

# Lack of Time is the Consistent Barrier to Physical Activity and Exercise in 18 to 64 year-old Males and Females from both South Carolina and Southern Ontario

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Received October 12, 2020; Revised November 13, 2020; Accepted November 20, 2020

**Abstract** The purpose of this study was to compare and contrast Southern Ontarian and South Carolinian adults to examine adults' psychological, lack of time and physical barriers to PA and exercise. We also sought to determine whether any gender differences existed in the identification of prominent barriers to PA. In each geographical location (Southern Ontario and South Carolina), focus groups were first held amongst diverse groups to identify common perceptions and attitudes towards PA and exercise, followed by a more in-depth survey to quantify these perceptions and attitudes. Lack of time was consistently the most commonly identified type of general barrier to PA among adults aged 18-64 years, in both South Carolina and Southern Ontario. This was true of both males and females. The most commonly indicated barriers across both age groups and populations were: "Other things are more important and require my time and energy", "I have a difficult time finding the time needed to fit the gym into my day", "Once I get home, it's difficult to find time to be active", and "There are so many other things for me to do, it's easy to make excuses rather than exercise". The only significant difference in responses amongst genders was in Southern Ontario, where females indicated "inclement weather" as a significant physical barrier. Interestingly, negative perceptions of exercise (pain, lack of interest) do not appear to be significant barriers. Overall, lack of time, whether perceived or real, is the major barrier to PA in adults 18-64 years old. Examining and identifying perceived barriers to exercise and PA is necessary in order to develop successful intervention programs. Meeting the PA guidelines require creative methods with a better appreciation for personal preferences. This will help improve the way we promote, educate and inspire others to have the confidence to be more active.

**Keywords:** *lifestyle physical activity, lack of time barriers, psychological barriers, physical barriers, physical activity promotion*

**Cite This Article:** M. Felicia Cavallini, Makalynn E. Callaghan, Caylee B. Premo, James W. Scott, and David J. Dyck, "Lack of Time is the Consistent Barrier to Physical Activity and Exercise in 18 to 64 year-old Males and Females from both South Carolina and Southern Ontario." *Journal of Physical Activity Research*, vol. 5, no. 2 (2020): 100-106. doi: 10.12691/jpar-5-2-6.

## 1. Introduction

It is widely understood that regular exercise is fundamental to overall health and for ameliorating various chronic conditions. However, there has been little change in physical activity (PA) levels among Canadian and American adults meeting the mutually shared PA guidelines of 150 minutes of moderate to vigorous PA plus 2 or more strengthening activities per week [1,2]. The majority of Americans and Canadians do not meet national PA guidelines [1,3,4,5], and with the rise of obesity and sedentary lifestyles, our nations' health continues to decline [6,7]. Physical inactivity remains prevalent and a major risk factor towards obesity [8,9,10]

and heart disease [11,12]; however, even a moderate amount of PA is psychologically, emotionally, and physically beneficial [13,14].

One's environment [15,16,17], as well as lack of time, psychological, and physical barriers [18] can have a negative impact on physical activity (PA) levels. Adults must think resourcefully how PA can be naturally incorporated into their daily routine [19]. The workplace can potentially be an important place to help many Americans and Canadians who do not meet the national PA guidelines. The current pandemic has underscored the importance and critical need to optimize health not only for quality of living, but survival. However, the current pandemic has likely had a profound influence on PA. For some, this has created more time to be physically active. For others living in lower socioeconomic and less safe

areas, being active in their neighborhoods may not be comfortable. We need to recognize and accommodate different social (political) and cultural differences that may affect how a person can safely incorporate PA into their day.

Barriers to PA for young men and women often revolve around lack of time and motivation. Considering that this age group is often in school or transitioning occupationally, forming meaningful relationships may not always be possible. Accessibility to traditional work-out equipment, as well as the costs of joining a gym, may be a challenge to this age group [20,21,22], but not so much in the middle-aged and older populations due to career building and retirement plans and pensions [18,23,24]. Dissatisfaction in body image among men and women has increased in recent years. Young men are more motivated to engage in PA for affective reasons and aim for a more muscular body, while women are more interested in slimmer bodies and weight loss [21,25,26,27,28].

There has been a major shift in the family dynamic since the 1950's. Mothers are a powerful part of the workforce holding down the same types of jobs as males while raising their children [29]. Between 1965 and 2000, mothers with children under the age of 18 increased dramatically from 45% to 78% with full employment status rising from 19% to 57% [30]. Feelings of guilt have been identified from both genders [31], stemming from placing energy in taking care of themselves rather than their children. Studies reveal females perceive interacting and playing with kids, spending quality time with their spouse, and tackling obligations and duties around the house are more important than devoting quality time to participating in PA, and furthermore feel judged if time is spent concentrating and prioritizing being physically active [31,32]. Complicating the family dynamic, U.S. females whose education level is high school or below, the probability of marriage decreases but childbearing increases, and increases at an earlier age than their counterpart mothers in other developed nations worldwide [23]. Although many fathers live with the mothers at the time of the birth of their children, the presence of the father declines to 36% by the time the child is 5 years old and slightly over half of the mothers and fathers are still together. Moreover, only 17% of the couples marry and 19% of the mothers and fathers continue to live together [33].

## 1.1. Purpose of the Study

The purpose of this study was to compare and contrast Southern Ontarian and South Carolinian adults to i) examine adults' psychological, lack of time and physical barriers to PA and exercise, ii) determine if any gender differences existed across all age groups, and iii) identify the most significant barriers in each category, as well as overall. It was hypothesized there would be multiple significant lack of time barriers among the younger 18-34 and 35-64 groups in both genders. It was also hypothesized that winter would be a significant physical barrier for Southern Ontarians, particularly among females, and iv) the psychological barrier of "There are so many other things for me to do, it's easy to make excuses and not be physically active" will be

significant in the 18-34 and 35-64 age groups in both Southern Ontario and South Carolina.

## 2. Methods

### 2.1. Participants

Both research studies in Guelph and Wellington and Dufferin counties in Ontario, Canada and Gaffney and Cherokee County in South Carolina received Research Ethics Board (University of Guelph) and Institutional Review Board (Limestone College) clearance respectively. Phase I of the research study concentrated on the qualitative approach to gathering data through facilitated focus group discussions and took place in Guelph from December of 2014 to May of 2015, and in Cherokee County from December of 2016 to May of 2018. Adults ages 18 years and older representing 13 diverse groups from rural and urban communities in Guelph and Wellington County in Southwestern Ontario, Canada and 13 groups from Cherokee County, South Carolina were invited to participate in this study as previously reported [18,34]. Informed consent was obtained from all participants. A designated contact person from each of the focus groups in Southern Ontario and South Carolina received an e-mail with 3 sets of information attached to distribute to each of their members. The first was a letter of information explaining both the background and the purpose of the study prior to the focus group discussion. Purposeful sampling was employed targeting specific, diverse focus groups that shared common interests and activities in which the members were then eligible to lend themselves to a facilitated group discussion. The exclusion criteria were any health conditions that precluded a participant from exercising or being physically active. The selection of participants was non-random. Each contact person per focus group asked for volunteers who would be willing to express their opinions, thoughts, and attitude towards their motivators to engaging in physical activity and exercise in order to achieve depth of understanding. The second information document highlighted sample discussion questions, and the third document was the informed consent, which contained the purpose, procedures, and importance of the study, potential risks and discomforts, benefits to participation and assurance of confidentiality.

### 2.2. Procedures

#### 2.2.1. Phase I

Focus group facilitated discussions were conducted with 234 people from Southwestern Ontario and 175 people from South Carolina representing the various groups of participants previously identified. In general, each of the thirteen groups in Southern Ontario and South Carolina included 6-15 participants. Focus group interviews were held in the preferred meeting place for each group. Every effort was made to create a comfortable atmosphere in order to facilitate a relaxed discussion. Conversations were not recorded, and each participant was reassured that the discussions would be kept confidential.

Participants were urged to share their experiences and articulate their feelings regarding *barriers to physical activity or exercise* in this environment of minimum structure other than gently probing questions to allow thoughts to flow freely and allow for in-depth conversation. At the beginning of each session, participants were asked to complete a short demographic questionnaire regarding their gender, age group, and residence. The focus group discussions lasted approximately 30 to 60 minutes. Participants were free to leave at any time. Guiding questions included: *What do you think of when you hear the word exercise? What do you think of when you hear the word, physical activity? Is the winter season or extreme weather a barrier for you? Do you feel like you have so many things to do that it's easy to make excuses and not participate in PA? After work, are you too tired to engage in PA? Do you feel that other things are more important and require your time and energy? Is it difficult for you to find the time needed to fit the gym into your day? Do you feel like you have time to drive to the gym, change clothes, work-out and shower afterwards?* Further probing questions followed and were dependent upon the participants' initial responses. Overall, the conversations were navigated to explore key *barriers* that contribute to partaking in physical activity or exercise found in the Canadian and American adult population. Focus group discussions were facilitated by the same trained, content expert. In order to ensure consistency, the same trained, core group of students for each study were present at all the focus groups to make notes of the conversation as well as an interpretation of what they heard. Upon completion of each focus group discussion, the students sent their typed notes to the group facilitator for thorough review. The notes were meticulously reviewed for each focus group by the same trained group facilitator with the students to allow essential ideas to emerge and to ensure there was complete agreement with the interpretation. The aim was to identify recurring themes emphasized by the participants. These themes were then categorized under separate headings and color-coded to arrange the data. For example, a blue colored box had the title, "Lack of Time Barriers". Underneath the title were listed some examples of the following comments that reflected this category: "Difficult to be physically active after coming home from work," "No time to drive to the gym and work-out," "Other things are more important and require my time and energy," and so on. A purple colored box was titled, "Physical Barriers," and some of the comments listed under this category were "Pain and/or injury prevents me from being as physically active as I would like to be," "Inclement weather is a factor for me when it comes to PA and exercise," and "I'm concerned for my safety," etc. Finally, a pink color coded box represented, "Psychological Barriers to PA" with comments like, "There are so many other things for me to do, it's easy to make excuses rather than exercise," "I have a negative perception of exercise," and "I just don't feel like doing anything" representing some of the feedback from the focus group participants in this category. From the feedback given in phase I of the study, it became clear that many of the participants reflected that "Other things are more important and require my time and energy," "There

are so many other things for me to do, it's easy to make excuses rather than exercise," "Inclement weather (too cold in Canada)," "I have a difficult time finding the time needed to fit the gym into my day," and "Once I get home, it's difficult to find the time to be active" as their top barriers to PA and exercise.

### 2.2.2. Phase II

Using the themes that emerged from the focus group interviews, a research-generated survey was created to validate the findings of the initial focus group interviews regarding barriers to PA. With this purpose in mind, common themes and trends that emerged on barriers to physical activity and exercise from the focus group interviews were identified and used to construct a series of descriptive statements to reflect the responses from the focus group interviews. The team of content specialists collaborated throughout the process. Since phase I of the study was qualitative, it was imperative the research-generated survey accurately reflected the potential key barriers to PA identified in the focus groups. All survey items reflected what was heard in the focus group discussions from phase I. The survey was designed to be completed in less than 10 minutes. It is important to emphasize that we did not wish to use any other existing surveys or questionnaires to assess barriers of PA. This was in part to be as current as possible with present day opinions and attitudes, as well as to be as specific as possible to the population that we were assessing.

The responses from the survey data were consistent with the information conveyed from the focus groups. Phase II of this study was cleared by the University of Guelph Research Ethics Board and Limestone College Institutional Review Board prior to distribution of surveys. Surveys were distributed between July and September 2015 (Southern Ontario), and July 2018 to July 2019 (South Carolina) to individuals 18 years of age and older from the same community groups where the focus group data were initially collected. Informed consents from these participants were obtained and survey administration was scheduled at a convenient time and location suitable for each group. Participation in the focus group discussions was not required for completion of the survey. Basic demographic information (age, gender, place of residence) was collected again. Basic demographic information (age, gender, place of residence) was collected again. Participants were asked to answer "yes" or "no" for each of the descriptive statements listed under each of the barrier sections representing physical, psychological and lack of time. In addition, each of the respondents was asked to list and rank their overall top 3 barriers from a list of barriers heard from the feedback given in phase I, including all the barriers listed in any of the 3 categories.

Which of the following, if any, do you consider to be YOUR "lack of time" barriers to physical activity and exercise?

Other things are more important and require my time and energy

Once I get home, it's difficult to find time to be active

I work and have children

I don't have time to drive to the gym, change clothes, work-out and shower afterwards

I have a difficult time finding the time needed to fit the gym into my day

Other, please specify: \_\_\_\_\_

Which of the following, if any, do you consider to be YOUR “physical” barriers to physical activity and exercise?

Winter weather is a factor for me when it comes to physical activity and exercise

I’m concerned for my safety

Pain and/or injury prevents me from being as physically active as I would like to be

I work in an environment where there are little or no employment resources to be physically active

My job demands and I’m too tired after work to exercise afterwards

Other, please specify: \_\_\_\_\_

Which of the following, if any, do you consider to be YOUR “psychological” barriers to physical activity and exercise?

There are so many other things for me to do, it’s easy to make excuses rather than exercise

I did not grow up with exercise and it’s not part of me or my family

I have a negative perception of exercise

I don’t know where or how to start

I just don’t feel like doing anything

Other, please specify: \_\_\_\_\_

### 2.3. Data Analysis

Eighty-six percent (277/323) of all surveys distributed in Southern Ontario were completed providing valid survey data for further analyses. 305 out of 320 (95%) surveys administered in South Carolina were completed. Data analysis for the physical, psychological, lack of time sections involved primarily descriptive statistics. Care was taken regarding the accuracy of the response recording; occasionally, participants did not respond to one or more barrier descriptors on the survey, particularly if the participant did not identify with any of the listed barriers in one of the sections. Participants’ responses to the survey were organized in a spreadsheet (Microsoft Excel) according to gender and in the following age groups: 18-34, 35-64, and older than 65 years. The data presented in this manuscript is from individuals aged 18 to 64 years. Data representing the oldest population will be published separately. For the barrier rankings, the number of times the most common barrier was chosen was divided by the total number of responses to calculate the percentage. The procedure was repeated for barrier rankings 2 and 3, for each gender. It should be noted that some of the data presented here for the Southern Ontario population (Table 1, Table 2 and Table 3) has previously been reported [18]. The South Carolina barrier data has not been previously published. The overall barrier rankings of the Southern Ontario population between the ages of only 18 and 64 has also not been previously published. The focus of this paper is to compare the two populations.

### 3. Results

**Table 1. Male and female responses to descriptive statements related to lack of time as a barrier to physical activity. Numbers represent the percentage of total respondents answering “Yes” to the question.**

Descriptive statements	Ages 18-34 South Carolina	Ages 35-64 South Carolina	Ages 18-34 Southern Ont	Ages 35-64 Southern Ont
	male, n=64 female, n=42	male, n=80 female, n=51	male, n=19-21 female, n=62-63	male, n=40-45 female, n=35
Other things are more important and require my time and energy	Male 67% Female 52%	Male 64% Female 67%	Male 43% Female 68%	Male 51% Female 40%
Once I get home, it’s difficult to find time to be active	Male 48% Female 45%	Male 35% Female 55%	Male 67% Female 67%	Male 38% Female 43%
I work/have children	Male 41% Female 21%	Male 33% Female 33%	Male 10% Female 11%	Male 27% Female 26%
I don’t have time to drive to the gym, change clothes, work out, and shower	Male 31% Female 29%	Male 35% Female 43%	Male 43% Female 30%	Male 33% Female 20%
I have a difficult time finding the time needed to fit the gym into my day	Male 58% Female 55%	Male 56% Female 63%	Male 43% Female 65%	Male 40% Female 29%

**Table 2. Male and female responses to descriptive statements related to physical barriers to physical activity. Numbers represent the percentage of total respondents answering “Yes” to the question**

Descriptive statements	Ages 18-34 South Carolina	Ages 35-64 South Carolina	Ages 18-34 Southern Ont	Ages 35-64 Southern Ont
	male, n=64 female, n=42	male, n=80 female, n=51	male, n=19-21 female, n=62-63	male, n=40-45 female, n=35
Inclement weather is a factor for me when it comes to physical activity and exercise	Male 16% Female 29%	Male 14% Female 27%	Male 38% Female 67%	Male 36% Female 49%
I’m concerned for my safety	Male 6% Female 0%	Male 3% Female 12%	Male 5% Female 8%	Male 7% Female 3%
Pain and/or injury prevents me from being as physically active as I would like to be	Male 20% Female 21%	Male 28% Female 20%	Male 29% Female 22%	Male 29% Female 23%
I work in an environment where there are little or no employment resources to be physically active	Male 3% Female 10 %	Male 4% Female 20%	Male 10% Female 11%	Male 18% Female 23%
My job demands are high and I’m too tired after work to exercise	Male 19% Female 21%	Male 36% Female 37%	Male 38% Female 33%	Male 27% Female 31%

**Table 3. Male and female responses to descriptive statements related to psychological barriers to physical activity. Numbers represent the percentage of total respondents answering “Yes” to the question.**

Descriptive statements	Ages 18-34 South Carolina	Ages 35-64 South Carolina	Ages 18-34 Southern Ont	Ages 35-64 Southern Ont
	male, n=64 female, n=42	male, n=80 female, n=51	male, n=19-21 female, n=62-63	male, n=40-45 female, n=35
There are so many other things for me to do, it's easy to make excuses rather than exercise	Male 45% Female 57%	Male 41% Female 65%	Male 52% Female 84%	Male 49% Female 60%
I did not grow up with exercise and it's not part of me or my family	Male 11% Female 5%	Male 18% Female 24%	Male 10% Female 17%	Male 24% Female 17%
I have a negative perception of exercise	Male 5% Female 5%	Male 1% Female 6%	Male 10% Female 10%	Male 11% Female 3%
I don't know where or how to start	Male 14% Female 17%	Male 10% Female 2%	Male 24% Female 11%	Male 9% Female 6%
I just don't feel like doing anything	Male 23% Female 36%	Male 30% Female 22%	Male 48% Female 38%	Male 16% Female 23%

**Table 4. Male and female overall barrier rankings to the survey descriptive statements related to lack of time, physical and psychological barriers to physical activity. Numbers represent the percentage of total respondents answering “Yes” to the question**

All S. Carolina Males (18-64)	All S. Ontario Males (18-64)	All S. Carolina Females (18-64)	All S. Ontario Females (18-64)
#1 Other things are more important and require my time and energy  65%	#1 There are so many other things for me to do, it's easy to make excuses rather than exercise  53%	#1 There are so many other things for me to do, it's easy to make excuses rather than exercise  61%	#1 There are so many other things for me to do, it's easy to make excuses rather than exercise  75%
#2 I have a difficult time finding the time needed to fit the gym into my day  57%	#2 Other things are more important and require my time and energy  48%	#2 Other things are more important and require my time and energy  60%	#2 Inclement weather is a factor for me when it comes to physical activity and exercise  60%
#3 There are so many other things for me to do, it's easy to make excuses rather than exercise  43%	#3 Once I get home, it's difficult to find time to be active  47%	#3 I have a difficult time finding the time needed to fit the gym into my day  59%	#3 Other things are more important and require my time and energy AND #3 Once I get home, it's difficult to find time to be active  58%

## 4. Discussion

Unquestionably, lack of time was the most common type of general barrier to PA chosen among South Carolinians and Southern Ontarian adults. The most commonly indicated barriers, collectively, across both age groups and populations were: “Other things are more important and require my time and energy”, “I have a difficult time finding the time needed to fit the gym into my day”, “Once I get home, it's difficult to find time to be active”, and “There are so many other things for me to do, it's easy to make excuses rather than exercise”. Southern Ontario females also indicated “inclement weather” as a significant physical barrier. The bottom line is that lack of time (psychological), whether perceived or real, is the major barrier to PA in adults 18-64 years old.

Since there is a widely held belief that other obligations and responsibilities are more important and require one's time and energy, participation in PA during the day may be discouraged. As a result, specific intervention strategies need to be implemented where all Americans and Canadians can realistically partake in lifestyle PA. Can the worksite be the principal place where many American and Canadian employees engage in lifestyle PA? Could this help to overcome barriers such as inclement weather during winter, or finding time to be physically active once you get home after work? It is our belief that a lifestyle PA worksite plan can be established to help work personnel achieve the recommended PA guidelines.

Numerous studies indicate a preference for non-exercise PA versus traditional exercise [35,36,37]. Mowing the

grass with a push mower, vacuuming, gardening, shoveling snow, walking the dog, are all examples of lifestyle PA [38,39,40,41,42]. A substantial body of research shows health benefits resulting from lifestyle PA in household [38,39,40,41,42], leisure [40,43,44,45], work-related [40,43,44,45,46], and active transportation-related [43,45,47,48,49,50] domains; many of these tasks can reach the moderate intensity threshold in which health benefits are realized. It may be that people engage in lifestyle PA for a broader range of reasons than those who exercise. Completing a task or performing goal-oriented work is often part of lifestyle PA and as a result, people may be more inclined to perform these kinds of PA rather than explicit exercise. In addition, PA in the workplace has proven to help employees improve their health and overall productivity while feeling more relaxed, content and focused [40,43,44,45,46,51]. Workplace PA can also increase morale and lower healthcare expenses [52].

Previously, younger groups of participants have described lack of time as the most prevalent barrier to PA [53]. Consistent with our hypothesis, this study revealed lack of time was the most significant general barrier category. However, the psychological barrier “there are so many other things for me to do, it's easy to make excuses rather than exercise” was the most consistently indicated number one barrier overall, in both populations and genders (Table 4). In our previous study [18] examining barriers to PA in Southern Ontario males and females, more barriers to PA were reported by females than males (8 vs 3), when considering all age groups (up to 65 years of age and older). However, in the present study, when

considering the responses of both Southern Ontario and South Carolina populations, this was not the case. Four barriers (3 lack of time, 1 psychological) were similarly chosen by males and females, while only the younger females from Southern Ontario chose a physical barrier (inclement weather). Thus, the barriers to PA are consistent in younger to middle aged individuals, regardless of gender, across these two populations. This also suggests a difference in perceived barriers in older individuals. This requires further analysis.

Consistent with previous research findings, inclement weather presents a barrier for some people, and some studies point to the tendency for PA to decrease in the colder months [54,55,56,57]. Colder weather is also associated with a decreased usage of trails and parks [58], as well as participation in outdoor physical activities [56]. Winter was the only significant physical barrier indicated by the females in this study, and the men did not rank “winter weather” in the overall barrier rankings. Nonetheless, interventions should be implemented to encourage people to participate in PA during the winter by increasing awareness and giving more access to indoor facilities.

The evidence collected from the lack of time barriers indicated both males and females strongly felt “once home, it’s difficult to find time to be active,” and “other things are more important and require my time and energy.” The few studies conducted in the areas of PA preferences, point to the tendency for a preference for day to day lifestyle PA over exercise [19,36,37]. Completing tasks at home or performing useful work is often part of lifestyle PA and as a result, people may be more inclined to perform these kinds of PA than explicit prescribed exercise. If this is true, and we recognize that only 15% of Canadians are meeting the recommended guidelines for PA to date [4], then it stands that acquiring the health benefits through unstructured or lifestyle PA has not been properly and proportionally taught and promoted to parallel peoples’ preferences for meeting the PA guidelines. More efforts to educate children and the youth of the benefits of day-to-day activity may improve self-efficacy to meet the recommended PA guidelines thereby increasing the overall PA levels well into adulthood.

In conclusion, the current study strongly supports the notion that there are strong perceived barriers to PA. In particular, our study points to the consistency of lack of time barriers in two different populations (one American, one Canadian), in both males and females. Examining and identifying perceived barriers to exercise and PA is necessary in order to develop intervention programs that target the large percent of the population not attaining the recommended guidelines for PA. Even after decades of research to understand the benefits PA leading to a healthy body, there is clearly a disconnect between our efforts to educate and motivate our countries to be physically active and what our populations actually do. Understanding that many people prefer more natural lifestyle PA and realizing their lack of time, psychological and physical barriers, the workplace may be a logical and natural environment to enhance engagement in PA. This research signifies the importance of not just being a scientist, but a practitioner. Meeting the PA guidelines can potentially be

accomplished, but creative methods need to be employed with a better appreciation for personal preferences. This will help improve the way we promote, educate and inspire others to have the confidence to be more active.

## Acknowledgements

Dr. Cavallini was the recipient of a US Fulbright Scholarship in 2014-2015 during which time the Southern Ontario part of this study was conducted.

## Statement of Competing Interests

The authors have no competing interests.

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