CHANGES IN EXERCISE HABITS OF ADULTS DURING THE COVID-19 PANDEMIC

Honors Thesis

Presented in Partial Fulfillment of the Requirements
For the Degree of Bachelor of Science in Sport and Movement Science

In the College of Arts and Sciences
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Abstract

This study explores the changes in exercise habits of college students during the Covid-19 pandemic. The focus is on how exercise plans changed before, during, and after the pandemic. A survey was conducted among 424 Salem State University undergraduate students to see the shifts in the type of workouts and frequency of exercising pre-, during, and post-pandemic. Results show that 61.21% of participants had to alter their exercise plan due to the pandemic. With many gyms and sports teams stopping during the pandemic, it led to a shift in which more people switched to cardio and weight lifting—not having as much equipment or any equipment forced people to change their old routines for exercise. Despite all the challenges during the pandemic, 51.1% of participants returned to their exercise routines from before the pandemic started. Of the individuals surveyed, 34.88% did not return to their regular routines, meaning they either found new routines during the pandemic or did not want to pick up their exercise habits where they last left them. This study focuses on how people can adapt and are determined when it comes to doing physical activity, no matter the challenges. This research shares strategies to promote exercise while sustaining both physical and mental health in case of other future uncertainties.

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Acknowledgments

First, I would like to thank my faculty advisor, Dr. Ann Marie Gallo, for all her help and support on this thesis. Her guidance and expertise helped me write this thesis; I am thankful for her mentorship. Thank you to Dr. Jason Gillis for helping with the early stages of my honors thesis. His support helped set a solid foundation to begin this journey. I would also like to thank Rebecca Mirick and Scott Nowka for their guidance in the honor seminars. My friends and family have also been huge supporters throughout this process. My mom always encouraged me to do my best and to work towards my goals. I am grateful for all my mom and friends did to support and encourage me along this journey. They all motivated me to overcome challenges and to be determined to finish what I started.

Introduction

Physical activity is an integral part of life because it helps with mental and physical health and helps strengthen your bones and muscles. Centers for Disease Control and Prevention (2022) explains that: "An estimated 110,000 deaths per year could be prevented if US adults ages 40 and older increased their moderate-to-vigorous physical activity by a small amount. Even 10 minutes more a day would make a difference" (p. 3). Such findings show the effect that physical activity has by assisting overall health. Before March 2020, people lived "normal" lives with jobs, school, social lives, and activities for children. Once we were in a lockdown because of COVID 19, people had to change the way they lived their lives. With boredom arising, some people adopted physical activity to fill some of the hours in their day. Most people had to stop their workouts when gyms were closed. Park (2022) shows that people in places like transit stations decreased by 34%, and people in workplaces decreased by 31%.

On the contrary, individuals spending time in parks and residential places increased by 9%. Table 3 in the study has data to show the number of people who have a sedentary lifestyle increased because of the pandemic. McCarthy (2021) explains, by the first full week of lockdown, the median change in PA was 57 minutes less than baseline. This represents a 37% reduction in weekly minutes of PA. Overall, 63% of people eased their activity level between baseline and the first week of COVID-19 restrictions.

Rationale

In March 2020, when the Global Pandemic forced schools and businesses to close because the disease was spreading too quickly. Wahl-Alexander and

McMurray (2021, p. 3) state that: "By March 18, 2020, over 850 million children and adolescents from 30 countries were learning virtually, unchartered territory for many students." To be cautious, people needed to be six feet apart from one another; gyms, schools, sports teams, swimming pools, and organized races shut down or canceled due to COVID. Stein (2021, p. 1) mentions that:

> "The consulting firm Deloitte estimates that clubs in Europe lost 15.4 percent of their members, or more than 10 million people, even when closures were relatively brief. Industry revenue fell twice as much, by almost 33 percent, as clients froze their accounts or requested refunds."

With all of the gyms closed and people having to distance themselves from one another, it made people have to change how they worked, went to school, exercised, and spent their leisure time.

Some people started doing cardiovascular exercise like walking and bike rides. Other people used the weights they had in their houses to do at-home workouts. Individuals were creative and used heavy objects daily to replicate the gym's free weights. Filiz and Konukman (2020) mention that to have more space, one could use empty parking lots, tennis courts, or even local parks to allow students to spread out. If students did not have equipment, they could do bodyweight exercises or try a new activity like dance or yoga. If someone wanted to exercise and did not have a home gym, they needed to be creative to include movement into their days. According to the New York Times, Reynolds (2020, p. 2) states that:

> "A gloomier June study, however, using anonymized data from more than 450,000 users of a smartphone step-counting app, concluded that, around the

world steps declined substantially after lockdowns began. Average daily steps declined by about 5.5 percent during the first ten days of a Nation's Pandemic lockdowns and by about 27 percent by the end of the first month."

The decrease in exercise has caused some people to gain weight. Dor-Haim (2021, p. 1) shows: "Results confirmed that 70% of Israelis trained less than their usual routine, 60% used digital media for training, and 55% gained weight. Half of the respondents gained more than 2 kg, with an average increase of 1.2 kg."

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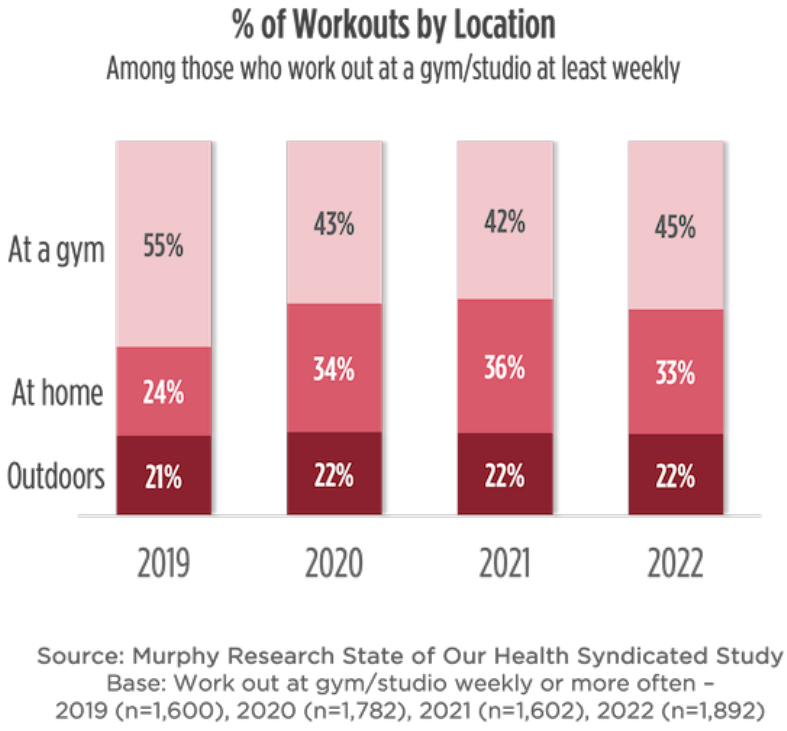


"The shift toward exercising at home and at other types of workout facilities means that consumers are coming to the gym for different needs today than they were pre-pandemic. Yes, most are still there for the cardio and strength equipment, but with more cardio and strength options elsewhere, there are fewer

gym members who do those activities at the gym today than in 2019" (Marion, 2023, p. 4). With restrictions, it caused people to change their exercise habits. Post-pandemic, people continued the new routines that they started during the pandemic. At-home gyms and spaces were created during the pandemic so that people could continue to exercise. With the new routines, it now is convenient to continue with what people already started.

Methods

The research for this topic was achieved using a comprehensive survey; people of different ages took the survey. The survey in Appendix A was designed to gather insights on people's exercise habits and how they shifted. The survey and research project received approval from the Institutional Review Board (IRB) Sponsored Programs and Research Administration at Salem State University.

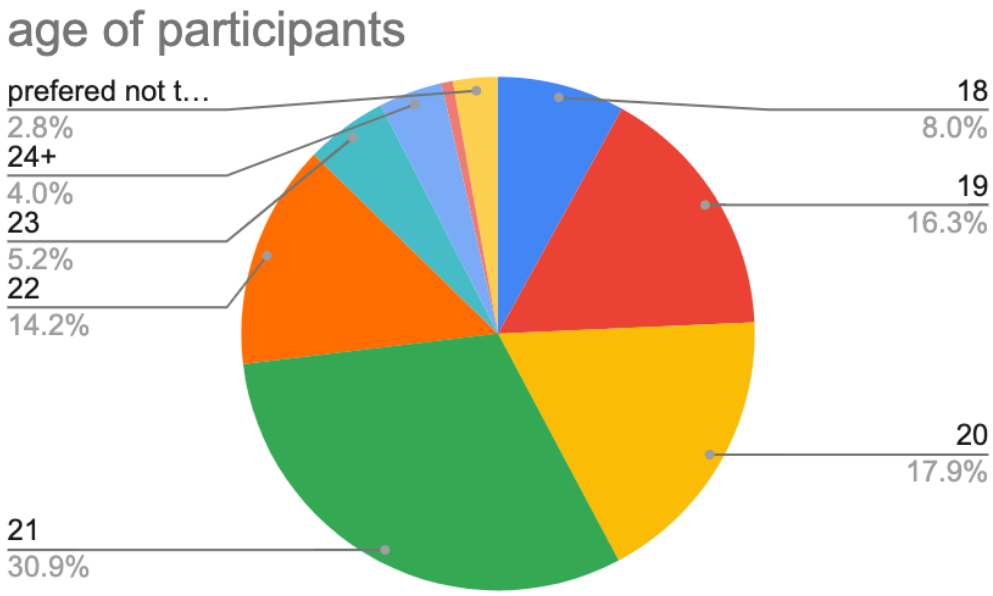
Participants

The participants were people over the age of eighteen; they were sent a link to complete the online survey. Participants were recruited from a diverse pool; the link to this survey was posted on the Salem State Honors Program Instagram, Facebook, and honors newsletter, the Phi Sigma Sigma sorority Instagram, the Greek Council Instagram, and the Sport and Movement Science Instagram. These diverse participants showed the representation from many perspectives. Only completed surveys were used in the data analysis. The statistical analysis compared the results from the survey to see how many hours/days people worked out before, during, and after the pandemic. Data was examined for the similarities and differences with demographic factors and patterns relating to exercise behavior.

Before analyzing specific findings, it was important to look closely at how the exercise plans related to frequency and types of exercise to gather information on habits and preferences. Conducting research that pertained to exercise plans during the pandemic was to show the impact of external factors on physical activity. Within the data, there were shifts in the exercise plans when restrictions were lifted and were analyzed to determine the impact on participants.

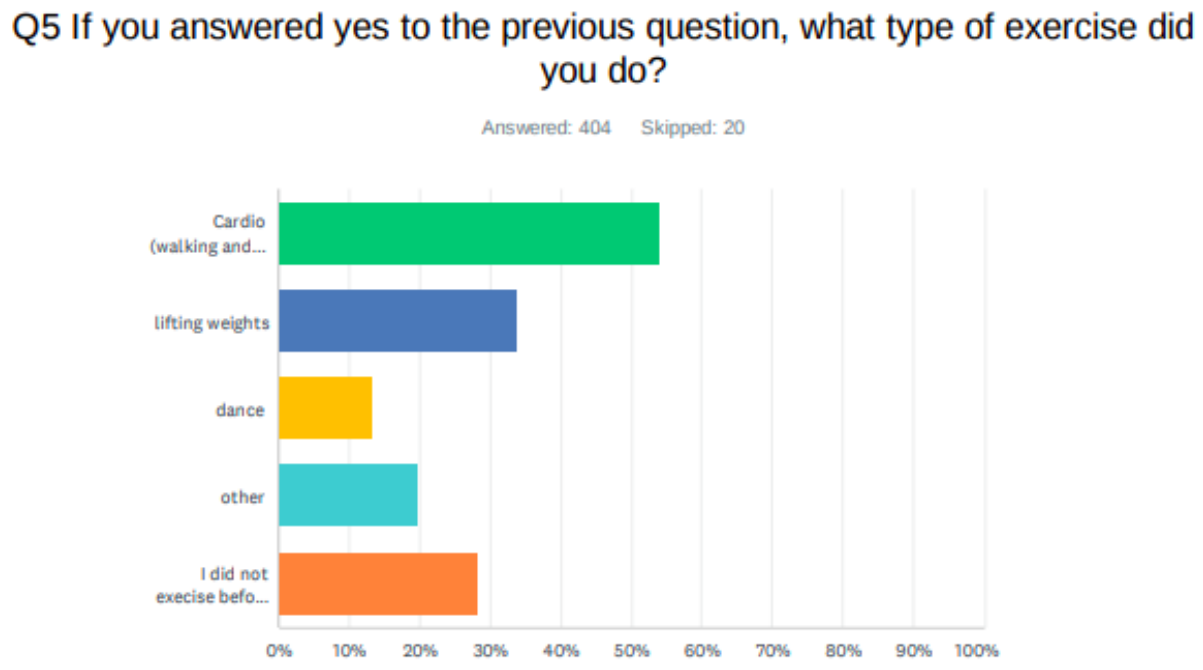
Results

A total of 424 participants took the survey, and 423 consented and said yes to agreeing to take part in this research. One participant said no, and their answer was not included within the data. When asked about gender, 416 participants answered the question, but 8 skipped it. From the responses, 136 males or 32.69% completed the survey. The majority of responses were from females as 263 filled it out equaling 63.22%. Thirteen participants or 3.13% were non-binary and 4 (0.96%) preferred not to answer. When looking at the age of the participants, three were not valid and 12 preferred not to answer or left their answer blank. Thirty-four participants were 18 years old, 69 were 19 years old, 76 were 20 years old, 131 were 21 years old, 60 were 22 years old, 22 were 23 years old, and 17 were 24 years old or older.



Question 4 was "Did you exercise before the pandemic started?" A total of 404 participants answered the question, and 20 skipped it. From those who answered, 286 participants or 70.79% said they were exercising before the pandemic. One hundred fifteen or 28.47% said they did not exercise before the pandemic. Three or 0.74% said this question did not apply to them. With question 5, "If you answered yes to the previous question, what type of exercise did you do?" participants were allowed to select more than answer. Four hundred four participants answered the question, but 20 skipped it. Results do not indicate whether the individuals who skipped question 5 are the same individuals who skipped the previous questions as well. Two hundred eighteen participants or 53.96% said that they did cardio before the pandemic which included walking and jogging. One hundred thirty-six people or 33.66% said that they lifted weights. Fifty-three participants or 13.12% danced as their form of exercise. Eighty people (19.80%) said they did a different form of exercise, and 114 (28.22%) said that

they did not exercise before the pandemic. From these responses, participants were then asked about the number of days they exercised. One hundred fifty-seven (37.00%) did not have valid responses. One hundred and eight people exercised 0 days, 32 did 1-2 days, 48 did 3-4 days, 48 did 5-6 days, and 31 exercised 7 days a week before the pandemic.



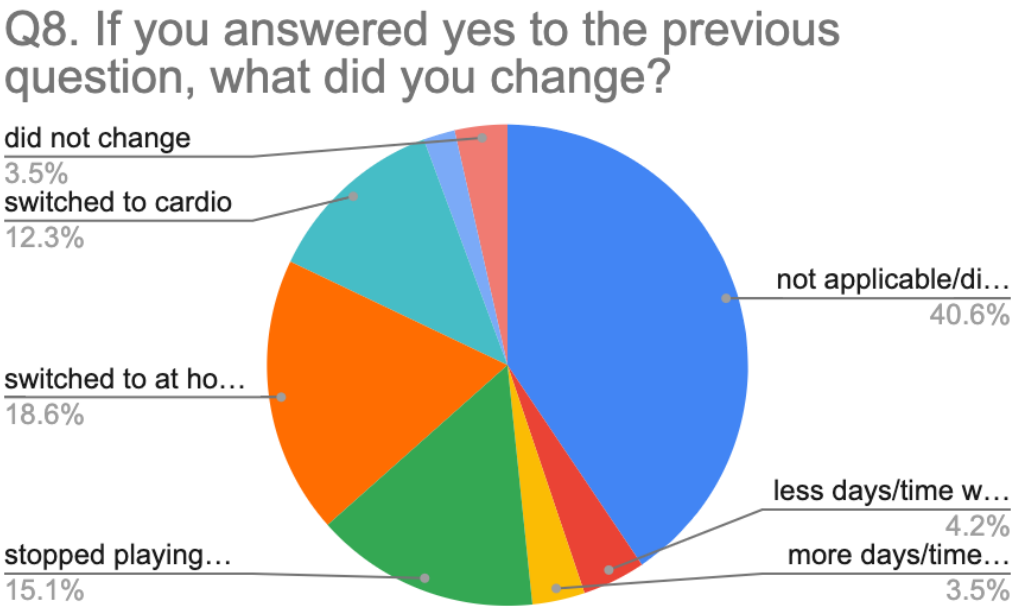
ANSWER CHOICES	RESPONSES	
Cardio (walking and jogging)	53.96%	218
lifting weights	33.66%	136
dance	13.12%	53
other	19.80%	80
I did not execise before the pandemic.	28.22%	114
Total Respondents: 404		

After thinking about what participants did before the pandemic, they were then asked to recall what exercises they did during the pandemic. Question 7 asked participants if they had to change their exercise plan due to the pandemic. Out of the

responses, 379 answered, but 45 skipped this question. Two hundred thirty-two people or 61.21% said that they had to change their exercise plan, 105 people (27.7%) did not have to change their plan, and 42 people (11.08%) said that this question was not applicable to them. From those who said yes, 18 people said they had to work out less days and times, 15 people said they worked out more days, times, or started working out in general, 64 participants had to stop playing sports and going to the gym, 79 people switched to at home workouts, 52 people switched their exercise plan to cardio, nine participants said that due to the pandemic, their consistency varies, and 15 people said the pandemic did not change their exercise plan. From those who answered question eight, 172 said that they did not work out during the pandemic or they chose not applicable as their answer. During the pandemic, 123 participants (29.00%) did not exercise. Sixty-four people (15.1%) exercised between 1-2 days, 52 people (12.3%) exercised between three to four days, 33 people (7.8%) exercised between 5-6 days, and 35 people (8.3%) exercised seven days a week. One hundred seventeen participants (27.6%) did not have valid responses for this question.

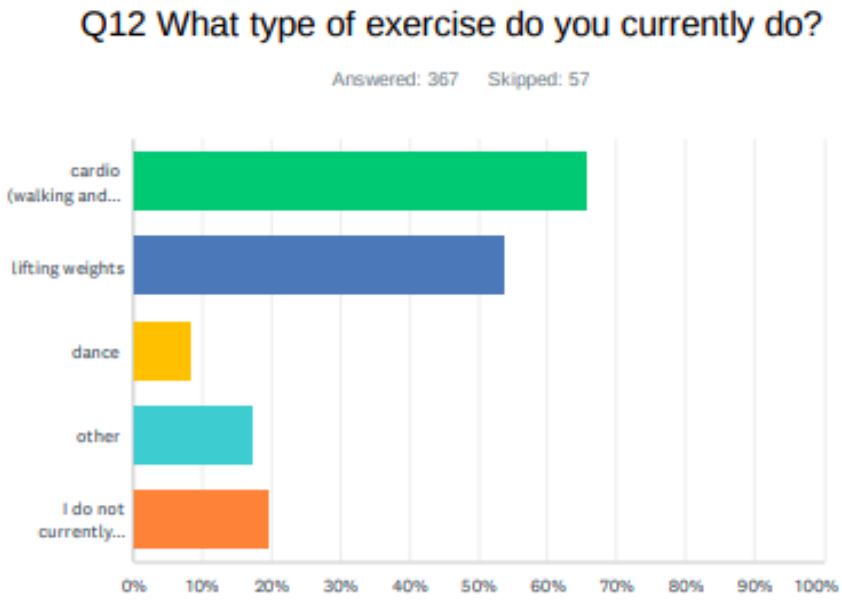
Q8. If you answered yes to the previous question, what did you change?

What Changed?	Number of Participants
not applicable/did not workout during the pandemic	172
less days/time working out	18
more days/time working out/started to workout	15
stopped playing sports/going to the gym	64
switched to at home workouts	79
switched to cardio	52
consistency varied/changed	9
did not change	15



Next, participants were asked to think about what they currently do now that restrictions have decreased. Question 10 asked participants: "Now that the gyms have reopened and restrictions have decreased, have you returned to normal routine?" Three hundred sixty-seven participants answered the question, but 57 skipped it. One hundred eighty-nine people (51.5%) said yes, 128 people (34.88%) said no, and 50 people (13.62%) said that this question was not applicable to them. Question 11 asked how many hours and days people exercise at this moment. Currently, 107 participants (29.0%) do not exercise. Forty-five people (15.1%) exercise between 1-2 days, 62 people (12.3%) exercise between three to four days, 59 people (7.8%) exercise between five to six days, and 42 people (8.3%) exercise seven days a week. One hundred nine participants (27.6%) did not have valid responses to this question. Participants that did not have valid responses were due to the fact that they did not indicate whether the number they submitted was for the number of hours or days that they currently exercise. Question 12

asked participants what type of exercise they currently do; they were allowed to choose more than one answer for this question. Three hundred sixty-seven participants answered this question, but 57 skipped it. Two hundred forty-two people (65.94%) said they currently do cardio which includes walking and jogging, 197 people (53.68%) said they lift weights, 31 people (8.45%) said they dance, and 63 people (17.17%) said they do some other form of exercise. Out of those who answered this question, 73 people (19.89%) said they do not currently exercise.



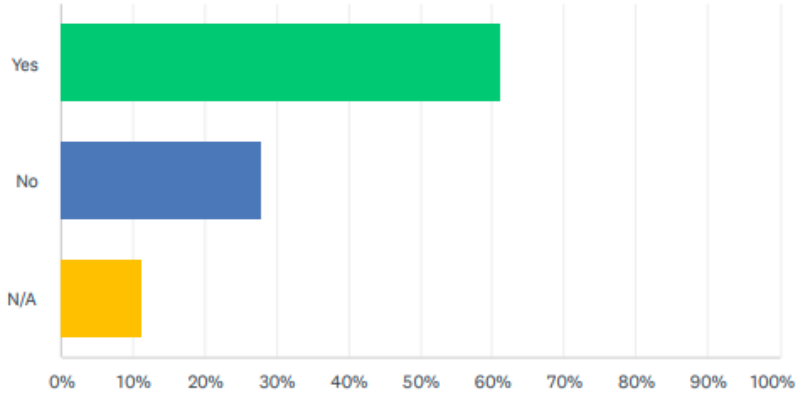
ANSWER CHOICES	RESPONSES	
cardio (walking and jogging)	65.94%	242
lifting weights	53.68%	197
dance	8.45%	31
other	17.17%	63
I do not currently exercise.	19.89%	73
Total Respondents: 367		

Conclusion

In conclusion, the survey conducted among 424 participants showed a significant change of their exercise habits from before, during, and after the COVID-19 pandemic. Participants shared their valuable insights on how the pandemic affected people's exercise plans. The results show noteworthy shifts in physical activity as changes occurred. Before the pandemic, it was reported that a majority of participants (70.79%) said that they did some form of exercise. The results suggest that exercise was common among those who were surveyed. Some of these exercises included cardiovascular exercise, lifting weights, and dancing; this shows that participants engaged in a variety of exercises. However, because of the pandemic, it was reported that 61.21% of participants noted that there was a change in their exercise. Because of the restrictions, many people switched to at-home workouts. A decrease in working out in a gym and playing sports also happened due to the pandemic lockdown and lack of accessibility. One major prevention to exercising was the fact that people had to socially distance themselves from others.

Q7 Did you have to change your exercise plan because of the pandemic?

Answered: 379 Skipped: 45



ANSWER CHOICES	RESPONSES	
Yes	61.21%	232
No	27.70%	105
N/A	11.08%	42
TOTAL		379

There were many challenges during the pandemic, but 51.1% found a way to return to their prior routines before the pandemic started. This also means that 34.88% said that their routines did not go back to "normal." This indicates that the pandemic has a major effect on exercise behavior. The 34.88% of the participants that did not go back to their exercise routines directs that one hypothesis could be that a portion of participants found a new exercise plan during the pandemic and continued with it once restrictions were slowly going away. The assertion is proven by question 12 which asks what type of exercise routine participants currently do. Pre-Pandemic, participants preferred to do different types of exercise compared to the type of exercises that they choose to do now.

It is apparent that there is a shift from exercise preferences since the onset of the COVID-19 pandemic. The results show that participants emphasized cardio and weight training both prior to the COVID-19 pandemic and currently. The data indicates that 52 participants (13.72%) shifted to a form of cardio exercise. The likely reason for individuals switching their exercise plan was to be in an environment away from other people. Participants had favored more diverse selections prior to the pandemic. Currently, participants have altered that trend due to the factor of the pandemic.

To summarize, findings suggest a correlation between individuals and exercise as there was a significant shift due to the pandemic. External factors like the pandemic and many restrictions influenced the change in exercise habits.

> "The mental and physical health of entire populations has been negatively impacted due to the introduction of several restriction methods. Maintaining a specific physical activity and fitness level is crucial given the pandemic situation. The connection between physical fitness and mental health has recently received growing attention" (Elshaer, 2022, p.1).

Similar to my own survey findings, the article shows the connection of why fewer people exercised during the pandemic. The data from the survey shows the resilience and determination that participants did in order to do physical activity during the pandemic. Results show strategies for how participants exercised despite all the challenges. Therefore, this study may infer that during occasions of uncertainty and lack of access to gyms individuals can exercise and still be physically active multiple times a week. The findings imply that these individuals have determination and adaptable approaches.

Implications for Future Studies

This study could be modified to obtain results from different populations or geographic regions. Additionally, this could be altered for middle school and high school students who participated in either physical education and online or Zoom classes. Alternatively, adults that balanced family and work responsibilities from home could be the participants. As opposed to essential workers who reported to work during the pandemic, their data could be compared to unemployed individuals.

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Appendix A

Survey Questions:

1. I consent to take part in this survey.
    a. Yes
    b. No
2. What gender do you identify as?
    a. Male
    b. Female
    c. Non-binary
    d. Prefer not to answer
3. How old are you?
4. Did you exercise before the pandemic started?
    a. Yes
    b. No
    c. N/A
5. If you answered yes to the previous question, what type of exercise did you do?
    a. Cardio (walking & jogging)
    b. Lifting weights
    c. Dance
    d. Other
    e. I did not exercise before the pandemic.
6. How many hours/days did you exercise before the pandemic? Please write N/A if you did not exercise before the pandemic.

7. Did you have to change your exercise plan because of the pandemic?
    a. Yes
    b. No
    c. N/A
8. If you answered yes to the previous question, what did you change?
9. How many hours/days did you exercise during the pandemic? Please write N/A if you did not exercise during the pandemic
10. Now that the gyms have reopened and restrictions have decreased, have you returned to normal routine?
    a. Yes
    b. No
    c. N/A
11. How many hours/days did you currently exercise? Please write N/A if you do not currently exercise.
12. What type of exercise do you currently do?
    a. Cardio (walking & jogging)
    b. Lifting weights
    c. Dance
    d. Other
    e. I did not exercise before the pandemic.

Appendix B

IRB approved

Student Participation Sheet

Date- Fall 2023

Email- j_gaber@salemstate.edu

Study title: "Changes in Exercise Habits of Adults During the Covid-19 Pandemic"

You are requested to read this form carefully. If you consent to participate in the survey undertaken by Jamie Gaber, then check off the box indicating consent. If you have any questions or are uncertain about anything, you should not check the box until you clarify those concerns.

The purpose of this survey is to see how Covid impacted physical activity. I am also looking at the effects of Covid 19 for physical activity once everything re-opened. This survey is only for Salem State University Students that are over the age of 18 years old. This survey will be completed online using the tool https://www.surveymonkey.com/

My thesis is called "Changes in Exercise Habits of Adults During the Covid-19 Pandemic". It would be helpful if you could take 5 minutes to fill out my survey. The assessment for risks for this survey is low because students will actually gain an understanding of how their physical activity changed or stayed the same due to the pandemic. The data from this study will be used in a statistical analysis comparing the statistics in the survey to see how many hours/days people worked out before, during, and after the pandemic. The proposed benefits outweigh any risk.

This survey is completely anonymous and your answers will only be used within this thesis research. Anonymous data that will not be identified with you might be used in publication. The information you provide will be kept confidential. This study has been approved by the Salem State University Institutional Review Board.

For any questions or concerns, please contact Jamie Gaber.

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For concerns about your treatment as a research participant, please contact:
Institutional Review Board (IRB) Sponsored Programs and Research Administration Salem State University
352 Lafayette Street, Salem, MA 01970
(978) 542-7556 or (978) 542-7177 or irb@salemstate.edu
This research project has been reviewed by the Institutional Review Board at Salem State University in accordance with US Department of Health and Human Services Office of Human Research Protections 45 CFR part 46 and does not constitute approval by the host institution.