A research project exploring:

‘The Relationship between Physical Exercise and Academic Performance’

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Declaration

I declare that this dissertation submitted by me, has not been submitted to any other university, institute or college as an exercise for a degree or any other qualification. I further declare that, except where reference is given in the text, it is entirely my own work.

Signed:  Nikita Ganley  

Date:  1/12/2017
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Abstract

This study explored the relationship between physical exercise and academic performance on 3rd year Social Care Practice students in Athlone Institute of Technology. The objectives of this study were to examine the exercise patterns of young people and to explore the impact of exercise on academic performance. The results from the questionnaire found that exercise levels among young people were relatively high. However, the majority of students found the price of gym memberships to be the main barrier to frequent exercise. It was also found that exercise can positively impact stress and motivational levels. The study concluded that while physical exercise may not impact academic performance directly, it does have an indirect influence on helping to improve grades and overall wellbeing of students. It was recommended for Universities to include gym memberships in the college fees, in order to encourage exercise among the students. It was also recommended that they include more activity-based classes in schools as this has been found to improve grades.
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Chapter 1

Introduction to Research Project

Physical activity is defined by the World Health Organisation (2017) as any movement by the body that requires energy. The term ‘physical activity’ is often mistaken with ‘exercise’. Although similar, exercise is a subcategory of physical activity. It is planned, structured and purposeful, such as going to the gym or playing a sport. Physical activity, not only includes exercise, but also includes any bodily movement such as house chores and working (World Health Organisation, 2017). Regular physical activity, such as walking or engaging in sports has substantial benefits for one’s health, by reducing the risk of heart disease, diabetes and obesity. Physical inactivity is also known to be the fourth leading cause of death globally (World Health Organisation, 2017). Studies have shown that physical activity can influence the hippocampus, a structure in the brain that plays a role in memory processing and also the hypothalamus, which controls cognitive abilities (Gomez-Pinilla & Hillman, 2013). When physical activity is performed, dopamine, norepinephrine and serotonin are released. A lack of serotonin in the system can result in a lack of motivation and poor willpower. Therefore, it can be scientifically proven that exercise can result in better concentration levels (Korb & Siegel, 2015).

The aim of this research project is to explore the relationship between physical exercise and academic performance on 3rd year Social Care Practice students in Athlone Institute of Technology. The paper will look at two main objectives. The first objective will explore the exercise trends of students, while the second objective will examine the impact that exercise habits have on their academic performance.

In this study, chapter 2 will look at relevant literature reviews on the subject of exercise and academic performance, and a justification for the research is provided. In chapter 3, the methodology used to collect results will be provided. Next, chapter 4 will disclose the results, while chapter 5 will discuss these results. Finally, the conclusion and recommendations will be provided in chapter 6.
Chapter 2

Literature Review

2.1 Introduction

Physical inactivity is known to be the fourth leading cause of death globally (World Health Organisation, 2017). Daily physical exercise can endorse positive mental health and wellbeing and prevents diseases. Nevertheless, there are still 1 in 5 adults in Ireland physically inactive (Health Service Executive, 2009). This literature review will look at the research collected and analysed on understanding the exercise trends in young people, and the relationship between physical exercise and academic performance.

2.2 Exploring the Exercise Trends in Young People

According to the World Health Organisation (2011), approximately 65% of the world’s population are overweight, with more than 43 million children under five years old obese. In Ireland alone, 1 in 10 children are obese (World Health Organisation, 2011). This section of the review will look at the health benefits associated with physical exercise and the extent of physical exercise being implemented by young people.

2.2.1 Health Benefits

The European Health and Behaviour study titled “Trends in Smoking, Diet, Physical Exercise, and Attitudes toward Health in European University Students from 13 Countries, 1990–2000” carried out by Steptoe, et al (1997) distributed a questionnaire to 9,181 female students and 7,302 male students in 21 countries in Europe. The purpose of this study was to examine the correlation between the health beliefs of physical exercise and the awareness of the risks associated with a lack of physical activity. The survey found that 73.2% men and 68.3% women engaged in a form of physical activity. On the other hand, from a geographical perspective, the results varied between 80% and 60%. As a result of this, the extensive study concluded that physical activity levels are highly variable among young people from different European countries (Steptoe et al., 1997).
Likewise, an extensive research called “Leisure-Time Physical Activity in University Students from 23 Countries: Associations with Health Beliefs, Risk Awareness, and National Economic Development” was accomplished by Haase et al (2004) on 19,298 college students from 23 different countries with differing levels of economic status and culture. A cross-sectional survey explored the levels of physical activity, health beliefs and their knowledge of a healthy lifestyle. Not surprisingly, considering the broad cultures examined, the frequency of physical activity among those surveyed varied from 23% in Western Europe and the United States, to 44% in developing countries. In short, the study uncovered that there is a link between the level of physical activity and the stage of economic development of the country. Such reason for this could perhaps be the lack of easy access to public transport and amenities (Haase et al., 2004).

Interestingly, Biddle and Asare (2011) were curious about the idea that physical activity can play a part in the mental health of children and adolescents. They researched specific articles relating to physical activity and at least one mental illness such as depression, anxiety and self-esteem in children and adolescents. The results found that high levels of physical activity had the potential to reduce depression, however evidence is very limited and further research is needed in this area to come to a definite conclusion.

### 2.2.2 Levels of Physical Exercise

A study called “An Assessment of Sedentary Time among Undergraduate Students at an Urban Canadian University” was carried out by Moulin (2016). Moulin wanted to determine the levels of physical activity in students in an urban University in Canada, and to explore the perceived barriers to engaging in exercise. An impressive total of 335 students participated in an online survey, between the ages of 20 and 24. Analysis of this minor survey showed that one of the main factors enabling the students in exercising was the gym membership being included in their fees. However, perceived barriers included the high academic workload in and out of class time, which is a concern for student’s well-being (Moulin, 2016).

In addition to this, in 2003, “Sports Participation and Health among Adults in Ireland” conducted by the Survey of Sport and Physical Exercise, interviewed a huge sample of 3,080
individuals to determine the levels of sport and leisure time activity in adults in Ireland from a health perspective. According to their wide-ranging participation measure, the survey showed that 78% of adults engaged in a form of exercise in the last 12 months. That left a disappointing 22% completely sedentary (Fahey et al, 2004).

Another key research carried out in Ireland called “Self-Efficacy, Stages of Change and Physical Activity in Irish College Students” examined the link between self-reported exercise and the perceived self-efficacy and stages of change as a result. Patterson et al (2006) believed that the levels of physical activity were in decline and other research could further this belief. 200 students in Dublin were asked to fill up a questionnaire based on their self-efficacy, in relation to physical activity. The analysis of the questionnaire showed that those who engaged in physical activity and who had higher self-efficacy were males. It was also reported that the correlation between exercise and high self-efficacy were more substantial for males than females. Accordingly, the study concluded that self-efficacy was an important factor in physical activity (Patterson et al., 2006).

### 2.3 Examining the Impact of Exercise Habits on Academic Performance

Teaching physical education in schools can help children develop skills and knowledge to lead physically active lifestyles. It can also assist in attaining skills to make physical activity more enjoyable (Department of Health, 2016). As a result, the Irish government promoted the implementation of physical education in schools in recognition of the benefits associated with physical exercise (Department of Education and Skills, 2012). This section will look at how physical education is being implemented and the impact it has on academic performance in young people.

#### 2.3.1 Physical Education

An academic review termed “The Educational Benefits Claimed for Physical Education and School Sport” carried out by Bailey (2009) examined the educational benefits of physical education and school sports in the United Kingdom. Ultimately, the research suggests that physical education can make an impact on the physical, social, affective and cognitive
domains of a young person. Furthermore, the review also concluded that there is some evidence to insinuate that physical activity can improve a young person’s concentration level and thus subliminally further advance their academic performance (Bailey, 2009).

In addition to this, “Effect of Physical Education and Activity Levels on Academic Achievement in Children” was carried out in Texas to see the relationship between the physical education class, and the physical activity on the academic performance on children in middle school. The thought-provoking study was conducted on 214 sixth grade children. The children were randomly enrolled in physical education in the first or second semester, and their academic performance were assessed using grades from four core modules and using standardized test scores. Results showed that those who took part in physical education had similar grades as those who did not take part. As a result, the research concluded that although moderate physical activity does not affect grades, higher grades are associated with vigorous physical activity (Coe et al, 2006).

Equally important, “Improving Academic Performance of School-Age Children by Physical Activity in the Classroom: 1-Year Program Evaluation” conducted by Mullender-Wijnsma, et al (2015). An impressive one year long experiment was carried out in second and third grade classes. The group took part in physically active lessons, while the control group carried out their regular lessons in the classroom. The teachers observed that children’s on-task behaviour was 70%, and the children’s mathematics grades were significantly higher compared to the control group. In conclusion, the experiment successfully showed that the physical activity contributed to the academic performance of the children (Mullender-Wijnsma et al., 2015).

Similarly, “Effect of Active Lessons on Physical Activity, Academic, and Health Outcomes”, by Murtagh and Martin (2015) performed a systematic review of classroom-based physical activity interventions that integrate academic content. Six studies were found that recorded physical activity and reported positive effects of intervention lessons. In addition, they also demonstrated that teachers and students were happy with the programmes. For these reasons,
the systematic review concluded that physically active academic lessons increase physical activity levels and benefits the person’s academic performance (Murtagh & Martin, 2015).

2.3.2 Academic Performance and Motivation

Donnelly et al (2016) conducted a systematic review known as “Physical Activity, Fitness, Cognitive Function, and Academic Achievement in Children” in the United States in order to understand the relation between physical activity and the academic achievements in children aged between 5 and 13 years old. The authors analysed articles relating to physical activity and academic achievement. The systematic review found that there was some evidence to suggest that physical activity positivity helped the cognitive processes in the brain. However, in spite of this, the authors concluded that the evidence found to suggest that physical activity has a direct relationship with a higher academic performance was insufficient, and more research is necessary in this area (Donnelly et al., 2016).

Next to importance, a comprehensive survey was performed on French students titled “French College Students' Sports Practice and Its Relations with Stress, Coping Strategies and Academic Success”. Three different questionnaires were given to 1,071 1st year French students in order to determine if their level of physical activity had an influence on their stress levels and their academic success. The level of physical activity was categorized into ‘rare’, ‘regular’ and ‘intensive’. Results from this study suggested that students who engaged in intensive physical activity had lower levels of stress and higher levels of self-efficacy. Despite this, the relationships between levels of physical activity and academic success were not significant enough between the groups to make a strong judgement (Décamps et al., 2012).

Lastly, Mansour Sharifzadeh (2013) conducted a survey to discover if exercise can make you more productive, with the appropriately named title “Does Fitness and Exercises Increase Productivity? Assessing Health, Fitness and Productivity Relationship”. Sharifzadeh surveyed 355 participants, mostly males, in Cal Poly College of Business alumni. The vast majority of participants (43.3%) said they exercised 2 to 3 times a week on average.
However, a large proportion responded negatively to exercise affecting their work performance, but still reported a high work performance level (Sharifzadeh, 2013).

Notably, self-determination theory (SDT) is a psychological theory that looks at motivated behaviour in terms of being automatic and controlled (Deci & Ryan, 2011). SDT differentiates between extrinsic and intrinsic types of motivation. Intrinsic motivation is doing an activity in order to gain satisfaction and experience feelings of joy and excitement. Extrinsic motivation is doing an activity in order to gain social reward and avoid disapproval. Some of these motives are seen as controlled forms of motivation. Other forms of controlled extrinsic motivation are based on introjected regulation, where the behaviour is carried out in order to gain self-approval. Introjected avoidance regulation is showing more negative effects, such as engaging less in school and performing poorly (Teixeira et al, 2012).

**2.4 Conclusion**

Physical activity is at a low among young people, and their awareness of the consequences of lack of exercise is alarmingly scarce. This is leading to an increase in obesity among students. There is evidence that physical activity has an indirect link to a higher academic performance, particularly when the physical activity is classroom-based. Additionally, research on the relationships between physical activity and mental health, self-efficacy and stress have all been looked at. However, there is a distinct lack of research carried out in Ireland, particularly in the midlands. As part of my research, I plan to explore the exercise habits of 3rd year students in Athlone Institute of Technology. I will then look at the consequence that these exercise habits on the student’s academic life. While other researchers may have carried out studies similar to this, my research fills a void in the current understanding of this relationship between physical activity and academia.
Chapter 3

Methodology

3.1 Introduction

In this chapter, the methodology of the research project will be examined. Two types of methods of research, qualitative and quantitative, will be defined and the proposed methods will be justified. The process will be examined, followed by the participants being surveyed and the pilot questionnaire being trialled. Finally, ethics and limitations of the research project will be observed, and an insight into the method of analysis will be presented.

3.2 Methods of research

A qualitative method of research emphasises quality. Bernard (2006) states that a qualitative method of research focuses on themes and how they relate to each other. This method can often look at hidden messages behind the text and looks for deeper or multiple meanings in a text (Bernard, 2006). This method of research is said to observe and interpret an experience with the aim of creating a theory through interviews and focus groups (Newman & Ridenour, 1998).

In contrast, a quantitative method emphasis quantity. Bernard (2006) observes that this method of research involves turning data collected in words, into numbers (Bernard, 2006). It gathers measureable data to uncover patterns using predesigned questionnaires. It is believed that this method is used to confirm and disprove a given hypothesis (Newman & Ridenour, 1998).

3.3 Proposed Method

A quantitative method of research was used to collect data in the form of a structured, predesigned questionnaire, as this gave the measureable data needed to suit the objectives. A questionnaire allowed a large amount of information to be collected from a large group in a short time frame. It was structured and designed to gather the necessary data neutrally that was required for the proposed objectives.
3.4 Participants

Approximately 25 questionnaires were administered among 3\textsuperscript{rd} year Social Care Practice class in Athlone Institute of Technology. It was believed that this sample group would give a more comprehensive outlook and also be the most honest, as they knew the importance of the accuracy of the data that was being collected. No specific age or gender was needed for this research. Approximately 25 questionnaires were administered as that was the required sample for this research project.

3.5 Procedure

A pilot questionnaire was administered to 4 sample participants. This was carried out in order to receive critical feedback of the questionnaire. It was important to ensure that all questions being asked were relevant to the topic and easy to understand and answer, and to also limit any bias from the researcher. After receiving the necessary feedback from the sample group, the questionnaire was redesigned. Questions were given a Likert scale to make it easier to answer. The questionnaire was administered during the last week of October, during the 3\textsuperscript{rd} year’s class. An email was sent to the relevant lecturer asking permission to interrupt their class briefly. Data collected was analysed and stored away appropriately. Questions 1 to 2 gathered general information on the chosen participants. Questions 3 to 8 gathered information about the participant’s exercising patterns, which satisfied the first objective. Finally, Questions 9 to 16 gained insight into their academic performance, which fulfilled objective two.

3.6 Ethical Considerations

An informed consent letter was administered to the participants along with the questionnaires. The participants were informed of the benefits of the project, and ensured that all data collected would be destroyed on the 30\textsuperscript{th} September 2018. All participants were asked to tick the informed consent box before completing the questionnaire. This was to ensure that the participant’s anonymity was preserved and the confidentiality of the answers were maintained throughout the collection, storage and publication of this research project.
3.7 Limitations

There were some limitations with carrying out this research project. There was a time
constraint of 10 weeks to carry out the project, which didn’t leave much time to analyse the
data extensively. The chosen sample group was limited to 20 participants, and could only be
in Athlone Institute of Technology, which was a small number to base solid research results
on. There was also the risk that respondents would not be honest, therefore, 3rd years were
chosen as the sample group as they understand the importance of the accuracy of the data
collected. Nonetheless, all the information gathered was valid.

3.8 Method of Statistical Data Analysis

Responses collected from the sample group were analysed statistically using a quantitative
method of analysis. Data was analysed using software known as ‘SPSS’. Once the
information was collected and analysed, the data was illustrated visually through graphs
using Microsoft Excel, in order to enhance the understanding of the data.

3.9 Conclusion

In this chapter, we looked at the methodology that was used to carry out this research project.
After careful and broad research into the data needed to analyse the impact physical exercise
has on academia, it was concluded that the quantitative method of research was the most
suited method to use and satisfied the aims and objectives of this study. The pilot
questionnaire was administered and helped to improve the questions before it was given out
to the sample group.
Chapter 4

Results

4.1 Introduction

Approximately 25 questionnaires were handed out among 3rd year Social Care Practice students. After eliminating any spoiled questionnaires, 20 questionnaires were filled out correctly and collected successfully, in accordance with the course guidelines. The questionnaires were statistically analysed using SPSS Software. The results from the questionnaires are presented below and illustrated using graphs.

4.2 Participation Rate

The response rate to the questionnaire was good, with everyone willing to answer the questions with honesty and maturity. The participants, a total of 15 females and 5 males, varied in ages, with 15% being aged between 17-19 years old, 55% of participants were between 20-24 years old, 5% were aged between 24-30 years old and 15% were over 30 years old.

4.3 Results

4.3.1 Exploring the Exercise Trends in Young People

When asked what type of exercise the participants engaged in, in question 3, 45% of participants used walking as a form of exercise, with 30% stating they attended the gym. Furthermore, 10% of participants ran as a form of exercise and 10% stated other, which included activities such as swimming and horse riding, and 5% engaged in a team sport.

![Figure 1: Type of Exercise Engaged In](image)
When question 4 asked how often they engaged in physical exercise, 45% said they exercised three times a week and 40% of participants exercised once a week. Moreover, 10% said they exercised twice a day and 5% stated they exercised once a day.

![Figure 2: Frequency in Engagement in Exercise](image)

When question 5 asked what their main reason for engaging in exercise was, 45% of participants said it was to maintain good mental health, while 30% said it was to keep fit. Along with that, 20% of participants exercise in order to lose weight while 5% do it for the love of exercise.

Participants were asked how often did they walk or cycle to college for question 6. 55% of participants said that they walk or cycle to college every day, while 15% said that they walk to college twice a week and 30% stated they never walk or cycle to college.

![Figure 3: Frequency in Walking/Cycling to College](image)
For question 7, 40% of participants said that the high price of gym memberships are a barrier in them engaging in exercise, while 20% said it was due to a high academic workload. Of the participants asked, 30% stated that lack of time was a barrier to them exercising, and 10% said they have no interest in exercising.

For question 8, participants were asked to rate their self-efficacy out of a scale from 1 to 5, with 1 being low and 5 being high. 5% rated their self-efficacy as 1, 10% rated it as 2 and 40% rated it 3. Additionally, 30% rated their self-efficacy as 4 and 15% rated it 5.
### 4.3.2 Examining the Impact of Exercise Habits on Academic Performance

In Question 9, during exam time, 20% of participants stated that they engage in exercise an hour a day. Furthermore, 20% exercise twice a day while 50% exercise two days a week and 10% exercise 4 days a week.

Question 10 asked participants to rate their performance in class after exercising on a scale from 1 to 5, 1 being low and 5 being high. 10% of participants rated their performance as 2. 20% of participants rated their performance as 3 while 40% rated it as 4 and 30% rated their performance as 5.

![Figure 6: Performance in Class After Exercising](image)

Question 11 asked for the average grade, with 15% of participants having an average grade of 75% to 85%. Of those asked, 65% of participants have an average grade of 60% to 74% and 20% have a grade of 50% to 59%.

Question 12 asked participants if they agreed that exercising has an impact on their grades. 20% of participants strongly agreed and 60% agreed. Furthermore, 10% of participants felt neutral about the statement, while 5% disagreed and another 5% strongly disagreed.
Participants responded to question 13, which asked how often they study, with 20% stating as much as possible. 65% of participants said that they study a few hours a week, while 15% said they only study at exam time.

Participants were asked in question 14 if they were more motivated to study after exercising. To this statement, 5% of participants strongly agreed and 75% agreed. Additionally, 15% of participants felt neutral towards this statement, while 5% disagreed.
Question 15 asked participants to rate how stressed they were at exam time on a scale from 1 to 5, with 1 being not stressed and 5 being very stressed, 10% of participants rated their stress as a 2. Along with this, 5% of participants rated their stress as 3, 30% rated it as a 4 and 55% of participants rated their stress at exam time as a 5.

Finally, question 16 asked participants if the stress was reduced during exam time after exercising. Of those asked, 55% strongly agreed that their stress was reduced, while 10% felt neutral to this statement and 5% disagreed.

![Figure 9: Stress Relief After Exercising](image)

4.4 Conclusion

A 100% response rate of 20 participants was achieved in accordance with course guidelines. All the results were recorded using SPSS software and illustrated using various graphs and charts. Overall, the results varied greatly, with a generally positive response rate towards the positive impact of exercise and academic performance. The results will be examined more extensively in the next chapter.
Chapter 5

Discussion

5.1 Introduction

The results collected from the questionnaire have been recorded and illustrated in the previous chapter. The importance of these results will now be discussed, in reference to the research gathered in the literature review. An evaluation of the data gathering method will also be included, and limitations of the research project will be reflected.

5.2 Exploring the Exercise Trends in Young People

A high level of exercise was reported from participants, with all engaging in some form of physical exercise; the majority of them using walking as one. This conflicts with findings from Fahey et al (2004) who found a proportion of adults (22%) completely sedentary. While Fahey’s research was conducted on a much wider scale of 3,080 participants, this project’s findings may suggest that a new generation of young people are becoming more active compared to those that were surveyed 13 years ago. The findings also indicate that perhaps more people are viewing walking as a form of exercise than they did 13 years ago.

The vast majority of participants surveyed stated that the main barrier stopping them from engaging in more exercise was the price of gym memberships. This supports the research of Moulin (2016) who found that one of the main factors that enabled Canadian students to exercise was the gym memberships being included in the student’s college fees. It is plausible to assume that if more universities included a gym membership for every student in their fees, the level of physical exercise among young people would increase, improving their mental health and academic performance. Another barrier to exercise reported from students was the extensive academic workload, which also supports Moulin’s (2016) research, who found that academic workload can impede a person’s desire to exercise.

Results from the questionnaire showed that the majority of participants rated their self-efficacy in the middle, and very few rated it high. These results conflict with findings from
Patterson et al (2006) who found a correlation between high levels of physical exercise and higher levels of self-efficacy, particularly in males. Perhaps the difference in results is due to the fact that there were more female participants than males in the current research, due to the higher ratio of females to males participating in Social Care Practice.

Interestingly, the majority of participants reported their reasoning for exercise was to maintain good mental health. This figure is supported by research carried out by Biddle and Asare (2011), who researched the idea that physical exercise has the potential to reduce depression. While their research was not conclusive, it is interesting to see many young people trying to take care of their mental health; potentially a positive step towards reducing the number of young people suffering from mental health disorders while decreasing the suicide rate among young people.

5.3 Examining the Impact of Exercise Habits on Academic Performance

The bulk of participants rated their performance in class after engaging in exercise as high. These results support those of Donnelly et al (2016) who found evidence to suggest that physical activity positively impacts the cognitive processes in the brain. This can be seen through scientific evidence discovered by neurologists. Studies have shown that physical activity can influence the hippocampus, a structure in the brain that plays a role in memory processing, and also the hypothalamus, which controls cognitive abilities (Gomez-Pinilla & Hillman, 2013).

The most common frequency of exercise recorded by participants during exam time was two days a week, with very few participants engaging in vigorous exercise. According to Décamps et al (2012), those who engage in intensive physical exercise have lower levels of stress and higher levels of self-efficacy. As participants in this research project also reported a lower level of self-efficacy, the results support Décamps et al research. In regards to stress levels, participants rated their stress levels predominantly very high during exam time, and strongly agreed that their stress levels are reduced significantly after engaging in exercise. This figure also supports Décamps et al research, in which stress levels are reduced by physical exercise. It may be assumed that if students engaged in more intensive exercise,
particularly during exam time, their stress levels would be lowered, which in turn would increase their academic performance.

A high percentage of participants agreed that exercise can have an impact on their grades. This result supports that of Mullender-Wijnsma et al (2015) who conducted an experiment on school children and how their academic performance can be improved through physical activity. The experiment concluded that physical activity contributed to the academic performance of the children. Mullender-Wijnsma et al explained that this was due to the effect that physical exercise and cognitive engagement has on the cognitive functioning. While the experiment was conducted on young children, it can be assumed that these findings may also represent young adults in third level. The experiment also suggest that those who engage in physical exercise tend to perform better academically, leading to better grades. This assumption can be supported by a high grade being reported by participants who had a tendency to engage in exercise.

Unexpectedly, most of the participants in the questionnaire stated that they study a few hours a week, with a worrying amount of students only studying at exam time, and the majority agreeing that they were more motivated to study after exercising. This conflicts with research carried out on predominantly males, by Sharifzadeh (2013) who found little correlation between physical exercise and productivity. Perhaps this conflict was due to the ratio of females to males participating in both questionnaires. While it may very well be that Sharifzadeh’s survey was more extensive than this research project, this may suggest that females and males productivity levels differ, particularly under the influence of exercise, and more extensive research is needed in this area.

5.4 Evaluation of Method

The data gathering information used in these research project, a questionnaire, gathered the data required to satisfy the objectives. The process of using the questionnaire was very effective and accumulated the necessary information needed quickly and efficiently. On the down-side, any queries that participants had regarding the questionnaire, could not easily be explained. Any bias that may have easily appeared in the questionnaire was easily rectified.
by carrying out the pilot questionnaire. While the research carried out was authentic, it may not have been as accurate as the research carried out by others in the literature review, as this survey was limited to using 20 participants, in accordance to course guidelines.

5.5 Conclusion

In conclusion, it can be seen that there are many results from the questionnaire which is similar to research carried out by other authors in the literature review. However, there is also some conflicting results, particularly in the area of the impact exercise has on academic performance. These conflicting results may be due to the more extensive research carried out in the literature review, compared to the 20 participants that this research was limited to. In general, there was a positive response towards the impact of exercise on academic performance. The results from the questionnaire were important as they can give social care students an understanding of the effects of exercise. It is important for these students to be aware of how to reduce their stress levels, particularly in challenging situations that may occur in their jobs, and how to be more productive and alert in the workplace.

From the discussion, the importance of carrying out this research can be seen, as there was a distinct lack of evidence in the literature review on either side to prove that exercise has a significant impact on academic performance. Through the discussion, striking evidence was found to support the theory that exercise impacts academic performance, particularly indirectly through reducing stress levels and improving concentration and motivation in classes.
Chapter 6

Conclusion and Recommendations

The aim of this research project was to explore the relationship between physical exercise and academic performance on 3rd year Social Care Practice students in Athlone Institute of Technology. The first objective examined the exercising trends in students, while the second objective explored the impact that exercise may have on academic performance. As according to course guidelines, 20 questionnaires were collected from the 3rd year Social Care Practice class, and the results were statistically analysed and illustrated with graphs. The literature review examined various research carried out on exercise and academic performance from many angles, and this research was compared to the results gathered from the questionnaires.

From the discussion, we saw many comparisons between the literature review and the results. While there was conflicting evidence as to the actual level that exercise can impact academic performance, regarding intensity and type of exercise, it can be seen that there is evidence to suggest that exercise can positively affect motivational levels and stress levels, which in turn can improve academic performance.

We saw that one of the main barriers for students to exercise was the high cost of gym memberships. It could be recommended that if universities included gym memberships in fees, as Moulin (2016) looked at, then perhaps more young people would exercise, reducing the ever-rising risk of obesity in young people and potentially improve their academic performance. Another recommendation that could be suggested is to include more physically active-based modules in class as this can also be seen to improve concentration and increase grades, as noticed from the research conducted by Mullender-Wijnsma, et al (2015).

In conclusion, we can see that while exercise may not have a direct impact on improving grades, engaging in physical exercise can indirectly improve academic performance by positively impacting on the mental state of the individual and their productivity level.
References


Appendix 1

Consent Form

An exploration into the relationship between physical exercise and academic performance

As part of my final year project in BA Social Care Practice, I am researching the exercise habits of 3rd year social care students and the impact it may have on their academic performance. To do this, I am administering approximately 25 questionnaires in your class and I would appreciate your participation. Before you decide whether to take part or not, it is vital that you understand why this research is being done and what is being asked of you.

Regular physical activity, such as walking or engaging in sports, has substantial benefits for one’s health, by reducing the risk of heart disease, diabetes and obesity. Physical activity is known to be the fourth leading cause of death globally (World Health Organisation, 2017). While research has been carried out on the effects of physical exercise on anxiety and depression, and has been shown to reduce their effects (Biddle and Asare, 2011), little research has been carried out on the effect physical exercise has on one’s academic performance. This is what I wish to find out.

You can withdraw yourself from participating at any stage throughout the questionnaire. The information that you provide is for research purposes only and is confidential. Please tick the informed consent box, and do not leave any identifying marks on the questionnaire. Your anonymity will be ensured throughout the collection, storage and publication of this research project. All data collected will be destroyed on the 30th September 2018.

Thank you for taking the time to complete this questionnaire for the purpose of my final year project.

Kind Regards,

Nikita Ganley
Appendix 2

Pilot Questionnaire

Please tick here to indicate your informed consent to participate in this study □

1. Sex?
   Male □  Female □

2. Age bracket?
   17-19 □ 20-24 □ 24-30 □ 30+ □

   Objective 1: Exercise Trends of Young People

3. What type of exercise do you engage in?
   Gym □  Sport □  Walking □  Running □  Cycling □

4. How often do you play engage in physical activity?
   Once a day □  Twice a day □  Three times a week □  Once a week □  Less □

5. When time of the day do you exercise?
   Morning □  Afternoon □  Evening □  Night □

6. What is your main reason for exercising?
   To keep fit □  To lose weight □  For good mental health □  For the love of exercise □

7. How often do you walk to college?
   Every day □  Twice a week □  Once a week □  Never □

8. Who do you exercise with?
   Alone □  With family □  With friends □
9. What would be the main factor stopping you from exercising?

Price of memberships □ Too much academic workload □ Lack of time □ No interest □

**Objective 2: Impact Exercise Has On Academic Performance**

10. How often will you exercise during in exam time?

An hour a day □ Twice a day □ Two days a week □ 4 days a week □ Everyday □

11. How many hours sleep do you get at night?

9-10 hours □ 7-8 hours □ 4-6 hours □ Less than 4 hours □

12. On a scale of 1-5, how better do you perform in class after exercising?

1 □ 2 □ 3 □ 4 □ 5 □

13. What is your average grade?

Above 85 □ 75-84 □ 60-74 □ 50-59 □ Less than 50 □

14. How often do you miss lectures?

Never □ Once a month □ One a week □ One a day □ More often □

15. What is your reasoning for missing lectures?

Illness □ Too tired □ Out the night before □ No interest □ Other □

16. How often do you study?

As much as possible □ 2 hours a day □ A few hours a week □ Only at exam time □

17. What is your plan once you graduate from your Social Care degree?

Get a job in Social Care □ Further your studies □ Get a masters □ Other □
Appendix 3
Final Questionnaire

Please tick here to indicate your informed consent to participate in this study □

1. Sex:
   Male □ Female □

2. Age bracket:
   17-19 □ 20-24 □ 24-30 □ 30+ □

3. What type of exercise do you engage in?
   Gym □ Sport □ Walking □ Running □ Cycling □ Other □
   If other, please specify____________________________________

4. How often do you engage in physical activity?
   Once a day □ Twice a day □ Three times a week □ Once a week □ Less □

5. What is your main reason for exercising?
   To keep fit □ To lose weight □ Good mental health □ Love of exercise□

6. How often do you walk/cycle to college?
   Every day □ Twice a week □ Once a week □ Never □

7. What would be the main factor stopping you from exercising?
   Price of memberships □ Academic workload □ Lack of time □ No interest □

8. On a scale of 1-5, how would you measure your self-efficacy? (1 being low, 5 being high)
   (Self-efficacy is your confidence in your own ability to achieve results)
   1 □ 2 □ 3 □ 4 □ 5 □
9. How often will you exercise during exam time?
   An hour a day □ Twice a day □ Two days a week □ 4 days a week □ Everyday □

10. On a scale of 1-5, how better do you think you perform in class after exercising (1 meaning poor, 5 meaning good)?
   1 □  2 □  3 □  4 □  5 □

11. What is your average grade?
    Above 85% □  75-85% □  60-75% □  50-60% □  Less than 50% □

12. Do you agree that exercising has an impact on your grades?
    Strongly agree □  Agree □  Neutral □  Disagree □  Strongly disagree □

13. How often do you study?
    As much as possible □  2 hours a day □  A few hours a week □  At exam time □

14. Are you more motivated to study after you have exercise?
    Strongly agree □  Agree □  Neutral □  Disagree □  Strongly disagree □

15. On a scale of 1-5, how stressed do you become during exam time? (1 being low, 5 being high)
    1 □  2 □  3 □  4 □  5 □

16. Is this stress reduced significantly after engaging in exercise?
    Strongly agree □  Agree □  Neutral □  Disagree □  Strongly disagree □