or with their pre-registered team. Social gamification can be utilized to connect participants through competition in order to maintain engagement between participants and teams.

Potential challenges to consider developing could include daily/weekly/monthly step challenges, daily participation challenges, challenges regarding meeting fitness goals, and more. For example, a specific challenge could be giving individuals a goal of achieving 10,000 steps 5 days per week using their preferred form of tracking technology (i.e. via FitBit, iPhone, Apple watch, Strava, etc.) and then posting the data online in order to compare statistics with others.

Another example would be having challenges to attend a certain number of live or pre-recorded classes each week for a given month.

As an added incentive, one option could be to charge a small start-up fee for joining the program in order to pay for a prize for the winning individual or team. As seen in the results of the survey, individuals are willing to pay an average of nearly \$18 per month to participate in online fitness classes (Appendix D, Table 10). The proceeds from this start-up fee could then be incentivized to further increase motivation to participate. This would also be likely to increase the number of people interested in participating in the challenge in the first place.

By allowing individuals the option to participate in challenges, based on the survey results, it seems quite likely that individuals will be interested in participating, and believe that this would increase their social connection with other participants.

## **Conclusion**

In a time of heightened feelings of isolation, physical activity can offer an opportunity for social connection. UBC Rec is in a unique place to foster these connections by offering physical activity programming to staff, faculty and students through online mediums. Through this study, it was determined that most UBC undergraduate students are not feeling adequate levels of social connection in their online fitness programming, even though they value social connection. Enhancing feelings of connection through the delivery of their online programming through live classes, opportunities to socialize, and through challenges and competition can offer a space for participants to strengthen pre-existing connections and build new ones. This can carry forwards into post-pandemic times to offer fitness opportunities for students who do not live on campus or who prefer to engage with UBC Rec programming in an online format.

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## Appendix A

**Figure 1**

*Example of a Facebook Recruitment Post*

Hey Kinners! Have you participated in any online fitness programming in the last 12 months? If yes, fill out this quick 5min survey for a chance to win a \$25 giftcard, or the grand prize of a FitBit!  
[https://ubc.ca1.qualtrics.com/jfe/form/SV\\_08pK9sR4PTeJMF0...](https://ubc.ca1.qualtrics.com/jfe/form/SV_08pK9sR4PTeJMF0...)

Figure 2

*Recruitment Poster*

**HAVE YOU EVER WORKED OUT  
USING ONLINE FITNESS  
CLASSES?**

Fill out this quick  
5-10 minute survey for a chance to win  
**a \$25 gift card or a FitBit!**

**Want to participate?**  
Must be an 18 or older undergraduate  
student and have attended an online fitness  
class in the past 12 months

Scan this QR code to begin the survey





## Appendix B

**CLASS PROJECT: Health Promotion and Physical Activity (KIN 464)****Participant Consent Form****Assessing current values and attitudes of UBC Recreation participants regarding online fitness classes and social connection  
Group 4 - Project B****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 community members on values and attitudes related to current UBC Recreation classes and attitudes towards recommended changes in said classes to improve social connection.

**Study Procedures:**

With your permission, we are asking you to participate in a survey. You may only complete the survey once.

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 interview 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.

**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 stored on a secure electronic drive by Dr. Bundon. 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.

**You are eligible to participate in this study if you:**

- are 18 years of age or older
- are currently a UBC undergraduate student
- have participated in online fitness programming in the past 12 months

**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.

**Consent:**

Your participation in this study is entirely voluntary and you may refuse to participate or withdraw from the study at any time.

[ ] By proceeding to the survey, I am consenting to participate in this study.

## Appendix C

**Figure 1***Survey Questions*

What kind of online fitness programming have you participated in over the last 12 months? (Please select all that apply.)

- One-on-one personal training
- Live group online videos (ex. over Zoom, with a fitness club, coach-lead sessions...)
- Pre-recorded online videos (ex. Youtube videos, UBC Rec videos...)
- Virtual workout group challenges (ex. Strava or Facebook group, challenges through work or school...)
- None
- Other (please elaborate)

How did you participate in online fitness programming over the last 12 months? (Please select all that apply.)

- With my gym or health club
- With a service that exclusively does online fitness programming (ex. Peloton, YouTube)
- With UBC Recreation
- With my coach and/or team
- Other (please elaborate)

Which service did you use when you participated in an online fitness program?

Which UBC Recreation class did you participate in an online class with?

What are you looking to get out of your online-fitness classes? (Please select all that apply.)

- I want to meet new people
- I want to strengthen current relationships with other fitness participants
- I want to improve my health to reach my fitness goals
- I want to maintain my current level of fitness
- I want to learn a new skill
- Other (please elaborate)

Have you faced any barriers to participating in online programming? If so, what barriers have you faced?

- No
- Yes

What do you like about online programming?

What don't you like about online programming?

How satisfied are you with your current online programming options?

- | Very satisfied        | Somewhat satisfied    | Neither satisfied nor<br>dissatisfied | Somewhat dissatisfied | Very dissatisfied     |
|-----------------------|-----------------------|---------------------------------------|-----------------------|-----------------------|
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/>                 | <input type="radio"/> | <input type="radio"/> |

How often do you attend online programming with friends?

- | Always                | Most of the time      | Sometimes             | Not often             | Never                 |
|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

Do you prefer live-scheduled fitness classes or pre-recorded fitness classes?

- Live-scheduled classes
- Pre-recorded classes
- I have no preference
- A mix of live-scheduled and pre-recorded classes

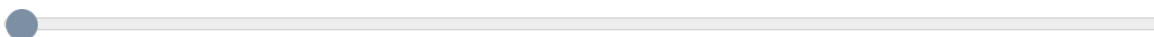
How often would you participate in live-scheduled classes?

How often would you like a new pre-recorded fitness class released?

How much are you willing to pay for an online fitness class?

0      10      20      30      40      50      60      70      80      90      100

Payments per month (in dollars)



Please indicate how much you either agree or disagree with the following statements:

For me to have an opportunity to connect with the instructor during online programming is important.

- |                       |                       |                            |                       |                       |
|-----------------------|-----------------------|----------------------------|-----------------------|-----------------------|
| Strongly agree        | Somewhat agree        | Neither agree nor disagree | Somewhat disagree     | Strongly disagree     |
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/>      | <input type="radio"/> | <input type="radio"/> |

For me to have an opportunity to connect with the other participants during online programming is important.

Strongly agree      Somewhat agree      Neither agree nor disagree      Somewhat disagree      Strongly disagree

I currently feel a sense of connection with the instructors in online fitness classes.

Strongly agree      Somewhat agree      Neither agree nor disagree      Somewhat disagree      Strongly disagree

I currently feel a sense of connection with other participants in online fitness classes.

Strongly agree      Somewhat agree      Neither agree nor disagree      Somewhat disagree      Strongly disagree

I would enjoy participating in online fitness challenges through a platform outside of exercise classes (e.g., Strava, Facebook group chat, Nike Run Club, FitBit, etc.)

Strongly agree      Somewhat agree      Neither agree nor disagree      Somewhat disagree      Strongly disagree

I would feel more connected to other participants if I were able to connect with them in online fitness challenges on a platform outside of exercise classes (e.g., Strava, Facebook group chat, Nike Run Club, FitBit, etc.)

Strongly agree      Somewhat agree      Neither agree nor disagree      Somewhat disagree      Strongly disagree

If your fitness organization hosted the above mentioned online fitness challenges, how would you prefer to participate?

- By myself
- With a team that I register with
- With a randomly generated team
- Other (please elaborate)

I would enjoy attending online meet-ups, non-exercise related, with other individuals involved in online fitness classes.

Strongly agree      Somewhat agree      Neither agree nor disagree      Somewhat disagree      Strongly disagree

I would feel more connected to other participants if I were to attend online meet-ups, non-exercise related, with other individuals involved in online fitness classes.

Strongly agree      Somewhat agree      Neither agree nor disagree      Somewhat disagree      Strongly disagree

Please list any recommendations you have for improving social connection during online fitness programming.

Do you have any other comments or feedback pertaining to your involvement in online fitness classes?

## Appendix D

**Table 1**

*Frequencies for “How did you participate in online fitness programming over the last 12 months?”*

<b>How did you participate in online fitness programming over the last 12 months? (Please select all that apply.) - Selected Choice</b>	<b>Frequency</b>	<b>Percent</b>	<b>Valid Percent</b>
Gym or Health Club	8	15.686	15.686
Online Fitness Service	43	84.313	84.313
UBC Recreation	6	11.764	11.764
Coach/ Team	27	52.942	52.942
Other	6	11.764	11.764



**Table 2**

*Frequencies for “What kind of online fitness programming have you participated in over the last 12 months? (Please select all that apply.)” - Selected Choice*

<b>What kind of online fitness programming have you participated in over the last 12 months? (Please select all that apply.)</b>	<b>Frequency</b>	<b>Percent</b>	<b>Valid Percent</b>
One-On-One Personal training	3	4.051	4.051
Live Group Online Videos	29	39.193	39.193
Pre-Recorded Online Videos	22	29.732	29.732
Virtual Workout Group Challenges	19	25.686	25.686
Other	1	1.350	1.350

**Table 3**

*Frequencies for “What are you looking to get out of your online-fitness classes? (Please select all that apply.)” - Selected Choice*

<b>What are you looking to get out of your online-fitness classes? (Please select all that apply.)</b>	<b>Frequency</b>	<b>Percent</b>	<b>Valid Percent</b>
I want to meet new people	2	3.515	3.515
I want to strengthen current relationships	6	10.536	10.536
I want to improve my health to reach my fitness goals	23	40.352	40.352
I want to maintain my current level of fitness	17	29.824	29.824
I want to learn a new skill	19	15.792	15.792

**Table 4**

*Frequencies for "Have you faced any barriers to participating in online programming?"*

<b>Have you faced any barriers to participating in online programming? If so, what barriers have you faced? - Selected Choice</b>	<b>Frequency</b>	<b>Percent</b>	<b>Valid Percent</b>	<b>Cumulative Percent</b>
No	27	52.941	52.941	52.941
Yes	24	47.059	47.059	100.000
Missing	0	0.000		
Total	51	100.000		

**Table 5**

*Frequencies for “How satisfied are you with your online programming options?”*

<b>How often do you attend online programming with friends?</b>	<b>Frequency</b>	<b>Percent</b>	<b>Valid Percent</b>
Very Satisfied	6	24.000	24.000
Somewhat Satisfied	15	60.000	60.000
Neither Satisfied nor Dissatisfied	3	12.000	12.000
Somewhat Dissatisfied	1	4.000	4.000
Very Dissatisfied	0	0.000	0.000
Missing	0	0.000	
Total	25	100.000	

**Table 6**

*Frequencies for “How often do you attend online programming with friends?”*

<b>How often do you attend online programming with friends?</b>	<b>Frequency</b>	<b>Percent</b>	<b>Valid Percent</b>	<b>Cumulative Percent</b>
Always	1	1.961	1.961	1.961
Most of the time	6	11.765	11.765	13.725
Never	11	21.569	21.569	35.294
Not often	19	37.255	37.255	72.549
Sometimes	14	27.451	27.451	100.000
Missing	0	0.000		
Total	51	100.000		

**Table 7**

*Frequencies for “Do you prefer live-scheduled fitness classes or pre-recorded fitness classes?”*

<b>Do you prefer live-scheduled fitness classes or pre-recorded fitness classes?</b>	<b>Frequency</b>	<b>Percent</b>	<b>Valid Percent</b>	<b>Cumulative Percent</b>
A mix of live-scheduled and pre-recorded classes	21	41.176	41.176	41.176
I have no preference	7	13.725	13.725	54.902
Live-scheduled classes	14	27.451	27.451	82.353
Pre-recorded classes	9	17.647	17.647	100.000
Total	51	100.000		

**Table 8**

*Frequencies for “How often would you participate in live-scheduled classes?”*

<b>How often would you participate in live-scheduled classes?</b>	<b>Frequency</b>	<b>Percent</b>	<b>Valid Percent</b>	<b>Cumulative Percent</b>
Four times a week	3	5.882	7.143	7.143
Once a week	28	54.902	66.667	73.810
Three times a week	3	5.882	7.143	80.952
Two times a week	8	15.686	19.048	100.000
Missing	9	17.647		
Total	51	100.000		

**Table 9**

*Frequencies for “How often would you like a new pre-recorded fitness class released?”*

<b>How often would you like a new pre-recorded fitness class released?</b>	<b>Frequency</b>	<b>Percent</b>	<b>Valid Percent</b>	<b>Cumulative Percent</b>
Five or more times a week	2	3.922	5.405	5.405
Once a week	13	25.490	35.135	40.541
Three times a week	11	21.569	29.730	70.270
Two times a week	11	21.569	29.730	100.000
Missing	14	27.451		
Total	51	100.000		



**Table 10**

*Monetary amount that individuals are willing to pay for online fitness classes.*

---

<b>How much are you willing to pay for an online fitness class? - Payments per month (in dollars)</b>	
<b>Valid</b>	51
<b>Missing</b>	0
<b>Mean</b>	17.686
<b>Mode</b>	20.000
<b>Std. Deviation</b>	15.726
<b>Minimum</b>	0.000
<b>Maximum</b>	81.000

---

**Table 11**

*Frequencies for “For me to have an opportunity to connect with the other participants during online programming is important.”*

<b>For me to have an opportunity to connect with the other participants during online programming is important.</b>	<b>Frequency</b>	<b>Percent</b>	<b>Valid Percent</b>	<b>Cumulative Percent</b>
Neither agree nor disagree	8	15.686	15.686	15.686
Somewhat agree	24	47.059	47.059	62.745
Somewhat disagree	12	23.529	23.529	86.275
Strongly agree	4	7.843	7.843	94.118
Strongly disagree	3	5.882	5.882	100.000
Missing	0	0.000		
Total	51	100.000		

**Table 12**

*Frequencies for “For me to have an opportunity to connect with the instructor during online programming is important.”*

<b>For me to have an opportunity to connect with the instructor during online programming is important.</b>	<b>Frequency</b>	<b>Percent</b>	<b>Valid Percent</b>	<b>Cumulative Percent</b>
Somewhat agree	21	41.176	41.176	70.588
Somewhat disagree	9	17.647	17.647	88.235
Neither agree nor disagree	15	29.412	29.412	29.412
Strongly agree	4	7.843	7.843	96.078
Strongly disagree	2	3.922	3.922	100.000
Missing	0	0.000		
Total	51	100.000		

**Table 13**

*Frequencies for “For me to have an opportunity to connect with the other participants during online programming is important.”*

<b>For me to have an opportunity to connect with the other participants during online programming is important.</b>	<b>Frequency</b>	<b>Percent</b>	<b>Valid Percent</b>	<b>Cumulative Percent</b>
Neither agree nor disagree	8	15.686	15.686	15.686
Somewhat agree	24	47.059	47.059	62.745
Somewhat disagree	12	23.529	23.529	86.275
Strongly agree	4	7.843	7.843	94.118
Strongly disagree	3	5.882	5.882	100.000
Missing	0	0.000		
Total	51	100.000		

**Table 14**

*Frequencies for “I currently feel a sense of connection with other participants in online fitness classes.”*

<b>I currently feel a sense of connection with other participants in online fitness classes.</b>	<b>Frequency</b>	<b>Percent</b>	<b>Valid Percent</b>	<b>Cumulative Percent</b>
Neither agree nor disagree	15	29.412	29.412	29.412
Somewhat agree	8	15.686	15.686	45.098
Somewhat disagree	15	29.412	29.412	74.510
Strongly agree	1	1.961	1.961	76.471
Strongly disagree	12	23.529	23.529	100.000
Missing	0	0.000		
Total	51	100.000		

**Table 15**

*Frequencies for “I would enjoy participating in online fitness challenges through a platform outside of exercise classes (e.g., Strava, Facebook group chat, Nike Run Club, FitBit, etc.)”*

<b>I would enjoy participating in online fitness challenges through a platform outside of exercise classes (e.g., Strava, Facebook group chat, Nike Run Club, FitBit, etc.)</b>	<b>Frequency</b>	<b>Percent</b>	<b>Valid Percent</b>	<b>Cumulative Percent</b>
Neither agree nor disagree	5	9.804	10.000	10.000
Somewhat agree	16	31.373	32.000	42.000
Somewhat disagree	4	7.843	8.000	50.000
Strongly agree	21	41.176	42.000	92.000
Strongly disagree	4	7.843	8.000	100.000
Missing	1	1.961		
<b>Total</b>	<b>51</b>	<b>100.000</b>		

**Table 16**

*Frequencies for “I would feel more connected to other participants if I were able to connect with them in online fitness challenges on a platform outside of exercise classes (e.g., Strava, Facebook group chat, Nike Run Club, FitBit, etc.)”*

<b>I would feel more connected to other participants if I were able to connect with them in online fitness challenges on a platform outside of exercise classes (e.g., Strava, Facebook group chat, Nike Run Club, FitBit, etc.)</b>	<b>Frequency</b>	<b>Percent</b>	<b>Valid Percent</b>	<b>Cumulative Percent</b>
Neither agree nor disagree	5	9.804	10.000	10.000
Somewhat agree	22	43.137	44.000	54.000
Somewhat disagree	6	11.765	12.000	66.000
Strongly agree	15	29.412	30.000	96.000
Strongly disagree	2	3.922	4.000	100.000
Missing	1	1.961		
<b>Total</b>	<b>51</b>	<b>100.000</b>		

**Table 17**

*Frequencies for “If your fitness organization hosted the above mentioned online fitness challenges, how would you prefer to participate?”*

<b>If your fitness organization hosted the above mentioned online fitness challenges, how would you prefer to participate? - Selected Choice</b>	<b>Frequency</b>	<b>Percent</b>	<b>Valid Percent</b>	<b>Cumulative Percent</b>
By myself	20	39.216	40.000	40.000
Other (please elaborate)	2	3.922	4.000	44.000
With a randomly generated team	3	5.882	6.000	50.000
With a team that I register with	25	49.020	50.000	100.000
Missing	1	1.961		
Total	51	100.000		



**Table 18**

*Frequencies for “I would enjoy attending online meet-ups, non-exercise related, with other individuals involved in online fitness classes.”*

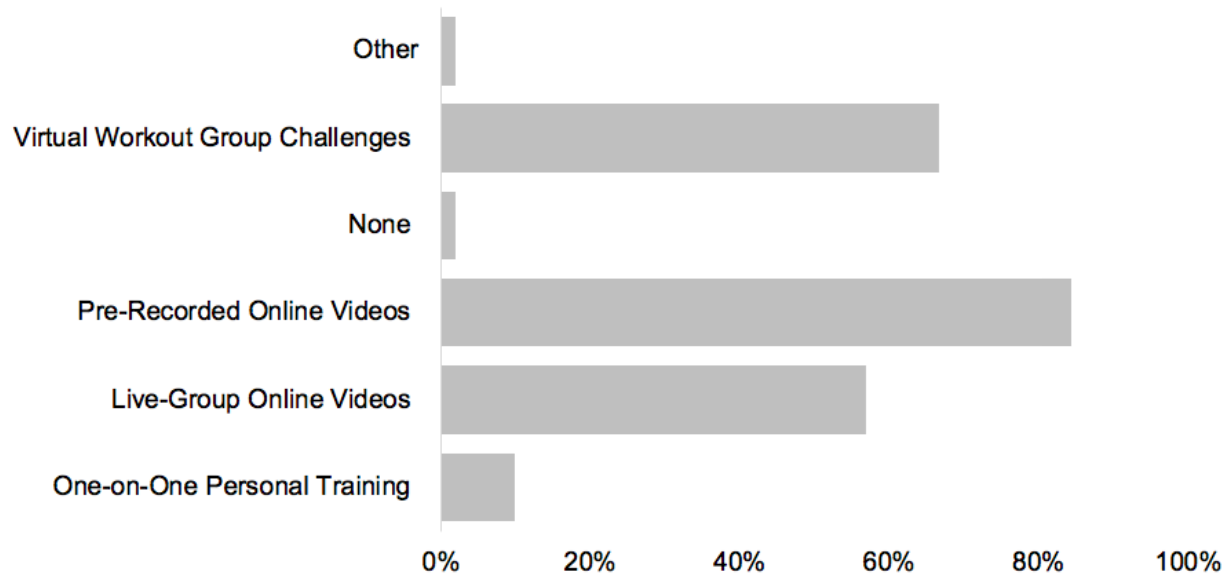
<b>I would enjoy attending online meet-ups, non-exercise related, with other individuals involved in online fitness classes.</b>	<b>Frequency</b>	<b>Percent</b>	<b>Valid Percent</b>	<b>Cumulative Percent</b>
Neither agree nor disagree	6	11.765	12.245	12.245
Somewhat agree	19	37.255	38.776	51.020
Somewhat disagree	10	19.608	20.408	71.429
Strongly agree	6	11.765	12.245	83.673
Strongly disagree	8	15.686	16.327	100.000
Missing	2	3.922		
Total	51	100.000		

**Table 19**

*Frequencies for “I would feel more connected to other participants if I were to attend online meet-ups, non-exercise related, with other individuals involved in online fitness classes.”*

<b>I would feel more connected to other participants if I were to attend online meet-ups, non-exercise related, with other individuals involved in online fitness classes.</b>	<b>Frequency</b>	<b>Percent</b>	<b>Valid Percent</b>	<b>Cumulative Percent</b>
Neither agree nor disagree	10	19.608	20.408	20.408
Somewhat agree	15	29.412	30.612	51.020
Somewhat disagree	6	11.765	12.245	63.265
Strongly agree	12	23.529	24.490	87.755
Strongly disagree	6	11.765	12.245	100.000
Missing	2	3.922		
<b>Total</b>	<b>51</b>	<b>100.000</b>		

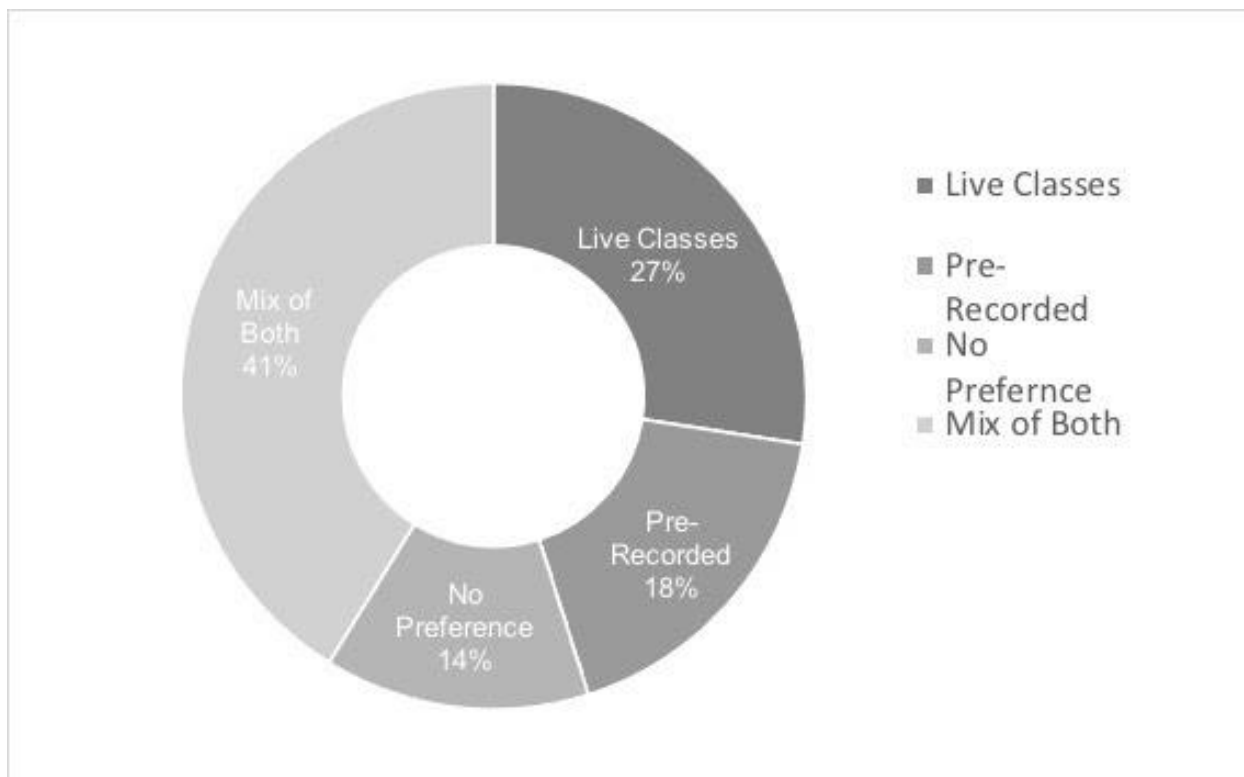
## Appendix E

**Figure 1***Type of Online Fitness Programming*

*Note.* Participants had the ability to choose multiple answers in this survey question.

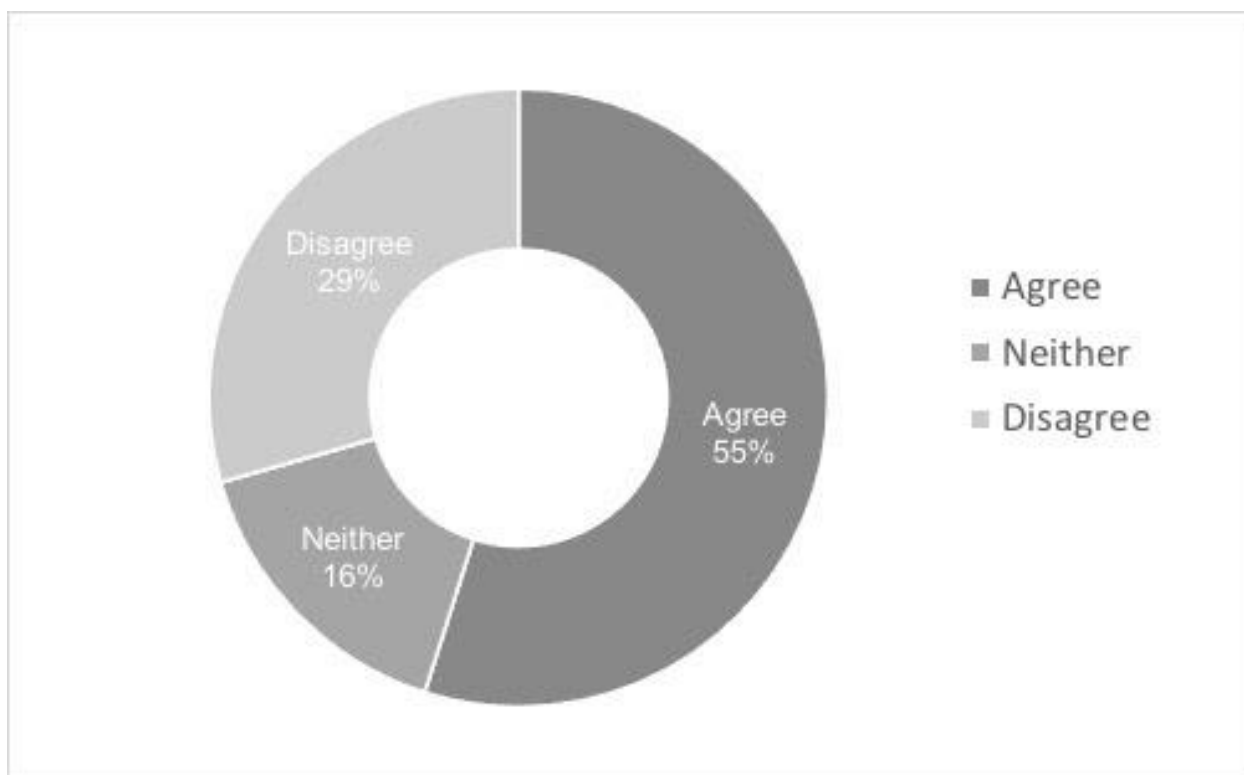
**Figure 2**

*Preferred Form of Online Class Delivery*



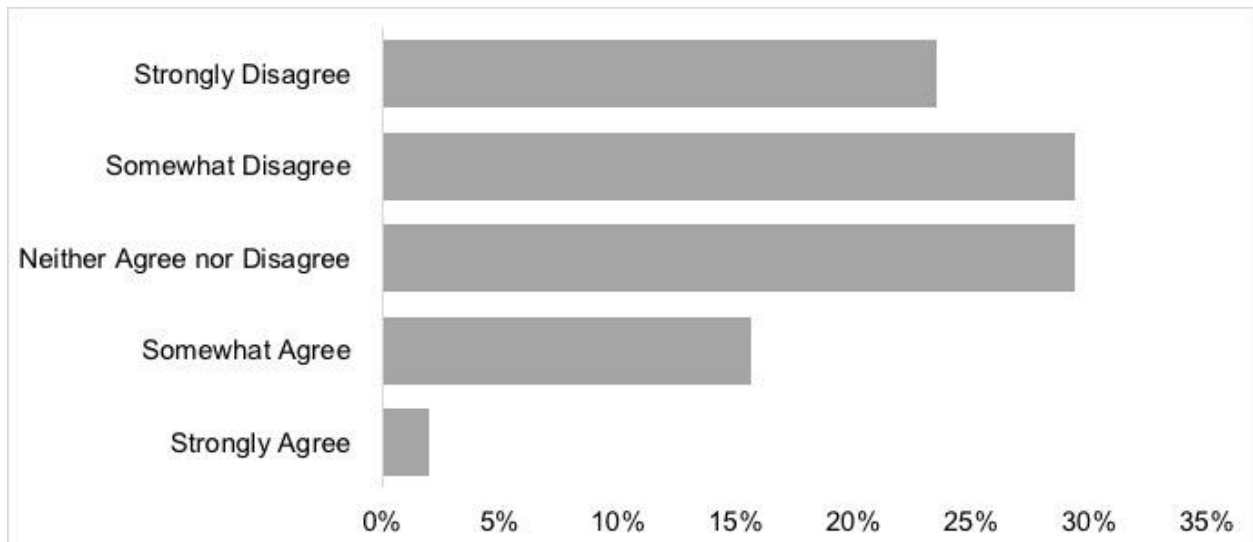
**Figure 3**

*Importance of Social Connection with Other Participants*



**Figure 4**

*Current Sense of Social Connection with Other Participants*



**Figure 5**

*Preferred Form of Online Class Delivery*

