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Identifying Barriers and Motivators to Exercise for Middle-Aged Adults at UBC

Prepared by: Christina Lee, Courtney Smith, Megan Lai, Samantha Kerr

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Identifying Barriers and Motivators to Exercise for Middle-Aged Adults at UBC

Christina Lee

Courtney Smith

Megan Lai

Samantha Kerr

University of British Columbia | School of Kinesiology

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Dr. Andrea Bundon

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Executive Summary

Chronic diseases are one of the leading causes of death worldwide (Deering et al., 2009), and many are preventable by addressing and mitigating risk factors, such as tobacco use, raised blood pressure, unhealthy diet, and physical activity (Government of Canada, 2015). However, less than 20% of adults in Canada meet the recommended amount of physical activity (Statistics Canada, 2019), suggesting a need for increased exercise programming in order to improve the health of adults. UBC has several initiatives and programs to address this prevalent issue, such as Bodyworks, an evidence-based organization that strives to enhance wellbeing and fitness (Faculty of Education School of Kinesiology, n.d.). However, this organization has largely focused on programming for older adults, with limited engagement from community members aged 40 to 60 (Bundon, 2021).

Therefore, this study aimed to engage with UBC community members 40 to 60 years of age with at least one risk factor for chronic disease, to learn about their experiences, behaviours, and perceptions of physical activity, in order to develop recommendations for future programming to be offered by BodyWorks. This study employed a mixed-methods approach by conducting a survey comprised of Likert-type, multiple-choice, and open-ended questions pertaining to demographics, motivators and barriers to exercise participation, awareness and perception of BodyWorks, and preferred exercise type and delivery.

Over the course of three weeks, researchers collected data from 44 participants between the ages of 41 and 60. The results indicate that the population's most prevalent barriers to participation are: a lack of time and a range of health concerns, such as fear of injury and limited physical abilities. However, participants also reported positive associations with exercise, enjoying exercise as a means to manage stress, increase energy levels, and socialize.

The results also suggest that BodyWorks has a mixed reputation among the sample. Some participants feel their programs and equipment are outdated and only worthwhile for seniors, while other participants had never heard of the organization, or attended any of their classes.

Furthermore, participants were asked to provide examples of fitness programs they would enjoy or participate in. The most common suggestions included condition-specific programs (where participants have similar needs and goals), classes set to music (such as dance fitness, Zumba, or yoga programs), and tiered, beginner programs (where participants can gain confidence using gym equipment and are provided the opportunity to progress to more advanced classes).

Based on these findings, 5 recommendations are suggested to BodyWorks in order to best engage with this population. 1) Partner with other UBC organizations. 2) Develop a website separate from the UBC School of Kinesiology. 3) Use social media to advertise programs and educate the public. 4) Update facility and equipment for enhanced functionality and enjoyment. 5) Develop new programming in line with participant suggestions.

Introduction and Literature Review

BodyWorks is an outreach program of the UBC School of Kinesiology. According to the Faculty of Education School of Kinesiology (n.d.), “their mission is to develop and deliver exceptional evidence-based fitness programs and services that educate and inspire to enhance wellbeing, while facilitating excellence in student leadership.” BodyWorks runs their programs at their main facility Osborne Centre, which is located on UBC Vancouver Campus, as well as at participating community centers in Vancouver. Some of their programs include the Changing Aging program and the Fit Over 50 program (Faculty of Education School of Kinesiology, n.d.). Currently, they are facing challenges in providing programming to more community members and providing more work experience opportunities for students at their Osborne facility (Bundon, 2021). Due to parking cost and the significant travel time required from many parts of the city to UBC Vancouver Campus, older adults are finding it difficult to get to Osborne Centre (Bundon, 2021). As such, the purpose of this research study is to explore ways we can engage middle-aged (40- to 60-year-old) staff, faculty, and community members who are already on UBC campus daily and who have at least one risk factor for chronic disease in BodyWorks fitness programs more effectively.

According to the Centers for Disease Control and Prevention (2021), chronic diseases are conditions that last for one or more years and require ongoing medical attention or limit activities of daily living, or both. They are the leading causes of death and disability worldwide, with physical inactivity, poor diet, and obesity being the primary risk factors (Deering et al., 2009). Physical activity is known as a preventative measure against chronic diseases such as cardiovascular disease and diabetes mellitus, two of the leading causes of death in this age group (Adámková et al., 2015; Statistics Canada, 2021). Physical activity is any bodily movement

produced by the skeletal muscles that requires energy expenditure and refers to all movement that occurs during leisure time, for transport to get to and from places, or as part of a person's work (World Health organization, 2021). Only 16% of adults aged 18 to 79 meet the recommended amount of physical activity in Canada, demonstrating a need for adult-centered fitness programming (Statistics Canada, 2019). By dedicating programming to middle-aged staff and faculty at UBC, BodyWorks can mitigate these risk factors attributed to sedentary behaviour and chronic disease (Leon-Latre et al., 2014; Hu, 2003).

A study conducted by Costello et al. (2011) analyzed the individual perceptions of physically active and inactive older adults (60-years-old and up) regarding physical activity and exercise. The purpose of their study was to develop insight into the motivators, barriers, and beliefs regarding physical activity of independent-living older adults with easy access to fitness facilities. What they found was that physically inactive people perceived themselves as physically inactive people and as such, did not participate in physical activity. Whereas people who were physically active, perceived themselves as physically active and therefore they chose to be physically active. This suggests self-efficacy and individual perceptions play a key role in older adults' choice to participate in physical activity. Self-efficacy is the belief in one's capability to execute required behaviours to produce given levels of attainment (Costello et al. 2011). Exploring this aspect of motivation and barriers to physical activity will help us better understand ways we can better engage individuals to participate in BodyWorks programming.

A study conducted by Newson and Kemps (2007) aimed to (a) identify factors that motivate or prevent older Australians (63 to 86-year-olds) from exercising, and (b) examine how they relate to intentions to exercise in the future. Their sample consisted of 217 older adults. Participants filled out a questionnaire, rating various motivators and barriers to exercise and

future intention to exercise. The questionnaire had high internal consistency and high test-retest reliability. As such, we developed our survey using their questionnaire as a framework to guide our study. Their findings suggest that health concerns were the biggest motivator as well as the biggest barrier to exercise for 63 to 86-year-olds. Intent to exercise was dependent on personal factors (Newson & Kemps, 2007). Our study will seek to determine if this is also true for 40- to 60-year-olds.

Based on the literature review, we found two gaps in the literature. Firstly, the studies included in this review only focused on addressing motivators and barriers to physical activity for populations who are 60 years old and up, with no indicated risk factors for chronic disease. Secondly, there is limited research on what actions for promoting physical activity are most effective and realistic in the workplace (Knox et al., 2017). Therefore, our research aims to determine what actions are most effective, realistic and specific to staff, faculty and community members who are 40- to 60-years-old with at least one risk factor for chronic disease on UBC Vancouver Campus only.

Methods

Purpose and Rationale

The objective of this research project was to develop an understanding of the barriers and motivators to physical activity in faculty, staff, residents, and community members of UBC who are 40 to 60 years of age, have at least one risk factor for chronic disease, and visit campus a minimum of three times per week. The data collected will be presented to BodyWorks with the ultimate goal of promoting and developing unique and evidence-based programming for new clientele upon the reopening of the organization after COVID-19 restrictions are lifted.

Based on this objective, three questions were developed to guide the research process. (1) What type of exercise programming are 40- to 60-year-olds most interested in? (2) What are some of the challenges and motivators that impede or enhance this population's ability and desire to participate in exercise programs? (3) How can exercise program participation in this population be increased?

Participants

Participants were recruited through email correspondences sent out to staff and faculty from UBC, and UBC community members and residents; refer to Appendices B through D for copies of recruitment materials. To meet the inclusion criteria participants must:

- Be between the ages of 40 and 60,
- Be on UBC campus a minimum of three days per week (prior to COVID-19), and
- Have at least one risk factor for chronic disease.

A total number of 45 individuals began the survey, and 44 consented to their responses being recorded. Their responses were considered for baseline information about demographics, health, physical activity levels, and perception of Bodyworks. However, 25 participants did not meet the inclusion criteria, leaving 20 participants in the sample for the questions pertaining to the motivators and barriers to exercise participation. Informed consent was obtained from all participants before access to the survey.

Instrument

A survey was chosen as the method of data collection, as it allowed for a larger sample size than interviews, while complying with provincial health directives due to COVID-19 (Province of British Columbia, 2021). Refer to Appendix A for the questions that participants were asked. As the research design used was a mixed-methods approach, the survey consisted of

19 questions, of which 12 were closed-ended and seven were open-ended. Similar to the questions studied by Newson and Kems (2007), the closed-ended questions were measured through a series of Likert style and multiple-choice questions, which allowed the participants to customize their responses on a predetermined scale. The open-ended questions allowed participants to identify their unique perceived barriers and motivators to exercise, as well as their preferences for exercise type, and their perception of BodyWorks.

Measures

Baseline Characteristics

Participant background characteristics were measured through open-ended and multiple-choice questions in the Demographics section of the survey. These questions addressed, among other considerations, age, gender identity, and current physical activity levels.

Perception of Partner Organization

One key consideration in this study was the participants' awareness and perceptions of Bodyworks. This was addressed through one open-ended question in the demographics section of the survey, before participants who did not have a risk factor for chronic disease or who were not on campus three days per week were excluded. This allowed for the researchers to gain a better understanding of the widespread, common reputation of BodyWorks.

Motivator and Barrier Factors

Motivators and barriers were assessed with a modified version of a survey, established by Newson and Kems (2007). These factors were measured through Likert-type questions, with five options (1 - strongly disagree, 2 - disagree, 3 - neutral, 4 - agree, and 5 - strongly agree). There were four factors explored: comfort, health and physical activity, engagement, and concern.

The Comfort Factor measured participants' comfort levels exercising with other people, alone, or in certain settings, such as a work environment. Health and Physical Activity Factor addressed the motivators and barriers as related to their energy and stress levels, health concerns, and their perceived physical outcomes of exercise. Willingness and ability to spend money, attend regularly scheduled classes, and transport themselves to the facility were measured in the Engagement Factor section of the survey. Lastly, the Concern Factor questions measured participants' perceived fear of injury and competence in using equipment in exercise class settings (Newson & Kemps, 2007).

Exercise Preferences

The final consideration of this study was the preferred type and delivery of exercise programming in the sample. Similar to the perception of BodyWorks, this was addressed in an open-ended question, where participants were asked to provide their opinions in a text-entry box.

Data Analysis

In line with the approach employed by Costello et al. (2011), descriptive statistics were used to analyze participant demographics, including age, gender, ethnicity, current activity levels, and perceptions of BodyWorks.

The Qualtrics 'Report' function was used to organize and summarize the data numerically and graphically to describe the measures of central tendency and variability. Therefore, an understanding of the comfort, health and physical activity, engagement, and concern factors that may affect exercise participation was developed.

Thematic analysis was employed for the qualitative, open-ended questions. This approach allowed researchers to identify and describe patterns, or reoccurring responses from the

participants (Braun & Clarke, 2006). The procedure included becoming familiar with the data by reading and rereading responses, as well as writing down initial ideas. Relevant information was included in initial coding (Esmaeli et al., 2013). Investigators then discussed the codes, in order to establish common themes from the entire data set: such as self-efficacy or health concerns. The data in these themes were used to develop an understanding of the specific motivators and barriers to exercise participation the types of physical activity programming participants were interested in, and to determine the most effective ways to promote BodyWorks programs to the target population.

Results

Descriptive Statistics

Demographics

Overall, the study participants consisted of 26 women and 12 men. The participants' ages ranged from 41 to 60 ($M = 51.47$, $SD = 5.47$). The predominant ethnicity that participant's self-identified as was Caucasian/White (65.79%), with the second most reported ethnicity being Asian (23.68%), followed by Indigenous (2.63%) and lastly, participants identifying as Other (7.89%). Of these participants, 15 were faculty members, 17 were staff, and five identified as community members. Over two-thirds of participants (25) reported that they do not live on the UBC campus, while the remaining live on campus (12), with the average time spent on campus (pre-COVID-19) being 4.75 days per week. Respondents were asked to identify their risk factors for chronic disease. The leading risk factors were as followed: alcohol use (11), physical inactivity (9), overweight/obesity (8), unhealthy diet (5), raised cholesterol (4), hypertension (2), raised blood glucose (2), other (2), and tobacco use (0).

Factors

Mean ratings and percentage distributions for each of the four factors are presented in Tables 1, 2, 3, and 4: Comfort Factor, Health & Physical Activity Factor, Concern Factor, and Engagement Factor.

Table 1

Comfort Factor								
Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count	Bottom 2 Box	Top 2 Box
I enjoy exercising in groups	1.00	5.00	3.80	1.25	1.56	20	20.00%	65.00%
I enjoy exercising alone	2.00	5.00	3.80	0.93	0.86	20	15.00%	75.00%
I enjoy exercising one-on-one with a trainer	1.00	5.00	3.15	1.19	1.43	20	35.00%	50.00%
I enjoy exercising alongside coworkers	1.00	4.00	2.60	1.16	1.34	20	45.00%	30.00%
I enjoy exercising at my workplace	1.00	5.00	2.80	1.29	1.66	20	45.00%	35.00%
I enjoy meeting new people	1.00	5.00	3.80	1.08	1.16	20	10.00%	65.00%

Table 2

Health & Physical Activity Factor								
Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count	Bottom 2 Box	Top 2 Box
I exercise based on the advice of a medical professional	1.00	5.00	2.60	1.20	1.44	20	45.00%	25.00%
I exercise for health concerns	2.00	5.00	4.00	0.84	0.70	20	5.00%	75.00%
I exercise to manage stress	2.00	5.00	4.05	0.92	0.85	20	10.00%	80.00%
I want to be physically fit	3.00	5.00	4.70	0.56	0.31	20	0.00%	95.00%
I enjoy exercise	1.00	5.00	4.00	1.22	1.50	20	15.00%	70.00%
Exercise gives me energy	2.00	5.00	4.30	0.90	0.81	20	10.00%	90.00%

Table 3

Engagement Factor								
Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count	Bottom 2 Box	Top 2 Box
I am willing to spend money on exercise classes	1.00	5.00	3.90	1.09	1.19	20	10.00%	70.00%
I have time to attend exercise classes	1.00	5.00	2.85	1.06	1.13	20	50.00%	35.00%
I can safely and comfortably transport myself to facilities at UBC	1.00	5.00	4.55	0.92	0.85	20	5.00%	95.00%

Table 4

Concern Factor								
Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count	Bottom 2 Box	Top 2 Box
I fear for my safety while exercising	1.00	4.00	2.00	1.00	1.00	20	70.00%	10.00%
I am afraid I will injure myself during exercise	1.00	4.00	2.60	1.28	1.64	20	50.00%	40.00%
I am afraid I will fall during exercise	1.00	3.00	1.35	0.65	0.43	20	90.00%	0.00%
I fear not knowing how to use gym equipment	1.00	4.00	2.75	1.09	1.19	20	35.00%	30.00%

Thematic Analysis

Barriers & Motivators

Time. In terms of exercise barriers, half of the participants felt they did not have time to exercise. This time barrier was due to family matters, scheduling issues, and currently working off-campus due to COVID-19. A common trend seen throughout participant's responses was that their time during the day was often utilized for work, taking children to and from school, and after-school activities.

Health Concerns. While the majority of participants said they enjoy exercising to reduce stress and manage health concerns, over half of the participants expressed their worries about injuring themselves whilst exercising. Participants recorded various health barriers to physical activity and exercise, such as joint injuries, cardiac issues, and concerns about exercising while overweight. Many participants had concerns about tearing a muscle or inducing a stress fracture, as well as worsening current injuries. In fact, 8 participants (40%) responded that they were afraid of injuring themselves during exercise. However, almost all participants desired to be physically fit and exercise to minimize impending health concerns.

Physical Activity Levels. Scores on the risk factors for chronic disease have shown that physical inactivity is the second most common risk factor, just before alcohol use. However, our results found that overall, participants were engaging in an average of 192 minutes per week of moderate-to-vigorous physical activity.

Self-Efficacy. Self-efficacy was a commonality seen throughout the responses of the participants when asked about barriers towards exercise. Specifically, participants did not feel comfortable exercising if they felt they were the “older person” in a room full of younger adults. Similarly, out of 20 participants, 6 felt that being fearful of not knowing how to correctly use gym equipment was a barrier towards participating in exercise.

Opinions of BodyWorks

Location. As for modes of transportation, the walking distance was seen as the most significant barrier towards exercising at BodyWorks by almost half of the participants. The cost of parking, however, was seen as a barrier to two participants, followed by two people who selected bike parking, and one person selected that bus fare was an issue in terms of transportation.

Relevance. A common trend throughout the comments of the participants was that the BodyWorks facility and gym equipment were dated, with limited machines (i.e., treadmills, ellipticals) available for use. Additionally, several participants wrote that they would be more inclined to use the BodyWorks facilities if there were “added amenities” such as change rooms, private showers, steam rooms, and sauna.

Geared to Older Adults. In a question regarding the participants’ opinion of the BodyWorks facility, six individuals wrote that it was catered towards creating programs for older

individuals and seniors. However, the response from participants who had heard of and tried BodyWorks (6) was positive, and that they had enjoyed their experience.

Programming Feedback

Participants were asked to provide their recommendations for different programs they would be interested to see from BodyWorks. Several of the responses included suggestions such as rhythm and music-based fitness classes such as Zumba and dance fitness, beginner and low-intensity classes, resistance and strength training classes, and condition-specific classes (i.e., classes specifically designed for individuals with joint concerns). Likewise, one participant suggested a “dark yoga” class to enhance self-confidence and self-efficacy and not feel judged by others around them. One participant suggested a tiered approach to classes, where beginners could join a group class and eventually make their way up to intermediate or advanced exercise classes. Further, participants wrote they would be interested in evening classes, as many were too busy throughout the day with family or work commitments to engage in exercise. Lastly, several participants wrote that they would be interested in areas to exercise individually to allow them to work out at their own pace.

Discussion

Barriers

The results of the survey indicated that the most common barrier to exercise participation for this age group was time. Only 35% of participants either agreed or strongly agreed that they had enough time to exercise, commenting on how lifestyle factors such as family matters and scheduling commitments took up a significant portion of their day. This corroborates previous research which has identified ‘not enough time’ to be the most common barrier to exercise participation experienced by middle-aged adults (Justine et al., 2013; Spiteri et al. 2019). Several

participants wrote that taking care of their children throughout the day (i.e., getting their children to school, picking them up, and getting them to after-school activities) made it difficult to exercise during typical working hours, such as 9 am to 5 pm. These findings suggest that time constraints of 40- to 60-year-old UBC staff, faculty, and community members may be BodyWorks' greatest challenge when attempting to recruit this population to participate in their exercise programs. Thus, BodyWorks might look into ways to address this time barrier to enhance program participation. Responses from the survey suggested that running programs in the evenings would be most convenient for this age group.

Other common barriers included health concerns or limited physical ability such as joint injuries, cardiac issues, and being overweight. Likewise, participants noted their concerns about injuring themselves during exercise. Health problems and fear about performing physical activity safely were also identified as barriers in previous studies (Melillo et al., 2001; Spiteri et al., 2019). Some respondents also mentioned feeling self-conscious working out in environments with younger or more experienced people. These barriers have been addressed in previous research by implementing strategies such as providing ability-specific and condition-specific exercise programs and increasing instructor-to-participant ratios to improve participant self-efficacy (Killingback, 2017).

Cost of exercise programs and safe transportation to facilities were not considered barriers to exercise participation for those who completed the survey. This contrasts with previous research that indicates costly parking as a barrier (Spiteri et al., 2019). However, 40% of respondents cited walking distance to facilities as a barrier to participation in exercise programming. This aligns with research conducted by Manzi et al. (2020) which suggested that facilities located in safe and walkable areas are positively associated with greater promotion of

physical activity in older adults. The new proposed BodyWorks location in the Gateway building will be located at the principal point of entry at UBC at the Northwest corner of University Boulevard and Westbrook mall (University of British Columbia, 2021). Consequently, BodyWorks will address the barrier of walkability resulting in increased participation in exercise programming for middle-aged adults.

Motivators

Survey respondents reported enjoyment of both group (65%) and individual (75%) exercise environments. Most participants (65%) also agreed that they enjoy meeting new people. These findings suggest that the opportunity for social involvement may be a motivator for participating in exercise programs for middle-aged adults. Research shows that, particularly in younger-middle-aged adults, exercising in groups and having the ability to socialize with others is considered a motivator to exercise (Spiteri et al., 2019). Furthermore, implementing social features facilitates exercise program adherence, as group dynamics add to participants' well-being by providing supportive environments (Killingback, 2017). To motivate 40- to 60-year-olds to use the BodyWorks gym facilities, BodyWorks might want to promote both group and individual fitness options to cater to the varying preferences of this age group.

The most common reasons that people engage in exercise are as follows: they want to be physically fit (95%), it provides them energy (90%), they utilize it for stress management (80%), management of health concerns (75%), and they enjoy exercise (70%). This use of exercise for preventative measures was a common response throughout the survey and is related to the evidence found in the study done by Spiteri et al. (2019), where they revealed that middle-aged adults were motivated to exercise due to fear of illness and for stress management.

Many survey respondents stated that they enjoy fitness classes set to music. The use of music has been shown to promote adherence to exercise programs in older adults as it is a source of entertainment (Killingback, 2017).

Feedback About BodyWorks

Although the majority of survey respondents had previously heard of BodyWorks (77%), many were of the impression that the programs offered are mostly geared towards older adults and seniors rather than their age group. A potential implication of this opinion of BodyWorks is that once improved middle-aged adult programming is established, it may be difficult to recruit participants until better promotion (i.e., improved social media presence, creating a more user-friendly website) is developed (Lee & Gao, 2017).

Additionally, recent evidence has revealed that through the use of social media platforms, information about physical activity opportunities within the workplace can be better communicated (Lee & Gao, 2017). This is evident in our results as 23% of participants were not aware of BodyWorks. Further, several participants who had heard of BodyWorks provided suggestions for programs that are already implemented. Similarly, 23% of our participants were not aware of BodyWorks, which means improved social media promotion may improve overall awareness.

Limitations

There were several limitations in this study to be noted. First, the researchers did not identify how participants had heard of BodyWorks. This includes marketing strategies through social media platforms, which are essential for promoting on-campus programs and increasing overall awareness (Lee & Gao, 2017). By not including how participants had heard of BodyWorks, the researchers were unable to provide recommendations on how to best target

middle aged adults through specific social media and advertising platforms. However, our findings suggest that BodyWorks should improve their marketing strategies towards middle aged adults to increase awareness of future programs targeted to their age group.

Second, when asking participants how often they engaged in moderate-to-vigorous physical activity per week, we did not specify what was meant by “moderate-to-vigorous.” The Canadian Physical Activity guidelines define moderate-to-vigorous activity as activities that cause sweating and increased breathing rate (CSEP, 2021). There is potential for participants to have been confused as to the specific details of exercise, and overestimated or underestimated the amount of moderate-to-vigorous exercise they engage in. This might be a reason as to why participants on average exceeded Canadian Physical Activity Guidelines, which contradicts Statistics Canada’s findings that only 16% of adults aged 18 to 79 meet recommended physical activity targets (Statistics Canada, 2019).

Third, data on alcohol use may be misleading as it was not defined on the survey how much alcohol use constituted a risk factor for chronic disease.

Lastly, it was challenging to recruit the specific population of 40-to 60-year-old adults who have at least one risk factor for chronic disease and are on campus for three days/week or more. Due to this small sample size, future research should try to recruit a larger population to obtain a greater variety of responses.

Recommendations

Based on the results of our study, we developed five key recommendations.

Partner with Other Organizations

Our first recommendation is to partner with other organizations on campus, such as UBC Active Kids, UBC Aquatics Centre and UBC parking. Partnerships are a great way to foster

relationships and increase a sense of community on campus while also being able to provide more to your clients with minimal cost and effort. Partnering with organizations on campus will address three barriers identified within our study. Firstly, one of the most common barriers to exercise respondents faced was lack of time due to having to take care of their children. Partnering with UBC Active Kids can be a useful way to combat this barrier. New programs that can be created from this partnership include a family-oriented exercise program where parents and kids exercise together. Or Active Kids and BodyWorks can coordinate their programs at the same time, so that the parent can do their own fitness program at the same time as their child's program. Secondly, some respondents wish they had access to equipment such as saunas or hot tubs post-workout. Partnering with UBC Aquatics Centre is a great way to facilitate this need. Finally, to address BodyWork's concerns regarding parking for their clients, we suggest developing a rebate program in affiliation with UBC parking.

Update Facility and Equipment for Functionality and Enjoyment

With the new proposed BodyWorks facility at the Gateway building, this presents BodyWorks with a great opportunity to improve the layout of their gym. Based on the results of our study, we have three suggestions to keep in mind when constructing the new facility, which will improve the appearance and functionality to meet the needs and enjoyment levels of clients and staff members. Our first suggestion is to ensure there is a dedicated reception area that is warm and welcoming. Some respondents said they felt unwelcomed when walking into the facility and felt unsure where to go to ask questions. As a result, this deterred past clients from coming back to BodyWorks. By including a reception area that is dedicated to welcoming clients and addressing their questions, potential clients may be more inclined to want to partake in BodyWorks programming. Moreover, past BodyWorks clients did not enjoy the dark space and

old equipment. As such, we suggest incorporating more windows to the new space to allow more sunlight to come in, as well as to update the gym equipment. Lastly, some respondents mentioned feeling self-conscious working out in environments with younger or more experienced people. We suggest including a dedicated personal training space, adding dividers, or finding alternative ways to split the facility into more private sections.

Develop a Website Separate from the UBC School of Kinesiology

The third recommendation is to develop a more clear, concise, and user friendly website separate from the UBC School of Kinesiology website. By making their website as an extension of the UBC School of Kinesiology website, the program appears to be used mainly for academic purposes. By having their own website, BodyWorks can eliminate this misconception, and establish themselves as an organization dedicated to providing evidence-based fitness programs for community members.

Use Social Media to Advertise Programs and Debunk Misconceptions

Our fourth recommendation is to incorporate the use of social media in BodyWork's advertising approach. A common misconception participants had was that BodyWorks only offered programs for older populations 55 years old and up. Using social media platforms can prove to be useful to debunk this misconception and allow BodyWorks to actively engage with more potential clients. To further address this misconception, we recommend adding more pictures on their website featuring younger adults or populations they want to attract. Moreover, while we received excellent suggestions from respondents for new programming, some of the suggestions we received were actually classes that BodyWorks already offered. This suggests there is a lack of available information available for potential clients. By using social media

platforms to advertise and inform people of the programs they offer, this can ensure they have all the necessary information to grab their interest and potentially sign up for a BodyWorks class.

Three New Types of Programming

Conditioned specific classes

Several respondents indicated they faced health concerns such as joint injuries, cardiac issues, and being overweight. With these health concerns came the fear that exercising could worsen their symptoms. As such we suggest offering condition specific classes. These classes would have lower impact exercises with options for modifications, and a high instructor to participant ratio. Having a high instructor to participant ratio in these types of programming will allow participants to feel that they are being properly supported and are exercising safely. One example of a conditioned specific class would be a healthy heart class designed for people with cardiac issues.

Beginner-tiered class

Some respondents were less inclined to sign up because they lacked the knowledge and skill to properly use equipment. Providing a beginner-tiered class that teaches participants how to properly use equipment could be beneficial in reducing this barrier and increasing client self-efficacy. As well as by making this class tiered, it gives the participants the opportunity to progress from a beginner to a more advanced level.

Classes with music

Our final class recommendation is to have classes with music. Several of the responses we received were that they enjoyed working out to music and would love to see programs such as Zumba, yoga, and resistance training with music offered at BodyWorks.

Considerations in Regard to Programming

As previously mentioned, the most common barrier to exercise respondents faced was lack of time due to having to take care of their children. Having to work around their children's schedules, they indicated the best time for them to participate in programming is after 4pm. Lastly, some respondents said they were interested in having some form of accountability included in the program. This could be in the form of weekly check-ins from the instructor or having an official accountability buddy in the class. Incorporating an accountability system will help participants adhere to the program better and provide more of the social aspect that many participants are interested in.

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Appendix A

Qualtrics Survey and Consent form

CLASS PROJECT: Health Promotion and Physical Activity (KIN 464)
Participant Consent Form

Identifying barriers and motivators to exercise in middle-aged adults at UBC Vancouver Campus
Group 20 Project J

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 the motivators and barriers to exercise for adults with one or more risk factors for chronic disease aged 40-60 on UBC Vancouver Campus.

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.

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

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 . 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.

☐ I consent

☐ I do not consent

When were you born? (to answer, slide to the appropriate year on the scale)

1959 1961 1963 1966 1968 1970 1972 1974 1977 1979 1981

Year of Birth

How do you describe your ethnicity (select all that apply)?

- ☐ Indigenous
- ☐ Asian
- ☐ Black / African American
- ☐ Native Hawaiian or Pacific Islander
- ☐ White / Caucasian
- ☐ Other

What gender do you identify as?

- ☐ Woman
- ☐ Man
- ☐ Non-binary / third gender / queer
- ☐ Two-spirit
- ☐ Other
- ☐ Prefer not to say

Which of the following risk factors for chronic disease do you experience? (select all that apply)

- ☐ Tobacco use
- ☐ Alcohol use
- ☐ Raised blood pressure (hypertension)
- ☐ Physical inactivity
- ☐ Raised cholesterol
- ☐ Overweight / obesity
- ☐ Unhealthy diet
- ☐ Raised blood glucose
- ☐ Other
- ☐ None of the above

What role do you have on UBC Vancouver Campus?

☐ Faculty

☐ Staff

☐ Other

Do you live on campus?

☐ Yes

☐ No

How often are you on campus (*pre-COVID*)?

0 1 1 2 3 4 4 5 6 6 7

Number of Days/Week



How many hours per week do you usually perform moderate-vigorous physical activity?

Before this survey, had you heard of UBC BodyWorks? If yes, what is your opinion of it?

What role do you have on UBC Vancouver Campus?

☐ Faculty

☐ Staff

☐ Other

Do you live on campus?

☐ Yes

☐ No

How often are you on campus (*pre-COVID*)?

0 1 1 2 3 4 4 5 6 6 7

Number of Days/Week



How many hours per week do you usually perform moderate-vigorous physical activity?

Before this survey, had you heard of UBC BodyWorks? If yes, what is your opinion of it?

Comfort Factor

	Strongly Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
I enjoy exercising in groups	☐	☐	☐	☐	☐
I enjoy exercising alone	☐	☐	☐	☐	☐
I enjoy exercising one-on-one with a trainer	☐	☐	☐	☐	☐
I enjoy exercising alongside coworkers	☐	☐	☐	☐	☐
I enjoy exercising at my workplace	☐	☐	☐	☐	☐
I enjoy meeting new people	☐	☐	☐	☐	☐

What kind of barriers, if any, do you face with exercise programming that haven't been addressed in previous examples (e.g. gender, culture)?

If you have no perceived barriers, please enter N/A.

Health & Physical Activity Factor

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
Exercise gives me energy	☐	☐	☐	☐	☐
I enjoy exercise	☐	☐	☐	☐	☐
I want to be physically fit	☐	☐	☐	☐	☐
I exercise to manage stress	☐	☐	☐	☐	☐
I exercise for health concerns	☐	☐	☐	☐	☐
I exercise based on the advice of a medical professional	☐	☐	☐	☐	☐

Do you experience any limiting health/physical barriers to exercise? If yes, please describe them.

If you have no perceived barriers, please enter N/A.

Engagement Factor

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
I am willing to spend money on exercise classes	☐	☐	☐	☐	☐
I have time to attend exercise classes	☐	☐	☐	☐	☐
I can safely and comfortably transport myself to facilities at UBC	☐	☐	☐	☐	☐

Which of the following modes of transportation is a barrier to your participation in exercise programming at BodyWorks on UBC Point Grey Campus (select all that apply)?

- ☐ Walking Distance
- ☐ Bus Fare
- ☐ Bicycle Parking
- ☐ Other
- ☐ None of the above

Which of the following modes of transportation is a barrier to your participation in exercise programming at BodyWorks on UBC Point Grey Campus (select all that apply)?

- ☐ Walking Distance
- ☐ Bus Fare
- ☐ Bicycle Parking
- ☐ Other
- ☐ None of the above

The mission of BodyWorks is to develop and deliver exceptional evidence-based fitness programs and services that educate and inspire to enhance wellbeing, while facilitating excellence in student leadership and mastery of skills.

What kind of programming would you be most interested in? (For example, beginner classes, condition-specific classes, dance fitness, etc.)

Do you have any other comments or feedback pertaining to BodyWorks at UBC?

Appendix B

UBC professor and staff member recruitment email

Hello [insert name],

As part of a course-based research project for KIN 464: Health Promotion and Physical Activity, our team is conducting a study to identify motivators and barriers to exercise participation. The Principal Investigator on this project is Dr. Andrea Bundon (andrea.bundon@ubc.ca). If you are aged 40-60 and live or work on the UBC Vancouver campus, we would really appreciate it if you completed our survey.

The survey is anonymous and takes approximately 10 minutes to complete, and your contribution will allow our team and our partner, [UBC BodyWorks](#), to provide greater physical activity and exercise opportunities for people on UBC Vancouver Campus. Individuals who complete the survey are eligible for a draw (2 \$25 gift cards to UBC Bookstore or Food Services and 1 Fitbit).

If you are interested in completing the survey, please click the link below. If you have any questions, please send us an email. Thank you for your time and consideration.

Survey Link: https://ubc.ca1.qualtrics.com/jfe/form/SV_aVs4Wyha3Qcrxum

Best,

Courtney Smith

Christina Lee

Samantha Kerr

Megan Lai

Undergraduate Students

School of Kinesiology | The University of British Columbia

Email: Kin464BodyWorksStudy@gmail.com



a place of mind
THE UNIVERSITY OF BRITISH COLUMBIA

Appendix C

Professor recruitment email if a group member is currently taking one of their courses

Hello [insert name],

My name is [insert name] and I am part of your [insert course name] this term. As part of a course-based research project for KIN 464: Health Promotion and Physical Activity, my team is conducting a study to identify motivators and barriers to exercise participation. The Principal Investigator on this project is Dr. Andrea Bundon (andrea.bundon@ubc.ca). If you are aged 40-60, I would really appreciate it if you completed our survey!

The survey is anonymous and takes approximately 10 minutes to complete, and your contribution will allow our team and our partner, [UBC BodyWorks](#), to provide greater physical activity and exercise opportunities for people on UBC Vancouver Campus. If you choose to complete the survey, you will be eligible for a draw (2 \$25 gift cards to UBC Bookstore or Food Services and 1 Fitbit).

If you are interested in completing the survey, please click the link below. If you have any questions, please send us an email. Thank you for your time and consideration.

Survey Link: https://ubc.ca1.qualtrics.com/jfe/form/SV_aVs4Wyha3Qcrxum

Best,

[insert name]

Undergraduate Student

School of Kinesiology | The University of British Columbia

Email: Kin464BodyWorksStudy@gmail.com



a place of mind
THE UNIVERSITY OF BRITISH COLUMBIA

Appendix D

Journey Residence recruitment email (building where one of our group members resides)

Hi Journey Residents,

I hope you are all doing well!

My name is Sam and I live in an apartment in the building, and I'm also an undergraduate student studying kinesiology at UBC. As part of a course-based research project for KIN 464: Health Promotion and Physical Activity, my team is conducting a study to identify motivators and barriers to exercise participation. The Principal Investigator on this project is Dr. Andrea Bundon (andrea.bundon@ubc.ca). If you are aged 40-60, I would really appreciate it if you could take the time to complete our survey!

The survey is anonymous and takes approximately 10 minutes to complete, and your contribution will allow our team and our partner, [UBC BodyWorks](#), to provide greater physical activity and exercise opportunities for people on UBC Vancouver Campus. . Individuals who complete the survey are eligible for a draw (2 \$25 gift cards to UBC Bookstore or Food Services and 1 Fitbit).

If you are interested in completing the survey, please click the link below. If you have any questions, please feel free to respond to this email, or contact my team at Kin464BodyWorksStudy@gmail.com . Thank you for your time and consideration!

Survey Link: https://ubc.ca1.qualtrics.com/jfe/form/SV_aVs4Wyha3Qcrxum

Best,

Sam Kerr

Unit #