8-2023

Assessing Student Participation in Cardio Related Activities While Enrolled in Fitness for Living

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University Honors Capstone

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August 2023

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Abstract

This capstone project investigated student participation in the KINS 1800: *Fitness for Living* course offered in the Health and Kinesiology College at the University of Nebraska at Omaha (UNO). The *Fitness for Living Lab* course aims to educate the students on different types of workouts to encourage the students to try different workouts/exercises throughout the semester long course.

During the spring 2023 semester I administered a 10-item pre and post survey to determine if students would partake in cardio activities that they were exposed to in the *Fitness for Living* cours*e*. Following analysis of the data it was noted that the course was beneficial to those who actively participated in the cardio activities that were embedded in the course.

Keywords: *fitness, cardiovascular activities, cardiovascular exercise*

Background Information

This project was conducted during my final semester during the spring of 2023. The sixteen participants in the project were first- and second-year college students who were enrolled in the course *Fitness for Living.* The course carries three credit hours. The instructor was Mr. Edward Panton, a lecturer. Since the course focuses on exposing the students to different types of workouts/activities, it is mainly set to reinforce the attitude of "being active and exercising is good for you." Almost every day the class met they participated in a variety of exercises. The students also completed online labs using information obtained throughout the workouts, such as heart rate, rating of perceived exertion (RPE), skinfold measurements, etc.

The course began on January 23, 2023, and ended on May 13, 2023. The course met twice per week, once on Monday and once on Wednesday from 10:00 a.m. to 10:50 a.m. During

the semester two surveys were administered. The 10-item pre-survey was administered to sixteen students on February 8, 2023. The post survey was administered on April 5, 2023, and included 13 participants. The ten questions on the survey asked how often the student participated in cardio activities and/or workouts. The survey also included one disposition question regarding how the students 'felt' about cardio. All participants gave verbal confirmation to participate in the project. All data gathered was kept confidential and anonymous.

Introduction

In recent years, especially after the COVID-19 pandemic, the quality and time spent exercising has greatly diminished. It has been noted that COVID-19 had a significant negative impact on the health of individuals, including college students. This can be contributed to two factors: there were already individuals doing minimal activity pre-pandemic and transitory cases caused by the imposition of a confined lifestyle due to the pandemic (Pinho et al., 2020). According to Pinho et al. (2020), "The importance of maintaining in of physical fitness, through the practice of regular physical activity, needs to be better understood in its dimensions so that it can be properly recognized as an activity that is essential for health" because it is an "excellent strategy for its positive effects on cardiovascular, metabolic, immunological, and mental health" (para. 5). Regular physical activity is widely accepted as beneficial for one's cardiovascular health. Frequent cardio exercise is encouraged as part of living a healthy life. Cardio exercise helps with reducing risks of cardiovascular diseases such as strokes, heart attacks, hypertension, and obesity.

Researchers have conducted studies on hormones, such as epinephrine (Epi), norepinephrine (NE), and cortisol (CORT), that are produced while exercising and it has been noted that exercising produces more stress hormones. Acevedo et al., (2007) noted that "NE is

released by sympathetic neurons that elicit circulatory adjustments to exercise intensity" (p. 283). Acevedo et al. (2007) also noted that epi levels will increase mainly from secretion by the adrenal medulla. CORT secretion typically occurs when exercise intensity reaches about 80% of an individual's VO2 max (a measure of the body's ability to use oxygen efficiently) or when exercise is longer than 60 minutes. However, these stress hormones are beneficial. They are a "good" stress that not only makes the body itself healthier but also improves a person's mental state. They provide the body with a negative effect to help the body feel more 'at ease' while exercising at higher intensity levels while mitigating losses felt from other hormones, such as lactate.

Exercise Guidelines

According to the American College of Sports Medicine (ACSM), "all healthy adults aged 18-65 years should participate in moderate intensity aerobic physical activity for a minimum of 30 minutes on five days per week, or vigorous intensity aerobic activity for a minimum of 20 minutes on three days per week" (Physical Activity Guidelines Resources, n.d.). The ACSM also recommended that every adult should perform muscular strength and endurance activities a minimum of twice per week.

The ACSM exercise guidelines are considered a minimum for the average healthy adult to maintain their muscular strength, muscular endurance, and weight. To increase muscular strength and endurance, one would have to go above and beyond these guidelines.

Common Barriers

Research supports the pattern of individuals beginning to change their exercise habits but start falling short when they are faced with barriers that occur in everyday life, such as lack of

time, lack of motivation, and lack of energy. Eventually, individuals quit exercising altogether due to the barriers. Other research suggests that "helping people overcome their perceived barriers has more influence on encouraging people to be physically active than does enhancing perceived benefits of exercise" (Toscos et al., 2011, para. 2).

Overall, the highest reported barrier was a lack of time (Toscos et al., 2011, para. 7). Care-giving duties and a lack of motivation were closely behind the time barrier. Another barrier higher up on the list is a lack of willpower. Unfortunately, some people know that they need to or want to live a healthier lifestyle, but they just cannot seem to get started. In the same way, others start exercising more and dieting properly for a time and start relapsing back to what they were doing before.

Enjoyment

For some people, enjoyment is a must for anything that they want to participate in. If they think they will not enjoy it, then they are likely to avoid the activity. Raedeke (2007) suggested that enjoyment can be essential to "maximizing the psychological benefits of exercise" (p. 106). It is entirely possible that two different individuals will not receive the same benefits from the same exercise specifically because one enjoys doing it and the other does not.

Many people who are constantly active thoroughly enjoy being active and working out all the time. They feel a great sense of pleasure in what they are doing. Enjoyment can stem from the activity itself, the feeling that they are doing something good for their health, or even from being confident about themselves.

Participants

The participants in my project included 16 college students, 10 male and 6 female. Fourteen of the undergraduate participants were first- and second-year students, and two participants were fourth year students. The sixteen participants were enrolled in the same section of KINS 1800*: Fitness for Living* course on UNO Dodge Campus in the Health and Kinesiology building.

Methods

The pre and post surveys were administered to students enrolled in KINS 1800: *Fitness for Living*. I used the online survey program, Qualtrics for data collection. In between the surveys, the participants were provided with information throughout the course that discussed how beneficial cardio activity can be to a person. The topics included in the course were target heart rate, benefits of cardio and resistance training, relaxation techniques, etc. The pre and post survey included were identical and asked the following:

1. How often do you do cardio workouts?
2. What type of cardio workouts do you do?
3. How long do you work out during a cardio session?
4. Where do you do your cardio?
5. What is your favorite cardio activity?
6. Do you have any barriers preventing you from performing cardio activities?
7. Do you use sports as cardio activities?
8. How do you track your activities? (Wearable technology, phone, etc.)

9. How do you measure your progression/maintenance? (Stopwatch, etc.)

10. How do you feel about cardio activities? (Very bad, bad, neutral, good, very good)

The goal for KINS 1800: *Fitness for Living* was to provide the students with more knowledge about how to do exercises properly. The course provided locations of facilities on campus to engage in physical activities. The participants in KINS 1800: *Fitness for Living* were exposed to different types of cardio workouts throughout the semester (i.e., step aerobics, cardio kickboxing, and resistance training, etc.)

Results

Figure 1 depicts how often the 10 (7 in the post-survey data) males in the *Fitness for Living* course participated in cardio workouts (i.e., running, jogging, stairs, etc.), before and after the course content was delivered.

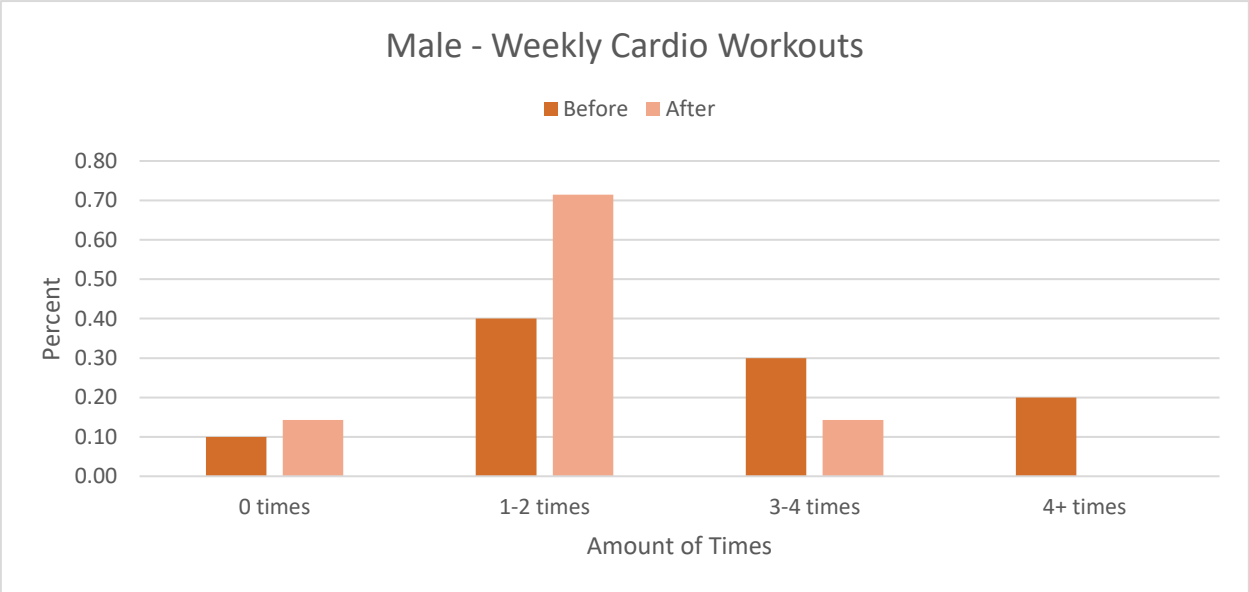


Figure 1: Male weekly cardio workouts before and after the course content.

There was an increase in the percentage of those that did not do cardio workouts at all throughout the week by 4%. The decrease in percentage I believe was due to three of the males not responding to the post survey. There was about a 30% increase for the male participants who completed 1-2 cardio workouts per week. There was a drop in both frequency between 3-4 workouts and 4+ workouts. I believe this decrease was also related to three less responses on the final survey.

Figure 2 depicts how often the 6 females in the *Fitness for Living* course participated in cardio workouts (i.e., running, jogging, stairs, etc.), before and after the course content was delivered.

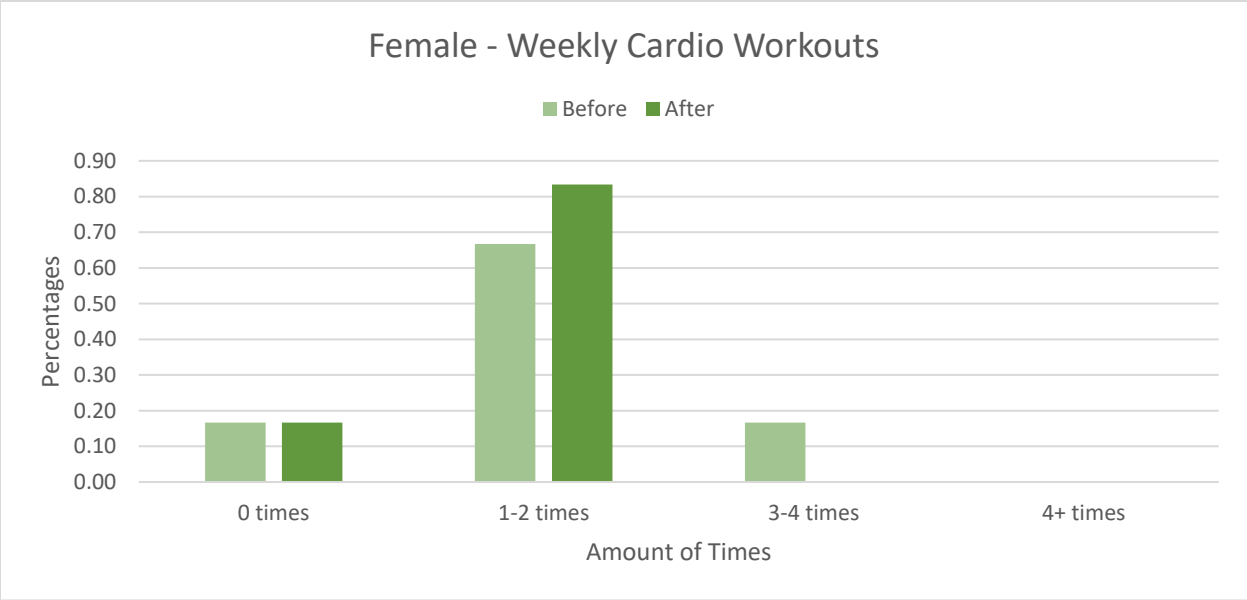


Figure 2: Female weekly cardio workouts before and after the course content.

There was no difference in the number of females that did not participate in cardio workouts per week. There was an increase from 67% to 83% in those that participated in 1-2 cardio workouts per week. There was a decrease from 17% to 0% in those that participated in 3-4 cardio workouts per week.

Figure 3 depicts the main barriers that the male participants noted that prohibited them from participating in cardio activities.

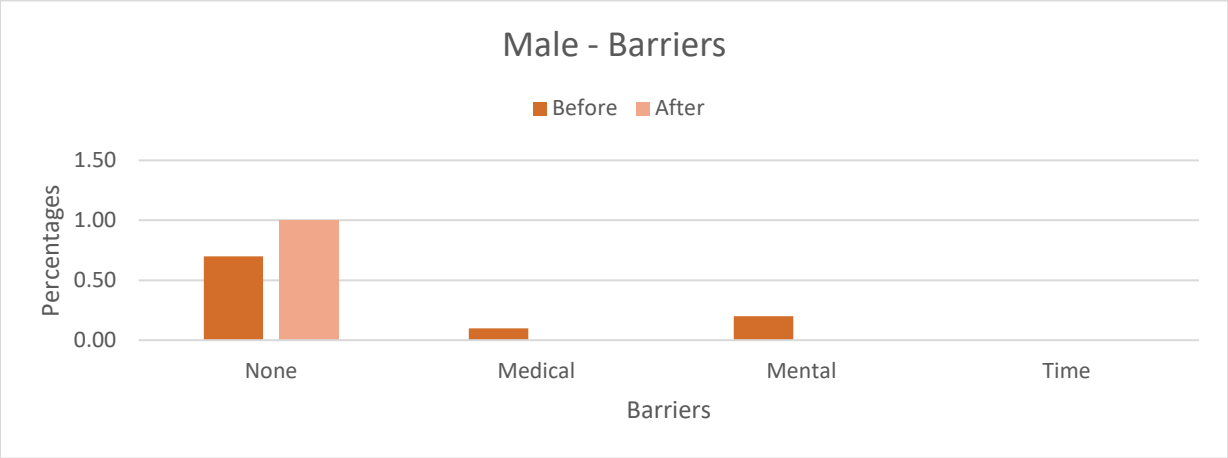


Figure 3: Male barriers before and after the course content

At the beginning of the course, one of the males had an ankle injury that prevented him from participating in activities. The percentage of those that have no barriers preventing them from working out rose to 100% throughout the course.

Figure 4 depicts the main barriers that the female participants had that prohibited them from participating in cardio activities.

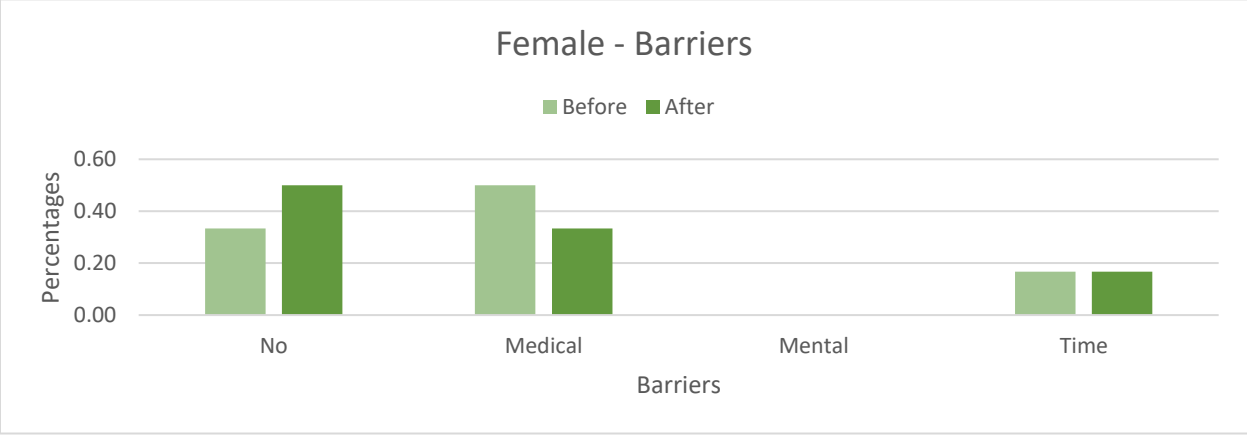
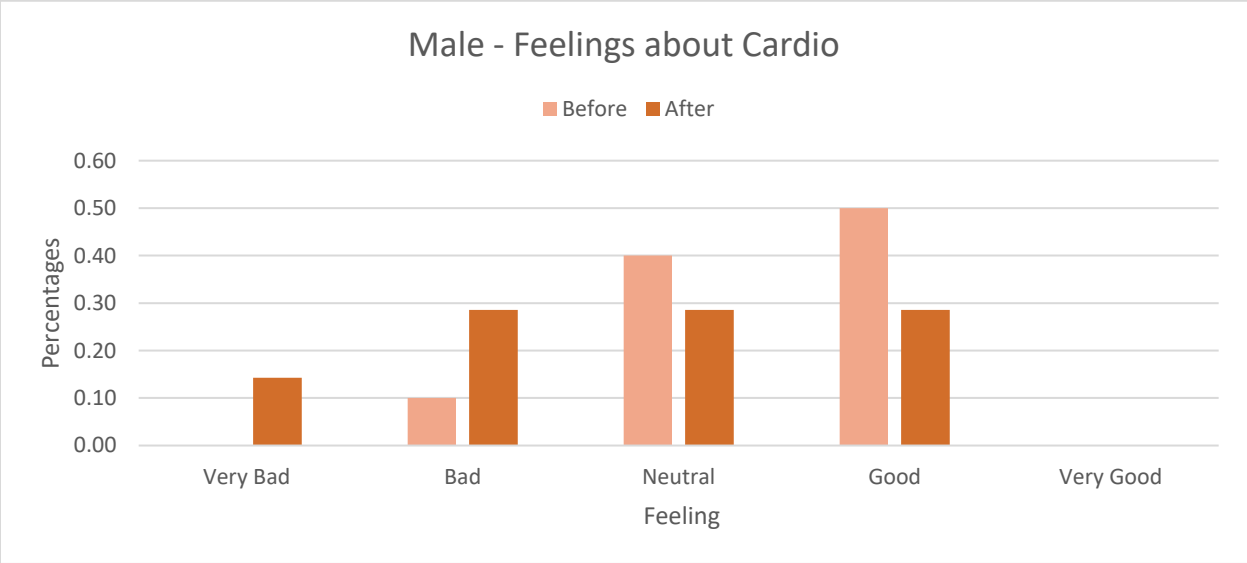


Figure 4: Female barriers before and after the course content

On the pre-survey 33% of females reported that they had no barriers. Medical barriers could include asthma, injuries, etc. As noted in the pre-survey 50% of the females had medical barriers. Following analysis of the surveys there was an improvement in the medical barriers category throughout the course. Following comparison of the pre and post survey the females that indicated they had no barriers increased to 50% and those that had medical barriers went down to 33%.

Figure 5 depicts how the male subjects felt about cardio before and after the course.



Following analysis of the pre and post survey I observed from the data that the way the males felt about cardio trended negatively with the second survey's results. I believe the negative trend could potentially be due to three of the males not participating in the final survey.

Figure 6 depicts how the female subjects felt about cardio before and after the course.

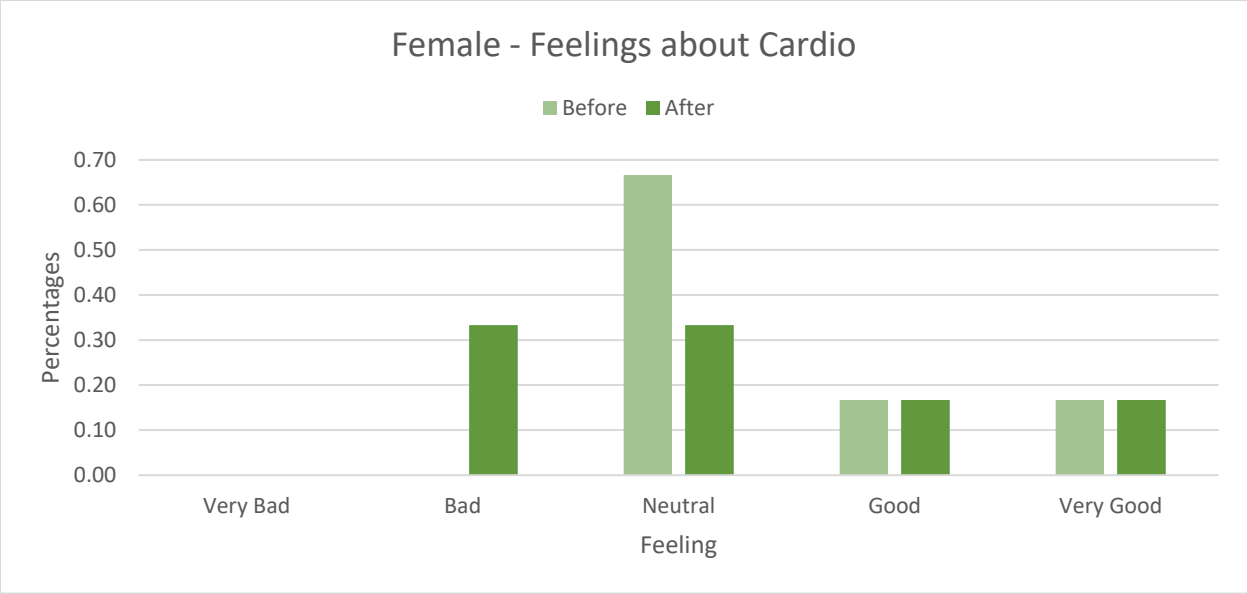


Figure 6: How female subjects felt about cardio activities.

The results of how the females felt about cardio trended in the negative direction. However, the percentage of those that indicated they felt 'good' or 'very good' stayed the same. Half of the females that indicated they felt 'neutral' when it came to working on their cardio. On the post survey the females indicated they felt bad about their participation in cardio.

Figure 7 depicts how both males and females thought about the course and if they believe it encouraged them to participate in more cardio activities/workouts.

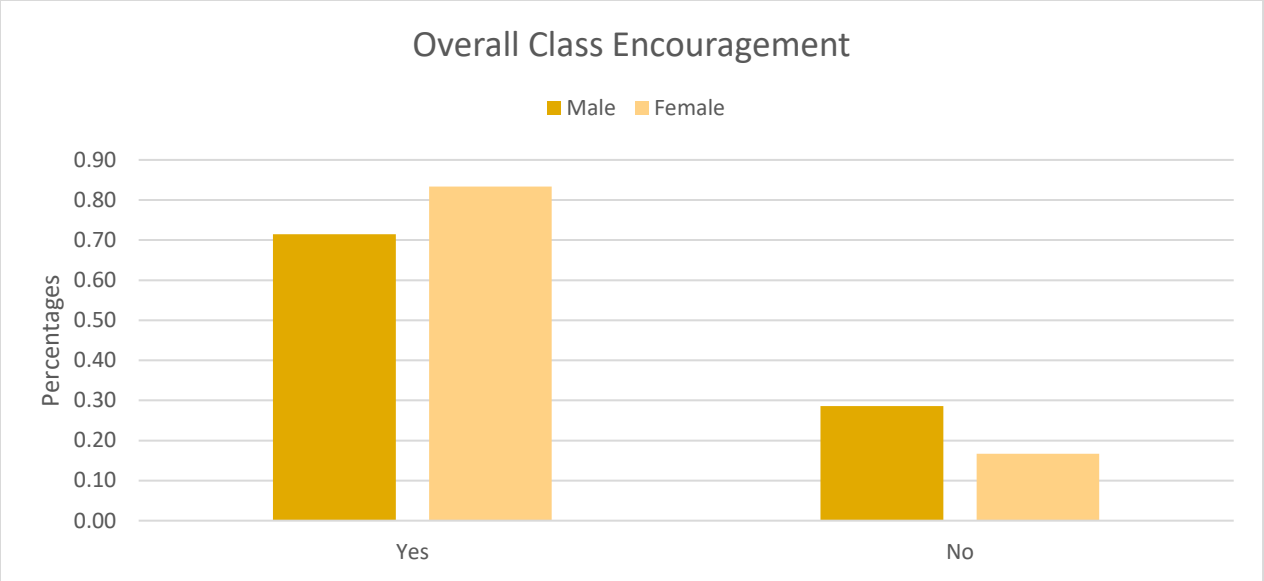


Figure 7 Overall class encouragement.

Over 70% of the males and 80% of females indicated that participation in the *Fitness for Living* course encouraged them to work on their cardio more often.

Discussion

Upon analysis of the pre and post survey I found the most important question that was asked was the final one: "Did the course encourage you to participate in more cardio activities/workouts?". I believe this question provided for me the best way to judge the impact that this course had on the students. Despite other data showing significant increases and decreases, the last question asked the student to consider what this class has done for them. Research has noted that cardio is an incredibly important aspect for a person's overall health and wellbeing. Regular participation in cardio activities can decrease the risk of cardiovascular diseases, improve heart health, improve lung health, improve the entirety of the circulatory system, among countless other bodily functions. All these factors are why the final question was

the most important question to me. Although the question responses showed a negative trend, most of the students indicated that they received a benefit from this course. The benefits may have come in the form of encouragement, information, or something else entirely.

The data noted from the pre and post surveys indicated some significant negative trends. I believe the data was skewed drastically without the three male students' survey responses. All ten males did not respond on the final survey. 70% of the males completed the surveys.

As I reviewed the female participation data, I believe there could be several different factors that could have resulted in the negative trends. The negative trend may have been impacted by the quality of teaching, the activities they performed, the way activities were conducted, etc.

Limitations

The major limitation involved in this study was the small sample size. There were only 16 participants (10 male, 6 female). This data cannot be used to represent the general population or other students taking the same course. Due to this, the data has the potential to show false representations and false relationships with the variables.

Conclusion

In conclusion, there was a significant benefit associated with the *Fitness for Living* course at UNO with the limited sample size. The researcher's hypothesis of the course benefiting the students is supported by the results of the final survey. There was an improvement in the students' willingness to participate in cardio activities. Despite negative trends, the students noted they were more willing to continue working on their cardio as a result of taking the course. Additional research should be done to assess the benefits of this course. If additional research

were to be conducted a larger sample size would be a recommendation. If future studies were conducted the researchers could possibly pinpoint where the negative trends came from in this study. If the negative trends could be identified, then the course could be altered to make it as beneficial to the students as it possibly could be.

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Acknowledgements

Thank you to the students that helped complete this research with their willingness to participate in the surveys.

A very special thank you to my advisors, Dr. Saundra Shillingstad and Mr. Edward Panton, for helping me go through the growing pains throughout the course of this research and for guiding me in the right direction however they could.

Finally, thank you to the University of Nebraska Omaha and the Honors Program.