



To explore whether exercise duration and the type of exercise has an impact on individual well-being and to provide more in-depth insight to why this might be.

Psychological Empirical Project

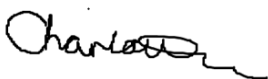
Student- 2206694 Dissertation in Applied Psychology, March 2025,

University of Wales Trinity Saint David.

Dissertation submitted in partial fulfilment of the requirements for the degree of Bachelor of the Arts (hons) in Applied Psychology.

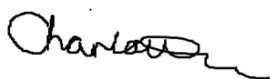
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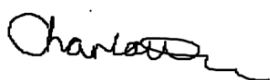
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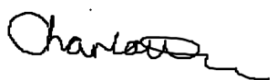
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2. Does the duration of exercise have an impact on individuals' well-being?
3. Study that supports the impact of covid-19 on individuals' mental health.
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Acknowledgments

As I Approach the submission date for my dissertation, I would like to individually thank those who have supported me throughout this journey of my Psychology degree across the last 3 years.

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Abstract

The objective of this study was to explore whether exercise duration and the type of exercise has an impact on individuals' well-being and to provide more in-depth insight to why this might be. The design of the study was a mixed-method web-based questionnaire design, that included two phases. The first phase was the quantitative section that included the demographic section, the quantitative questions and the Warwick Edinburgh well-being scale (Tennant et al., 2007). The second phase was the qualitative section that included the open-ended questionnaire regarding their participation in exercise. A total of 64 participants responded, which consisted of 21 males and 33 females. The results showed that there was no significant difference between the types of exercise, aerobic ($M = 44.94$, $SD = 7.69$) and anaerobic ($M = 46.55$, $SD = 11.17$; $F(1,45) = .077$, $p = .783$, $\eta^2 = .002$) regarding its impact on the participants' well-being. However, there was a significant difference between the duration of +150 minutes ($M = 48.42$, $SD = 9.27$) and no exercise ($M = 38.00$, $SD = 11.63$; $F(3,45) = 4.172$, $p = .011$, $\eta^2 = .218$) regarding its impact on the participants' well-being. Overall, the study highlighted the benefits of exercise, including improved social connections, mental health, self-esteem, and mood. Participants reported that exercise reduced stress and enhanced focus, with team sports boosting motivation. The implications of these findings suggest that mental health specialists should incorporate exercise into treatment plans for depression and anxiety, potentially reducing reliance on antidepressants.

1 Chapter 1: Review of Literature

Exercise is described as enhancing or maintaining physical fitness and a component of regular, scheduled, and structured physical activity (Caspersen et al., 1985). There are many different types of exercises, that all come under two main categories: aerobic and anaerobic. Aerobic exercise is sustained movement overtime, that requires more oxygen to provide the working muscles with oxygenated blood. This causes the heart to beat more quickly and the lungs to work harder (Wahid et al., 2016). However, anaerobic activities are quick, sharp motions that do not require oxygen; instead, the body uses glucose to power these high-intensity, explosive movements (Patel et al., 2017). Weightlifting and sprinting are examples of anaerobic activities as these sharp movements only take 30 seconds or less to complete (Colledge et al., 2018).

The World Health Organization (2024) states that individuals who are 18 years of age and older should engage in moderate exercise for 2.5 to 5 hours per week. Walking, cycling, sports, active recreation, and play are all common forms of physical activity. They also proposed that physical activity has several advantages, including lowering mental health symptoms including anxiety and depression and maintaining a healthy body weight (World Health Organization, 2024).

People of all ages benefit from regular physical activity for both their bodily and emotional well-being. However, according to the World Health Organization (2024), over 80% of adolescents and 27% of adults today do not meet the recommended levels of physical activity. Herazo-Beltrán et al. (2017) conducted a study that perceived barriers in physical activity among adults. The study included 1066 women and 1036 men from Columbia, who had to complete a short questionnaire regarding their physical inactivity. The results suggested that the most selected barrier within exercise was lack of motivation, time and embarrassment, especially within women, and the least frequent barrier being injury (Herazo-Beltrán et al., 2017).

Previous research suggests that physical activity promotes the release of neurotransmitters including dopamine, endorphins, and serotonin (Lin & Kuo, 2013). As stated by Mahindru et al. (2023), these chemicals cause emotions of happiness and fulfilment, which can also enhance your sense of well-being and quality of life. Additionally, the endorphin hypothesis is a theory that suggests that frequent engagement in intense exercise leads to an increase release of

endorphins. The theory suggests that the endorphins released during exercise bind to opioid receptors in the brain, resulting in feelings of euphoria, decreased pain sensitivity, and an overall improvement in well-being (Craft & Perna, 2004). The Centers for Disease Control and Prevention (CDC) state that well-being is characterized by positive functioning, fulfilment, and life satisfaction as well as the absence of negative feelings and moods (Bautista et al., 2023).

Consequently, the global pandemic Covid-19, had a massive impact on all individuals lives, including both physical activity and well-being levels (Park et al., 2022). Ripley-Gonzalez et al. (2023) conducted research into how young individuals' physical fitness changed from before and after the pandemic. The results showed that adolescents' participation in exercise decreased significantly (Ripley-Gonzalez et al., 2023). The University of Oxford (2023) stated that the pandemic was associated with an increased likelihood of depression, social, emotional, and behavioral problems, as well as worse mental health in general among young people. This could have been linked to the lack of physical activity during the global pandemic (University of Oxford,2023).

Furthermore, Thygesen et al. (2021) examined the psychological wellness of 4234 individuals from Denmark, both before and during the Covid-19 pandemic. The individual's completed the Short Warwick-Edinburgh Mental Well-Being Scale at the beginning of 2019 and again at the end of 2020 (Thygesen et al., 2021). The results showed that there was a significant decrease in mental well-being after the pandemic in both sexes (Thygesen et al., 2021).

In the UK, there were 72 million antidepressant prescriptions issued in 2019, however, in 2023, the statistics increased to 89 million antidepressants (Gray, 2022). This shows that the UK population's well-being was greatly impacted by the global pandemic, as the demand for antidepressants increased by 21 percent (Gray, 2022). It has cost the NHS 20 million pounds, based on 2023 figures (Gray, 2022). Therefore, encouragement of regular physical activity may provide people with natural benefits, such as boosting serotonin levels, instead of having to rely on medication.

Studies suggested improved mental health promotes more community involvement and strengthens one's ability to handle stress (Bauer & Hamming, 2013). According to the World Health Organization (2024), both aerobic and anaerobic activities are recommended to be beneficial for people's physical and mental health. A qualitative study conducted by Hovland et

al. (2023) suggested some benefits of aerobic training. Hovland et al. (2023) investigated how physical activity affects the perceptions of health and well-being among young individuals with severe mental illness. Nine young adults who participated in a high-intensity aerobic training program and had significant well-being concerns were interviewed by the researchers (Hovland et al., 2023).

According to the findings, physical activity was mostly seen by individuals with psychological issues as a fulfilling activity that enhanced their sense of well-being and improved their physical health (Hovland et al., 2023). Additionally, exercise helped to enhance their social interaction and self-identity, which in turn could improve one's ability to manage stress and mental well-being, as mentioned previously (Hovland et al., 2023).

The researcher used a qualitative methodology that provided detailed responses and some valuable information. However, the study could have used a quantitative approach to investigate the proportion of individuals who believed that exercise improved their well-being as opposed to those who did not support this argument. Additionally, there were only nine participants in the sample, which may have reduced the range of experiences within exercise. A larger sample could have provided deeper and more complex results because of the variety of life experiences and more detailed responses.

Additionally, a study conducted by Basso et al. (2022) examined how increasing aerobic exercise affected the mental health and cognitive function of individuals in moderate physical condition. Within the study, they had a control group that remained at exercising 1-2 sessions a week and the other group who increased to 4-7 sessions a week. The results suggested that the group who increased the number of sessions experienced greater well-being, as they showed a significant decrease of negative feelings such as sadness and an increased body image, which suggests greater overall well-being. This suggests that increasing the duration of aerobic exercise increases your well-being (Basso et al., 2022).

In contrast, Welford et al. (2022) conducted a study that examined the well-being effects of yoga and aerobic exercise in elderly people who are physically inactive but otherwise healthy. Eighty-two participants, aged between 65 and 85, were provided with a 5-item Satisfaction with Life Scale and a 13-item Life Satisfaction Index-Z Scale to complete at the start of the study in April 2019 and again in August 2019. These scales provided the researcher with their well-being

scores (Welford et al., 2022). Participants randomly assigned to yoga were required to attend three 60-minute sessions per week and were given a free 12-week membership to a nearby yoga studio (Welford et al., 2022). Similarly, those assigned to aerobic exercise also received a free 12-week membership to attend three 60-minute sessions per week, which included aerobics at a light to moderate intensity (continuous whole-body movements conducted to music), dancing-based exercises, and cycling/spinning (Welford et al., 2022). Participants in the control group were instructed not to start a new exercise program or increase their level of physical activity, and instead, to continue with their regular daily routines (Welford et al., 2022).

The results after 12 weeks showed a significant increase in the well-being scores of participants who engaged in both physical activity sessions, compared to those in the control group (Welford et al., 2022). However, no difference in effectiveness was found between aerobic and anaerobic activities. Welford et al. (2022) suggested that the higher well-being scores in elderly participants were likely due to the social aspect of the study. By attending regular sessions, participants felt connected to a community and made friendly connections with others in the exercise sessions (Welford et al., 2022).

The study conducted by Welford et al. (2022) provided some useful data as they compared two types of exercise versus an inactive group, as well as including a follow up 12-weeks later. However, the researchers could have considered using a within-subject study design, all participants take part in all the conditions. This would make the results of the study more reliable, as it has been tested more frequently. Additionally, they could have completed the study again but with younger participants, to compare the results and to see whether the younger or elderly participants benefitted more from exercise on their well-being.

Additionally, Vries et al. (2012) conducted a meta-analysis that explored the effects of physical exercise therapy on mobility, physical functioning, physical activity and quality of life on elderly adults. According to the findings, physical exercise therapy significantly enhances physical functioning and mobility. The literature suggests that enhancing cardiovascular fitness by increasing heart and lung capacity can result in increased energy and endurance for day-to-day movement. The findings suggested that high-intensity exercise therapies, including brisk walking, were significantly more beneficial for physical functioning than low intensity exercises that included chair exercises (Vries et al., 2012). The findings also support the Cardiovascular

Adaptation Theory, which suggests that exercise, particularly aerobic exercise, improves the circulatory system and heart function. This leads to increased capillarization and stroke volume, resulting in more efficient circulation of oxygenated blood, resulting in a feeling of increased energy (Vega et al., 2017).

Furthermore, Granero-Jiménez et al. (2022) conducted a qualitative study that examined how young individuals' psychological health, motivation, and physical activity influence each other over a three-month period. A total of 489 participants, aged between 18 and 35, took part in the study and completed questionnaires about their physical activity levels, psychological well-being, and motivation for physical activity (Granero-Jiménez et al., 2022).

The results of this study showed that greater physical activity levels were linked to improved psychological well-being. Additionally, one significant factor influencing psychological well-being was motivation, particularly intrinsic motivation (Granero-Jiménez et al., 2022). Granero-Jiménez et al. (2022) concluded that men exercise to enhance their perception of themselves to achieve goals in life and overcome obstacles, both of which are traits of intrinsic motivation. However, women base their motivation on things that are outside of themselves, such as enhancing their physical appearance, losing weight, or decreasing body fat (Granero-Jiménez et al., 2022). However, a limitation of this study could be social desirability bias due to the self-administered questionnaires, this causes the respondents to hide the truth by saying what is expected of them or what is generally accepted by society.

In addition, Agius et al. (2024) conducted a study that examined individual versus group exercise preference among Maltese gym-goers. The results suggested that men are more likely to prefer training alone as opposed to with a partner or in a group. Traditional masculine norms, which frequently highlight qualities like strength, independence, and a refusal to look weak or dependent on others for emotional support or motivation when working out, may have an impact on this choice. Whereas women are more likely to exercise in groups for the social aspect and support from others, which may motivate them to participate (Agius et al., 2024). This would support the social support theory, as this theory suggests that social support offers networks and friendships that can encourage individuals to begin or sustain exercise. This may be through

emotional support, such as providing encouragement by praising them when they perform well (Stapleton et al., 2015).

As mentioned previously, individuals should engage in moderate exercise for 2.5 to 5 hours per week (World Health Organization, 2024). However, the length of a workout can vary greatly based on the individual, their goals, preferences, and the type of exercise. For weightlifting, 45-60 minutes each session can be sufficient. However, it may be suggested to do cardiovascular exercises for 30 -60 minutes (Harold & Cook, 2013). Research suggests that the more days and minutes spent exercising at a moderate level, the higher the subjective well-being level (Wicker & Frick, 2015).

Iwon et al. (2021) conducted a study to explore whether starting regular exercise could affect self-esteem, happiness, and life satisfaction. The study involved 217 participants, who were divided into three groups based on their physical activity levels: active individuals (74 participants), beginners (67 participants), and inactive individuals (76 participants) (Iwon et al., 2021). All participants completed a questionnaire on self-esteem, happiness, and life satisfaction twice, with a four-week interval between the surveys (Iwon et al., 2021). The results showed that frequent exercise was associated with increased levels of life satisfaction, happiness, and self-esteem (Iwon et al., 2021). Iwon et al. (2021) noted that individuals who regularly exercise may have higher levels of endorphins, which promote positive emotions. Additionally, body image is linked to self-esteem: individuals who are dissatisfied with their bodies often report lower self-esteem. Consequently, more active individuals may have a more positive body image and, as a result, higher self-esteem (Iwon et al., 2021).

Although this study provided positive results, it has also produced many limitations including a possibility of social desirability bias. The researcher was not able to determine whether the participants' allegations of engaging in physical activity were accurate or not. Given their intense desire for social acceptance, the participants might have reported engaging in more physical activity than they did. Additionally, the researcher could have included an open-ended questionnaire to gather the participants' thoughts of physical activity and why they did or did not engage in physical activity. Furthermore, the researcher could have considered extending the study to eight weeks and having the participants complete the questionnaire a third time to compare whether the individuals still felt the same way.

Moreover, on a larger scale, Hassmén et al. (2022) conducted a study to investigate the relationship between the frequency of physical activity and certain indicators of psychological health. All 3403 participants in the study completed a questionnaire provided by the researcher that included: the Finnish Cardiovascular Risk Factor Survey (regarding their perceived level of fitness and exercise routines), the Beck Depression Inventory, the State–Trait Anger Scale, the Cynical Distrust Scale, and the Sense of Coherence inventory (how individuals approach life and make use of their resources in order to maintain and improve their health) (Hassmén et al., 2022).

According to the findings of this cross-sectional study, individuals who worked out two or three times a week reported considerably lower levels of stress, cynical mistrust (having negative disbelief and believing the worst about human nature and intentions), anger, and sadness compared to individuals who worked out infrequently or not at all (Hassmén et al., 2022). Their findings are supported by the stress reduction theory in exercise, as this theory suggests that physical activity can help to reduce the levels of stress hormones such as cortisol and adrenaline, promoting a more relaxed state of mind (Childs & Wit, 2014).

Even though the study included a large sample size, there was a lack of explanation behind the findings due to the study being quantitative. The researcher could have examined which type of exercise the participant considered as their primary form of exercise and explored which type of exercise, aerobic or anerobic, was associated more with the lower levels of stress and anger. Additionally, Hassmén et al. (2022) could have considered a longitudinal study, as Iwon et al., (2021) benefitted from using this method, as it provides the researcher with more accurate data as it can detect any changes that may occur over a certain period.

As previously mentioned by the World Health Organization (2024), individuals of all ages, genders, and physical abilities benefit from exercise (World Health Organization, 2024). Due to a lack of previous studies, An et al. (2020) conducted research to examine the connections between physical exercise, happiness, and life satisfaction in young, middle-aged, and older adults. The study involved 2345 participants, who were divided into three age groups: young (ages 18–44), middle-aged (ages 45–64), and older (ages 65 and above). These participants were further categorized based on their physical activity levels: high, moderate, and low (An et al.,

2020). Participants were asked to report the days and times they engaged in vigorous, moderate, and low-intensity physical exercise over the previous seven days. Additionally, both life satisfaction and happiness were measured using a single question (An et al., 2020).

The results showed that higher levels of physical exercise were positively associated with greater happiness and life satisfaction in young, middle-aged, and elderly individuals. Furthermore, there was a positive relationship between age and happiness and life satisfaction, meaning these factors increased as people aged (An et al., 2020). Although the study provided valuable data regarding well-being and physical activity across different age groups, it had some limitations. First, the mean age of participants was 51.06, which indicates that most participants were middle-aged. This creates an imbalance in the data, as the groups were not evenly distributed. To ensure more accurate results, future studies should aim for an equal number of participants in each age group. Additionally, when measuring life satisfaction and happiness, participants were only asked a single question to categorize their levels as either high or low. A more robust approach would be to use a well-being scale and a life satisfaction scale to assess participants' status, rather than relying on just one question.

To conclude, it is evident that exercise, particularly when the World Health Organization's (2024) recommended duration is met, plays a significant role in enhancing both physical and mental health. While research indicates that physical activity improves well-being, there is a gap in the literature regarding the specific impact of exercise type (aerobic vs. anaerobic) and duration on well-being. This study aims to address this gap by focusing on the relationship between exercise type, duration, and well-being. It intends to provide more in-depth insights into how different forms of exercise and their duration specifically affect mental well-being. To achieve this, the study will use quantitative questions, the Warwick-Edinburgh Mental Well-Being Scale (Tennant et al., 2007) alongside an open-ended questionnaire. The three hypotheses are as follows:

1. The participants in the 150+ minutes group will have a higher score on the well-being score compared to the other groups.
2. The aerobic group will have higher scores on the well-being scale compared to the other groups.
3. The duration of aerobic exercise will have a positive effect on well-being, such that longer durations of aerobic exercise will lead to greater improvements in well-being scores.

2 Chapter 2: Methods

2.1 Participants

A convenience sample was used as participants over the age of 18 were recruited via the University of Wales Trinity St David's (UWTSD) Psychology Experimental Management System (EMS) and the UWTSD social media pages. View Appendix 1 for the advert used on the social media pages to recruit the participants. A total of 64 participants responded, out of this sample 53 data sets were included, which consisted of 21 males and 33 females. The age of participants ranged from 19 to 64 years of age ($M = 35.20$) ($Sd = 13.60$). There were 35 participants in the aerobic group and 18 participants in the anaerobic group. Additionally, there were 14 participants in the 150+ group, 15 participants in the 60–150-minute group, 14 in the less than 60-minute group and 10 in the 'no exercise' group.

2.2 Design

The study used a mixed-method, web-based questionnaire design that consisted of two phases. The first phase involved a quantitative questionnaire, which collected demographic data (including age and gender), the participants' primary form of exercise, and their physical activity duration using the Qualtrics software. View appendix 3 for the quantitative questions. Additionally, the Warwick Edinburgh well-being scale (Tennant et al., 2007) was used to measure the participants' well-being. The data on exercise type and duration were analyzed using SPSS with a 2x4 Anova. The independent variables were the type of exercise (aerobic vs. anaerobic) and exercise duration (+150 minutes, 60-150 minutes, below 60 minutes, and no exercise), and the dependent variable was the well-being score. The second phase of the study was qualitative, consisting of five open-ended questions about participants' exercise experiences. View appendix 4 for the qualitative questions. From this data, the researcher identified 67 codes, which led to the development of four themes through thematic analysis. The open-ended questions were designed by the researcher, drawing inspiration from the qualitative study conducted by Burton et al. (2021).

2.3 Materials

The study was conducted online, with participants completing the survey on a computer or smart phone. They accessed the study link via the EMS or the UWTSD social media page, and the survey was hosted on Qualtrics. The Warwick Edinburgh Well-being Scale (Tennant et al., 2007), which includes 14 questions, was used to assess the participants' well-being. Responses were measured using a 5-point Likert scale, where 1 represented "none of the time," 2 was "rarely," 3 was "some of the time," 4 was "often," and 5 was "all of the time." View appendix 2 for the scale used. The Warwick Edinburgh well-being scale has demonstrated highly reliability and validity in previous research (Brown et al., 2011).

2.4 Procedure

Participants accessed the study by selecting a link from either the EMS or the UWTSD social media page. Before beginning, participants were presented with an information sheet that explained what was expected of them in the study, see Appendix 9. After reviewing the information sheet, participants were asked to provide consent. They were presented with a consent form, see Appendix 10, where they had to tick all statements to confirm their willingness to participate. It was clearly stated that they could leave the study at any time by closing the browser before the study began.

Once consent was obtained, participants were directed to the demographic section of the study. Here, they provided their age, gender, primary form of exercise and their physical activity duration, see Appendix 3 for the quantitative questions. The next section consisted of the Warwick Edinburgh Well-Being Scale (Tennant et al., 2007), where participants rated their well-being over the past two weeks using a 5-point Likert scale, see Appendix 2 for the scale.

Each section of the study provided the option to exit at any time, with participants being automatically directed to a debrief form if they chose to leave. The final section of the study

consisted of a qualitative questionnaire, see Appendix 4, allowing participants to elaborate on their thoughts and feelings regarding physical activity.

Once they had completed the study, participants were presented with a debrief form, see Appendix 11. This form explained their role as participants, the purpose of the data collection, and provided information on how to withdraw from the study. Participants were informed that they had 48 hours to withdraw their data and were given the researcher's UWTSD email for any questions or requests they may have had.

2.5 Ethical Considerations

The study's purpose, including the requirement to complete the Warwick-Edinburgh Well-Being Scale (Tennant et al., 2007) and fill out a questionnaire on their experience with exercise and overall well-being, will be explained to the participants before the study begins. The researcher will also inform participants that any data collected will remain anonymous and will not be traceable back to any individual. After reading the information sheet, participants will be presented with a consent form that must be completed to proceed. However, if they choose not to participate after reviewing the information sheet, they are free to close the browser and exit the study at any time. Participants will be asked to answer openly about their experience with exercise and well-being, which may potentially cause distress, embarrassment, or discomfort. If this occurs, participants have the right to withdraw from the study at any point, and their data will be immediately erased and not used. To ensure participants feel no pressure, they will be reminded throughout the study that they can leave at any time, including after the study has concluded.

3 Chapter 3 – Results

This section shows the type of exercise (aerobic or anaerobic) and its duration per week.

3.1 Table 1

Mean and standard deviation scores for well-being scores on the Warwick Edinburgh well-being scale for type of exercise and duration of exercise (Main Effects).

Variable	Mean	Standard deviation
Aerobic	44.94	7.69
Anaerobic	46.55	11.17
+ 150 Minutes	48.42	9.27
60-150 Minutes	48.66	5.40
Less than 60 Minutes.	44.50	6.64
No Exercise.	38.00	11.63

Table 1 shows the greater scores on the Warick Edinburgh well-being scale was greatest in the +150 minutes variable and poorest score was the no exercise variable. A two-way ANOVA was carried out and showed the following results:

Levene's test for equality of variances was found to be violated for the present analysis, $F(7,45) = 2.01, p = .074$. Consequently, the assumption of homogeneity of variance between the groups has been met. A significant main effect for Exercise Duration – $F(3,45) = 4.172, p = .011, \eta^2 = .218$. Post hoc comparisons using Tukey's HSD test revealed significant differences between the no exercise group and the +150 minute group ($p = .02$), as well as between the no exercise group and the 60–150-minute group ($p = .04$) with +150 minutes duration producing better scores from the Warick Edinburgh well-being scale than no exercise.

The main effect for type of exercise was not significant – $F(1,45) = .077, p = .783, \eta^2 = .002$

3.2 Table 2

Mean and standard deviation scores for the well-being score from the Warwick Edinburgh well-being scale for the interaction between type and duration of exercise.

Variable	Mean	Standard deviation
Aerobic / +150 Minutes	46.16	8.58
Aerobic / 60-150 Minutes	47.63	5.51
Aerobic / Less than 60 Minutes	44.83	6.60
Aerobic / No Exercise.	39.00	10.56
Anaerobic / + 150 Minutes	50.12	9.97
Anaerobic / 60-150 Minutes	51.50	4.50
Anaerobic / Less than 60 Minutes	42.50	9.19
Anaerobic / No Exercise.	36.50	14.66

Table 2 shows that the highest score on the Warick Edinburgh well-being scale was for anaerobic exercise for 60-150 minutes a week (mean- 51.50) and the lowest score was in the anaerobic group that did not exercise (mean- 36.50). Duration of exercise X type of exercise revealed a non-significant interaction $F(3, 45) = .472$ $p = .703$, $\eta^2 = .031$. This shows that the well-being scores were affected by the duration of exercise with 60-150 minutes in the anaerobic condition produced the best well-being score.

The second phase of the results focused on the qualitative section, which included the thematic analysis which created the themes. When it comes to thematically analyzing data, the six steps that are outlined by Clarke and Braun (2013) are followed (DeMarco, 2023). To begin with, the researcher gets familiar with the data and creates the initial codes. All the codes that are created are divided into subcategories based on similarity and patterns, known as themes. After these stages, the researcher begins to report the findings (DeMarco, 2023).

Familiarization phase

Numerous participants have associated exercise with mental health and wellness, highlighting its beneficial effects on mood, stress reduction, and self-esteem. However, many participants found it difficult to include exercise in their busy lifestyles due to restricted time and a lack of motivation. When it came to exercising, preferences varied: some people enjoyed the accountability and motivation that came with working out in groups or pairs, while others preferred working out alone to focus. Overall, time and social variables had a significant impact on involvement in exercise, despite the fact that it was acknowledged to be good for both physical and mental health. From the thematical analysis, the researcher generated 67 codes and 4 themes: self-perception of mental well-being, barriers in exercise, personal preference and physical health and fitness goals.

3.3 Table 3

Themes and quoted keywords from the analyzed questionnaire

Theme	Quoted keyword	Question / participant
Self-perception of mental well-being	"Definitely, makes you feel good physically and mentally."	Question 8, participant 3
	"Yes, it makes me feel better about my body image."	Question 8, participant 44
Barriers to exercise	"I don't exercise due to lack of time."	Question 7, participant 11
	" I don't participate in heavy exercise due to severe knee pain."	Question 7, participant 28
	" Hard to get myself motivated."	Question 7, participant 8
Personal preference in exercise	"Group, helps motivate me."	Question 10, participant 51
	" I prefer to do it as a pair as you have each other to push to your best potential and become better."	Question 10, participant 14
	" Prefer to be alone as I feel too embarrassed to exercise with others."	Question 10, participant 28
Physical health and fitness goals	" To better my performance on the football pitch."	Question 7, participant 12
	"Help towards my weight loss goal."	Question 7, participant 17

3.4 Self-perception of mental well-being

Several participants associated exercise with a range of benefits, including the social aspect, a way to clear their minds of stress, and the "feel-good" sense of achievement after exercise. A recurring theme was how exercise positively affected their mental well-being. For instance, participant 24 said, "It clears my thoughts, and I feel focused and relaxed after exercise." This suggests that physical activity helps with mental relaxation and enhances focus. Similarly, participant 19 shared, "I use the gym to deal with day-to-day stress," indicating that exercise can help reduce stress and improve mental clarity by releasing endorphins, which boost mood and help the body and mind reset. Additionally, participant 12 noted, "Exercise is a good mood booster and makes me feel more energized." This suggests that exercise triggers the release of endorphins, chemicals that promote happiness, while also increasing blood flow and oxygen to the muscles, which helps individuals feel more energized (Golen & Ricciotti, 2021). This is supported by Mahindru et al. (2023), who suggested that exercise promotes the production of neurotransmitters like endorphins, which produce feelings of pleasure and satisfaction, which can improve your general well-being and quality of life. Additionally, this would be supported by the Cardiovascular Adaption theory that suggests that exercise improves the circulation of oxygenated blood to the working muscles, resulting in feeling more energized (Vega et al., 2017).

Furthermore, participants also mentioned that they engage in exercise to improve their self-perception. For instance, participant 47 stated that they exercise "to feel good about my appearance." This suggests that exercise has a significant impact on both our physical and mental well-being. Regular physical activity leads to improvements in strength, fitness, and appearance, all of which can contribute to a greater sense of self-worth. Similarly, participant 1 highlighted "confidence" as their reason for exercising. This demonstrates the "feel-good feeling" associated with exercise, which is linked to the release of endorphins. When participants notice physical changes, such as weight loss or improved posture, they experience a sense of accomplishment, further enhancing their self-perception and overall well-being. Iwon et al. (2021) supported this,

noting that individuals who are more active tend to have a more positive body image and higher self-esteem.

In addition, the social aspect of exercising was another frequently mentioned reason for participation. When participant 16 stated, “I love the social side of training,” it suggests they experience a sense of belonging and community. This feeling of connection with others likely enhances their sense of well-being, as they are surrounded by individuals with similar goals and interests, who can encourage and motivate one another. Likewise, participant 32 noted, “time to be with friends in a supporting team sport environment.” By being part of a group with shared ambitions, they create a secure, non-judgmental space that allows the individual to experience the “feel-good” effects of exercise, gaining a sense of purpose and stability from their teammates. This is supported by Hovland et al. (2023), who previously mentioned that exercise can enhance social interaction and contribute to improved mental well-being.

3.5 Barriers in exercise

Whilst conducting the analysis, the researcher noted a consistency with lack of time and motivation when it came to barriers faced in exercise. Participant 30 stated, “not enough hours in the day”, this suggests how difficult it may be to make exercise a priority when other obligations, such as work, family, or personal commitments take up most of their time. It illustrates how people do not appear to have enough time to fit exercise in, even when they are aware of its benefits.

Likewise, participant 15 stated, “I find it difficult to make time and see it as a chore”. This also suggests that they have a busy lifestyle, where they are not able to incorporate exercise into their routine. Similarly, they also referred to exercise as a ‘chore’ which suggests that the participant views it as a job or task to be completed rather than something that brings them joy or relaxation.

Additionally, participant 7 stated, “hard to get myself motivated”, this suggests that the participant may be struggling with mental issues such as stress as this can make it difficult to find the energy, hard to focus on goals or decreased enthusiasm. In continuation, participant 12 stated, “I feel embarrassed about group exercises in case I am not fit enough.” The embarrassment comes from the possibility of being judged or feeling out of place if they do not

meet fitness expectations. This fear can create hesitation or anxiety about participating in group workouts and highlights the emotional barrier that some individuals experience which often leads to them not participating in group exercise. This is supported by Herazo-Beltrán et al. (2017) who previously suggested that embarrassment, lack of time and motivation were the highest prevention indicators in exercise.

Furthermore, another barrier that prevents participation in exercise would be injury. Participant 18 stated, “mobility issues and pain”. This suggests that their inability to move or discomfort prevents them from exercising. Muscle strains or chronic illnesses such as arthritis can all cause pain, which can make activity uncomfortable or even dangerous. Therefore, in order to avoid making their condition worse or creating more pain, the person avoids exercising. Similarly, participant 23 stated, “I do not participate in heavy exercise due to severe knee pain and osteoarthritis.” It indicates that they avoid strenuous or high impact exercises as it might aggravate their symptoms or create greater pain. The fact that only two participants stated injury as a barrier for exercise, this supports Herazo-Beltrán et al. (2017) as they mentioned previously that injury was the least frequent barrier within exercise.

Moreover, another barrier to exercise would be accessible funds for gym membership. Participant 12 stated, “the gym I was at was getting expensive” and participant 23 stated, “limited funds to join a gym”. Both these participants suggested that funding for gym membership was a barrier that they faced, which suggests that cost of the membership was no longer accessible, which prevented them from attending the gym. However, this barrier should not prevent participation, as there are plenty of alternatives to choose from that do not require membership. This might suggest the reason why this was not a barrier within Herazo-Beltrán et al. (2017) study as it does not prevent participation within exercise and is more of an excuse for not participating.

3.6 Personal preference in exercise

The researcher noted a mixture of personal preference when it came to answering question 10. While some participants preferred the motivation and sociability of working in a group or pair, many participants preferred to exercise alone for pace and focus. Participant 5 stated, “alone. It gives me time to switch off and focus on becoming better.” This suggests that they can focus entirely on their own development, improve their abilities, and push towards their fitness goals without external distractions. It provides the mental space they need to think, stay focused on bettering themselves, and enter a state of mind where their main goal is to improve their physical health. Additionally, participant 30 stated, “more intense and specific training on my own.” This suggests that they can exercise more intensely, push themselves harder, and focus on their exercises when there are no external distractions. It also suggests that working out alone enables a higher level of accuracy and self-control, enabling the person to commit to a more demanding training schedule that fits with their own goals. Agius et al. (2024) support this view, suggesting that men are more likely to exercise independently due to a preference for independence and self-reliance, not relying on others for motivation or support.

On the other hand, the researcher discovered a connection between participants that exercised in either pairs or groups and positive well-being. The results demonstrated that socializing was an important aspect of training as it encouraged and motivated individuals to exercise and created a more joyful environment to be in when exercising. Participant 11 stated, “with other people. So, they can encourage you and keep you entertained.” This suggests that the social component can improve the training experience by encouraging people to stay motivated, challenge themselves, and potentially increase their commitment to their fitness routine. In essence, it emphasizes how friendship may help individuals stay motivated and reach their fitness goals.

Likewise, participant 34 stated, “with a friend, less intimidating in a gym/class.” This implies that working out with a companion may reduce anxiety or feelings of self-consciousness. Many people find it intimidating to work out in a group or public setting, particularly when starting a new class as they are worried about how other people might perceive them. Social support can help boost their confidence and help them stay focused on their fitness goals. This would be supported by Agius et al. (2024) as their study suggested that women are more likely to exercise

in pairs or groups as they feel motivated from having the support from one another and thrive from the social aspect of exercise.

3.7 Physical health and fitness goals

The researcher noted that several participants exercised to improve their physical health and set themselves fitness goals to achieve. Individuals set themselves measurable goals to keep them motivated within their fitness journey, whether it is to improve their cardiovascular fitness or lose weight. Participant 11 stated, “to better my performance on the football pitch.” This suggests that they want to improve their skills, such as dribbling the ball or defending. By improving these skills, they will become better at their sport, which will result in a boost of confidence and a sense of achievement. Likewise, participant 9 stated, “to gain muscle.” This suggests that they have an ideal body image in their mind and by attending the gym regularly, they are able to achieve this goal. The participant may aim to gain muscle to enhance their physical appearance by achieving a more muscular physique, or to increase strength to improve performance in other forms of exercise. This would result in increased self-esteem, confidence and achievement, especially if the fitness goals are met. Granero-Jiménez et al. (2022) previously mentioned that a significant factor that influenced psychological well-being was motivation, particularly intrinsic motivation. They stated that men exercise to enhance their perception of themselves to achieve goals in life and overcome obstacles.

Additionally, participant 14 stated, “helps towards my weight loss goal.” This suggests that the participant exercises regularly to achieve their ideal body image by increasing the number of calories burned, leading to weight loss. Granero-Jiménez et al. (2022) suggested previously that women base their motivation on things that are outside of themselves, such as enhancing their physical appearance, losing weight, or decreasing body fat. This would result in improved self-esteem and self-image as the participant would feel confident and accomplished after achieving their goal of losing weight. Iwon et al. (2021) also supports this as previously mentioned, individuals who are more active are likely to have a more positive body image and, consequently, higher self-esteem from being complimented by others and having better self-perception.

Furthermore, participants also mentioned the importance of maintaining physical health. Participant 34 stated, “mobility needs to be maintained in the older generations” and participant 8 stated, “beneficial to the elderly- to keep as active as possible.” This implies that it is critical for older adults to continue to participate in physical activity as it can help prevent problems including joint stiffness, muscular weakness, and falls, as well as contribute to a better quality of life. Vries et al. (2012) previously supports this as their findings suggest that increased physical activity can help with mobility issues and enhance energy levels, especially within elderly adults. As mentioned previously, the Cardiovascular Adaptation Theory suggests that regular exercise helps to boost energy levels, due to improved blood flow around the body (Vega et al., 2017). Having higher energy levels can significantly improve overall well-being by increasing motivation and improved mood, which would improve an individual’s quality of life.

4 Chapter 4 - Discussion

The purpose of this study was to explore whether the type and duration of exercise impacted an individual's well-being score on the Warwick well-being scale (Tennant et al., 2007). The three hypotheses were as follows: 1. The participants in the 150+ minutes group will have a higher score on the well-being score compared to the other groups. 2. The aerobic group will have higher scores on the well-being scale compared to the other groups. 3. The duration of aerobic exercise will have a positive effect on well-being, such that longer durations of aerobic exercise will lead to greater improvements in well-being scores.

The results of the 2x4 Anova indicated a significant effect of exercise duration on well-being scores. Post hoc tests revealed that individuals in both the +150 minute and 60–150-minute exercise groups reported significantly higher well-being scores compared to the no exercise group, which supported hypothesis 1. These findings are also supported by previous research as Iwon et al. (2021) suggested regular physical activity was associated with higher levels of happiness, self-esteem, and life satisfaction. According to the study, people who consistently exercise may have higher endorphin levels, which would result in happier feelings.

However, the results from the 2x4 Anova suggested that there was no significance when it came to the type of exercise, which goes against hypothesis 2 that aerobic exercise would provide higher scores on the well-being scale. Coincidentally, this is supported by Welford et al. (2022) who previously examined the effects of yoga, a type of anaerobic exercise, and aerobic exercise, such as dance and cycling, on elderly individuals and discovered that both forms of exercise significantly enhanced well-being. However, they did not find a significant difference in the effectiveness of anaerobic and aerobic exercises when it came to improving well-being.

The results of this study did not support Hypothesis 3, which predicted that longer aerobic exercise duration would lead to improved well-being compared to anaerobic exercise. Contrary to previous research suggesting that longer aerobic exercise sessions are linked to significant improvements in psychological and cognitive well-being (Basso et al., 2022), this study found no significant relationship between the duration of aerobic exercise and well-being. While the anaerobic exercise group in the 60–150-minute range had a slightly higher mean well-being score compared to the aerobic exercise group, this difference was not statistically significant.

Therefore, the findings suggest that longer aerobic exercise duration did not necessarily lead to improved well-being in this study.

The results from the qualitative questions highlighted several benefits of exercise, including enhanced social connections, improved self-perception, and better physical and mental health. Many participants reported that exercise helped reduce stress, improve focus, and boost mood through the release of endorphins. This is supported by previous research, as the stress reduction theory suggests that physical activity lowers stress hormones like cortisol and adrenaline, leading to a clearer state of mind (Childs & Wit, 2014). Additionally, the Cardiovascular Adaptation Theory suggests that exercise improves the circulation of oxygenated blood throughout the body, resulting in increased energy (Vega et al., 2017). Furthermore, the Endorphin Hypothesis suggests that regular physical activity boosts the production of endorphins, the neurotransmitters known as the body's natural mood enhancers (Craft & Perna, 2004). Participants also mentioned that goals such as weight loss and muscle building significantly improved their confidence, self-esteem, and body image. Moreover, team sports and group workouts were suggested to foster motivation and a sense of community.

Given the beneficial effects of exercise on mental health, mental health specialists within the NHS should promote physical activity as a method for treating depression, anxiety, and stress. Incorporating exercise into treatment plans could enhance mental health outcomes and lower the expenses associated with antidepressants. As previously mentioned, antidepressants cost the NHS 20 million pounds in 2023. By encouraging exercise, individuals will benefit from the natural release of neurotransmitters, rather than relying on medication.

On the other hand, the results suggested that participants encountered barriers within exercise, such as lack of time and motivation and embarrassment, particularly in a group setting. Due to these barriers, participants viewed exercise as a chore rather than an enjoyable activity. Additionally, problems with mobility, injuries and the price of gym memberships were also mentioned as barriers. Despite these barriers, some participants appreciated the social aspect of group exercise, while others preferred working out alone for focus and independent thinking.

5 Limitations and future research

The study had some potential limitations. Due to the limited time for the research, the study had a relatively small sample size. If the study was to have a larger sample size, the study would produce more accurate and reliable results, as it is being tested more frequently. Additionally, the aerobic group had 35 participants, and the anaerobic group had 18 participants. For future research, the researcher should aim to have the same number of participants in each group to have more accurate and reliable results with no biases (Grace-Martin, 2020).

Additionally, another limitation of the study would be the wording of question 11, which questioned the participants how they typically coped with stress. It would be a limitation as the participants did not respond with the answers that the researcher was anticipating, which led to not helping to answer the research question. Therefore, if the researcher was to conduct a similar study, they would rephrase the question so that the researcher would gain more extended and useful answers regarding the research question.

In continuation, if the researcher was to conduct this study again, the researcher would focus more on the age of the participants. It would be interesting to explore the impact of exercise across different age groups and compare the differences in their responses, as well as investigate the reasons behind these variations. Another area the researcher would focus on in future research would be personal preferences regarding exercise, specifically whether participants prefer to work out alone or in a group setting. It would be valuable to explore how the well-being of individuals who exercise alone compares to those who exercise in a group. The results revealed a mix of preferences, with some individuals valuing the concentration of exercising alone and others enjoying the social aspect of group workouts. Therefore, by examining the difference in preference, it provides an opportunity to examine the impact of these two settings on well-being.

Lastly, for future research, the researcher would consider using a longitudinal study to track changes in participants' well-being scores over a three-month interval. The results from this study indicated that exercise helps elevate mood and reduce stress levels, and a longitudinal study could help assess the long-term effects of physical activity on mental health, tracking these outcomes over months or even years.

6 Conclusion

In conclusion, this study explored the impact of type and duration of exercise on an individuals' well-being. The findings suggested that exercise duration, particularly more than 150 minutes per week, significantly improves well-being, with participants in the highly active groups reported having higher well-being scores compared to those who did not exercise. Therefore, the participants who exceeded the World Health Organization (2024) recommended duration of exercise demonstrated higher scores on the well-being scale. However, the type of exercise, aerobic or anaerobic, did not show a significant difference when it came to measuring well-being, which contradicted the hypothesis. The results suggested that participants in the anaerobic +150 and 60-150 minutes per week groups had higher well-being scores; however, these differences were not statistically significant compared to the aerobic group. Numerous participants stated that exercise increased energy levels, elevated mood, reduced stress, and boosted self-esteem. Additionally, frequent exercise, particularly team sports and group workouts, enhances social relationships and self-esteem. These findings are supported with previous research, which emphasizes that exercise is essential for improving mental health and overall well-being by releasing endorphins. In addition, participants did frequently mention barriers that were faced, which prevented them from participating in exercise. One of the major barriers faced was lack of motivation and time, which made it difficult for participants to exercise. The researcher noted that socializing was an important aspect of training as it encouraged and motivated individuals to exercise and created a more joyful environment to be in when exercising. Therefore, individuals struggling with motivation might benefit from finding a gym partner to stay on track and enjoy the physical and psychological benefits of regular exercise.

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8 Appendix 1 – Study advert

Hi all, I'm currently working on my Dissertation for my Applied Psychology degree at University of Wales Trinity St Davids.

My study focuses on Exploring the impact of different types of exercise and the level of exercise on an individual's well-being.

Participation is completely voluntary. The link provided will take you to a website called Qualtrics. This will initially provide you with the information sheet for this study, which is information regarding what taking part will involve.

For any questions before or after the study, do not hesitate to contact the researcher 2206694@student.uwtsd.ac.uk or the researcher's supervisor s.a.jones@uwtsd.ac.uk

Here's the link to a short questionnaire as part of my research and I would be very grateful to anyone who takes their time to participate. Thank you!

https://uwtsdyrathrofa.eu.qualtrics.com/jfe/form/SV_5imkBaNu4IVRaAK

9 **Appendix 2-** The Warwick Edinburgh well-being scale (Tennant et al.,2007).

Scale:

1 = None of the time

2= Rarely

3= Some of the time

4=Often

5= All the time

Statements:

1. I've been feeling optimistic about the future
2. I've been feeling useful
3. I've been feeling relaxed
4. I've been feeling interested in other people
5. I've had energy to spare
6. I've been dealing with problems well
7. I've been thinking clearly
8. I've been feeling good about myself
9. I've been feeling close to other people
10. I've been feeling confident
11. I've been able to make up my mind about things
12. I've been feeling loved
13. I've been interested in new things
14. I've been feeling cheerful

10 Appendix 3- Quantitative questions

1- What is your gender?

Male

Female

Non-binary

Prefer not to say.

2- Please state your age.

3- What is your current fitness level?

Perfect

Good

Average

Poor

Unfit

4- How often do you exercise a week? With exercise being described as enhancing or maintaining physical fitness, a subset of physical activity repetitive, structured, and planned (Caspersen et al., 1985).

+150 minutes

60-150 minutes

Less than 60 minutes

No exercise

5- From the list provided, which form of exercise would be your primary form of exercise?

Aerobic exercises (running, walking, cycling, hiking, dancing and playing team sports).

Anaerobic exercises (HIIT training, weight training, circuit training, Pilates or yoga).

11 Appendix 4- Qualitative questions.

Why do you / do not participate in exercise?

Would you say that exercise affects your well-being /mental health? Why/ why not?

Do you feel that exercise should be encouraged for all ages? Why/ why not?

When exercising, do you prefer to be alone, in a pair or in a group? Explain why.

How would you typically cope with stress?

12 Appendix 5- Answers from qualitative questionnaire

Question 7- Why do you / do not participate in exercise?

Confidence

Struggle to find the time, I've also moved to a new place and haven't sorted out opportunities such as sports teams

To feel good

Mental health and wellbeing

I enjoy the progress and its good for my mental health

To maintain physical and mental health

Hard to get myself motivated

Time

To gain muscle and improve my mental health

I don't exercise due to lack of time

Haven't got enough time, and by the time I finish work and household chores I am too exhausted.

To better my performance on the football pitch and to feel better about myself

I did participate in exercise for a couple of months and then stopped as the gym I was at was getting expensive and it wasn't a priority at the time I decided to stop

Time and energy levels

Keep fit and healthy

Helps towards my weight loss goal

Find it difficult to make time and see it as a chore

At first it was just to spend time with friends and just as an escape from work and life for a few hours. Now that I compete at the highest level in my sport, it's more about chasing numbers just to see what my limit is. I still love the social side of training but I would still be training and pushing myself just as hard if I was on my own.

There's more important things at the moment

Mobility issues and pain and ill health

Stay active and keep moving

For fitness & mental well being

Physical and mental health

To walk the dogs and get out to exercise

I mostly exercise by walking the dog. I don't participate in heavy exercise due to severe knee pain and osteoarthritis in my knee and bits too painful. As well as a lack of available free time so unable to attend regular classes. Limited funds to join a gym and embarrassment to exercise Infront of others also prevent me from exercising.

Because it clears my thoughts and i feel more focused and relaxed after exercise.

For physical and mental health

It makes me feel better about myself

For the social aspect, it also helps with my mental health.

Lack of time/ have a full-time physical job, exhausted after work.

To keep occupied when i have the time

I tend to start things and get bored so then stop doingg it

Not enough hours in the day

I need to

i don't really participate in exercise as it's not in my weekly/daily routine and i have found it hard to incorporate it into my routine and make it a habit.

I play football it's an effective way to clear my head

maintain weight and clear my head from a stressful day

Makes me feel good

Keep fit, lose weight

Mental and physical health

Very physical job and also to stay in shape

To help stay strong and fit

When I go for a run I feel less stress and i feel so much better in my self.

to feel good about my appearance

For general health

Cant be bothered - no will power

don't like to

I would, om iust bussy alpt of the time

I cant be bothered most of the time

not enough time in the day

Question 8- Would you say that exercise affects your well-being / mental health? Why / why not?

Has a positive impact, feel so much better after exercising

I'm not sure, but filling in that last section has made me realise maybe my lack of exercise is having an effect

Definitely, makes u feel good physically and mentally

Yes - massively, without it my life crumbles apart

Yes because it gives me focus and helps keep the inner demons at bay

Yes, I always feel better after exercise

Yes. It helps especially out in the fresh air. Makes me appreciate life more

Yes, it helps a lot when I can fit it in

Yes, the chemicals that exercises releases in the brain directly improves mood.

Yes, it makes you feel better about yourself

Yes, whenever I go for a walk or hike outdoors, I feel so much more relaxed and positive about myself and it improves my motivation. If I go to the gym I feel better about my physical self.

Definitely, I believe if you see progression physically then your mental health can have a positive response too

i think it does, as it helped me with my thoughts when dealing with difficult things. i do believe that exercising is a good mood booster and makes me feel more energized and refreshed.

Definitely

Yes

Yes, makes me feel great

I think it does. Even when I go for a short walk I will feel better about myself afterwords and that I have achieved something

I definitely notice a negative affect if I don't train, just get a bit agitated. But the sessions themselves I've learnt over the years not to let bad sessions get in my head and take a pragmatic approach to training and not force things if they're not there on that day.

Yes, it does make me feel better

Yes .. after any exercise endorphins increase making you feel good

It's my time for thinking and gives me head space

Definitely makes me feel better

Yes as I feel better about myself after

I feel an achievement when I take a long walk

Yes I like getting outdoors to go walking and that improves my mood being in nature. I found when i exercised a lot in a gym it did not improve my mood, and i felt over tired and my mood declined.

Yes exercise is always beneficial to my mental health and well-being. I feel like i have more energy, and more focused after exercise. Even if im tired and drained. Exercise seems to give me a boost of energy.

Yes hugely. Terrible the less exercise I do.

Yes definitely. I always feel better after a workout

Absolutely, it's time away from work and university, time to be with friends in a supporting team sport environment

I would like to think so however I haven't for 3 years so cannot confirm.

Yes, it boosts my confidence and makes me feel productive

when i went to the gym it made me feel really good

Exercising would be good for mental health due to having something to aim for/think of doing

Yes, makes you feel good

yes- makes me feel more positive and more productive in my day to day life.

It helps me clear my head because I'm playing the game I love with people I love

yes definitely- chemicals released such as serotonin

Yes, feel energised afterwards

Yes, makes you feel better

Yes, in a very positive way as I feel like I have accomplished something.

Makes me feel better about my body image

I feel good after I've done it but I don't look forward to it particularly

Yes when I exercise I always feel better mentally and can focus more in the day. If I don't exercise I feel disappointed more and feel more stressed when things go wrong.

definitely- from being satisfied with your image, allows you to have a positive outlook on yourself- which promotes a good well-being

Yes, the more I take time to exercise the more I feel bogged down with other general life tasks

Yes - not happy with body

i suppose it does when i have the energy

It Definitely helps, i find it helps me think clearly

I do think it helps but i cant be bothered most the time

yes, when i have the time

Question 9- Do you feel that exercise should be encouraged for all ages? Why / why not?

Yes, I think that by taking care of yourself physically it also helps you mentally, however if people push themselves too hard they may feel bad about not achieving goals straight away.

Absolutely! For health and mental health reasons

Most definitely, just the feel good factor

Yes - the benefits mentally and physically are so important and should be a part of everyone's life in some way

Yes because its good for physical and mental health

Yes. It plays an important role in mental wellbeing

Yes. It helps if children learn the benefits of exercise from an early age and form a healthy habit to regularly exercise. Also beneficial to the elderly - to keep as active as possible.

Yes for mental and physical health

Yes, it has been show to be beneficial for all ages.

Yes. Looking after yourself physically and mentally is important

Absolutely it's vital for many things such as weight, physical health, mental health and preventing illness.

Yes because it can be enjoyable and there are more advantages than disadvantages

i think it should be encouraged as it does have a good impact on your physical and mental wellbeing overall even if it is hard to get into and be motivated to do it. I also think it's a good way to learn discipline yourself as i think it helps you mentally with decisions and taking action for things in your life.

Yes for wellbeing physically and mentally

Yes

Yes, essential for mental wellbeing

Yes - there are lots of different activities for all ages. It's good to start young to promote a healthy lifestyle. The older generation may benefit too as it gives a sense of achievement and can promote social wellbeing if exercising as part of a group

100%, as long as you're not getting to the point where you're treating training like it's life or death and your whole week revolves around the outcome of a training session.

Yes

Yes... to help with mobility, blood flow and endorphins

Yes for mental and physical wellbeing

Definitely, would keep the nation healthier, physically & mentally

Yes as it releases fee good endorphins

Exercise is for everyone as there are many ways to exercise

Yes in order to support health and reduce costs for NHS.

100% you can always make time and if you can make the first step to get out and exercise. You always feel a benefit, mentally and physically.

Definitely. It has a positive effect on their physical and mental health

Yes, keeps your body strong

Yes, it should be encouraged. Not only for the mental benefits but the physical, health benefits. I think it also helps to build vital social skills from a young age too.

Yes of course it should be encouraged for everyone. The healthier the population the better.

Yes, should be encouraged throughout all stages of life as mobility needs to be maintained in the older generations

Yes definitely as physical health is so important

Yes

Yes

yes- it is a crucial part of everyday life and is important to all.

100% it helps with a lot even a little run every week can change alot

yes - good way of socialising, keeping healthy

Yes as long as it's something you enjoy

Yes

Yes, there are many benefits and very little drawbacks.

Yes, so they are more capable to do physical tasks

Yes! To keep us healthy and strong

Definitely should be encouraged to all ages as it can help with health and well being. It can reduce depression and stress and also help clear the mind from unwanted thoughts.

definitely- the benefits for everyone is endless

Yes because it improves our health

Yes

yes it's good to be active

Definitely, i think it is beneficial for youn and older people

Yes i suppose so

yes to keep fit and healthy from a young age

Question 10- When exercising, do you prefer to exercise alone, in a pair or in a group? Explain why.

Alone, don't have the confidence to do so in a group

All, depending on what the activity, usually in a pair or small group more often

Pair, help encourage each other

Alone - I enjoy the tranquility and peace of being by myself when training.

Alone. It gives me time to switch off and focus on becoming better

I exercise with my baby or horse.

In a pair for the boost in motivation but also I like to exercise alone as it's less competitive

Alone so I can do it at my own pace and listen to music

Alone as i can focus more

With other people. So they can encourage you and keep you entertained

Alone. I am not very good at sticking to routines or times, because I am so busy I have to do exercise when I get a free moment. I also feel embarrassed about group exercises in case I am not fit enough.

Alone, less distractions and being in a group or pair could impact how hard I train or how early I finish the session

i prefer to do it as a pair as you have each other to push to your best potential and become better. It also shows eachother the support you need if needed and able to better yourself to meet your goals in exercising.

Alone. So can excersise when I want to.

Alone

On my own, I prefer going at my own pace

I did enjoy a group workout class in the past. When copying the instructor I know I am benefiting my body whereas if I workout alone I don't know how long to do each exercise for and also lack motivation

It depends, as I get closer to competition I need to be alone more (or atleast around people who understand what I need to do) to complete my sessions without distractions and get into the heads pace I need to get to to be able to do what I do. In the off season I definitely prefer training in a group and socialising more.

Alone. Easier to focus.

With others and alone

I like to walk with someone, Pilates is best in a group situation, it's not so good online on your own

Both depending on the form of exercise. Group participation, does encourage you to try harder

Alone so I can think

Happy alone or with others

Prefer to be alone as i feel too embaressed to exercise with others. Althoigh i like walking/hiking with others

I prefer alone, as i spend most of my days alone with work. Although if i do go for a walk or run with a friend, i really do enjoy that.

Group is fine but more intense and specific training on my own

Alone. Feel when I work with other people I can't concentrate

It depends. In a group mostly for the social aspect. However I think exercising alone in also beneficial, it's quite meditative for me.

Personally would prefer alone as I am very competitive and currently my body would isn't he's enough for me to be competitive. This happened when I used to run years ago and and caused me to faint. Silly me

With a friend, less intimidating in a gym/class

Pair , can help eachother

Would prefer to be alone, as I'm unfit and unhappy with my body weight I feel people would judge me if I was to exercise in a group

Group, to support each other

either alone or in a pair. being in a pair helps me to get out and do it.

Rather run on my own but football with others

alone - go at my own pace

With others as it's more social

Alone

A bit of both, some times I enjoy just spending time by myself. Other times exercising with others is more fun.

By myself otherwise I get distracted by friends talking making me loose focus

Alone - I'm self conscious

I mainly exercise alone as I am more focused to putting more work in than working as a group sometimes distracts me from working harder.

alone - focus better

Either. Group has to have good vibes if I do in a group

Pair or alone

group, helps motivate me

I usually prefer alone

Definitely alone

with my partner, we motivate each other

Question 11 – How would you typically cope with stress?

Unsure

Poorly, often I feel the need to let off, but rarely do anything about it and just soldier on

Lift weights

Not very well at all - but to help cope I exercise HARD and use cold therapy to try and help

I just go to the gym or walk the dog

Go for a walk.

Not brilliantly. Tend to feel low and overeat when stressed. And I can't think of exercising when overly stressed

Sleep

By having a drink

Smoke

Talk to my husband, I do crafts such as crochet or baking to calm myself. I listen to podcasts or relaxing music.

Going to the gym or maybe even a walk or long drive

I switch between cleaning or going for a nap but I've also picked up a hobby of doing a colouring book which helps. Communicating with my partner, friends and family also helps with any stress I have.

Walk on the beach and talk to my family.

Go cycling

Shut myself away from people

Sleeping is my typical coping mechanism or writing things down

Difficult to answer as I use the gym to help with day to day stress, but it also can be the cause depending if I'm injured or things aren't going right for a sustained period. I don't generally get stressed by day to day trivial stuff, still trying to work out the best way to bring down long term stress

Try and sort things out.

I don't get stressed that often

I go for a long walk and this fixes everything

Cycle

Exercise

Try and deal with the cause

Go for a walk at the coast, in the summer-wild swimming, read a book, have a rest, talk to friends

I used to bottle it up. Although now i talk about it more. I keep notes, kind of like a journal and write positives and things i can do to sort my issues out. And by ticking things off everyday it feels like i am making progress in the right direction.

Not very well. Walking

By going for a walk

I think internalise some of it, share a bit with my parents and friends. Lean on them for support.

Honestly? Masturbation. Then using the clarity after to help me process the situation better.

Walk with music

i tend to zone out

I tend to go and sit in my car alone to think things through that's making me stressed

Quite well

by talking about it

My girlfriend

go for a run

Keep busy

Through a health social life

Getting it out the way so I have a clear head space

Going to the gym and also taking it easy watching films

Have a chilled day/evening

I go for a run or go to the gym or sometimes a long walk. It helps clear my mind

spend time with friends at the gym

Sleep

Not well

read books

Chilling out and watching a film

A glass of wine and some chocolates

arrange to meet my friends

13 **Appendix 6**- Codes from thematic analysis

Confidence

Lack of time

Enjoyment

Maintain physical health

Hard to get motivated

Gain muscle

Exhaustion

Feel better

Improve performance

Expensive

Lack of energy

Kepp fit

Weight loss goal

Seen as chore

Time with friends

Escape from work

Feel good

Stress reliver

Mobility issues

Stay active

Severe knee pain

Limited funds

Embarrassment

Clear thoughts

More focused

Social aspect

Maintain weight

Lose weight

Stay in shape

Stay strong

No will power

Appreciate life more

Chemicals released

Feel better about oneself

Relaxation

Help mental health

Illness

Not prioritized

Positive outlook

Promote healthy lifestyles

Beneficial for elderly

Setting goals

Tranquility

Own pace

Support from others

More intense training

Self concious

Mood booster

Energized

Refreshed

Head space

Achievement

Feel productive

Good well-being

The feel-good factor

Learn discipline

Help mobility and blood flow

Alone

Pair

Group

Less intimidating

Less competitive

Meditative

Less distractions

Entertainment

Encouragement

14 Appendix 7- SPSS output

Between-Subjects Factors

		Value Label	N
2-How often do you exercise a week? With exercise being described as enhancing or maintaining physical fitness, a subset of physical activity repetitive, structured, and planned (Caspersen et al., 1985).	1	150+ minutes	14
	2	60 - 150 minutes	15
	3	Less than 60 minutes	14
	4	No exercise	10
From the list provided, which form of exercise would be your primary form of exercise?	1	Aerobic exercises (running, walking, cycling, hiking, dancing and playing team sports)	35
	2	Anaerobic exercises (HIIT training, weight training, circuit training, Pilates or yoga).	18

Levene's Test of Equality of Error Variances^{a,b}

		Levene Statistic	df1	df2	Sig.
WE_Well_Being_Total	Based on Mean	2.013	7	45	.074
	Based on Median	1.713	7	45	.130
	Based on Median and with adjusted df	1.713	7	32.652	.140
	Based on trimmed mean	2.040	7	45	.071

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Dependent variable: WE_Well_Being_Total

b. Design: Intercept + Duration_of_Exercise + Type_of_Exercise + Duration_of_Exercise * Type_of_Exercise

Descriptive Statistics

Dependent Variable: WE_Well_Being_Total

2-How often do you exercise a week? With exercise being described as enhancing or maintaining physical fitness, a subset of physical activity repetitive, structured, and planned (Caspersen et al., 1985).

From the list provided, which form of exercise would be your primary form of exercise?

		Mean	Std. Deviation	N
150+ minutes	Aerobic exercises (running, walking, cycling, hiking, dancing and playing team sports)	46.1667	8.58875	6
	Anaerobic exercises (HIIT training, weight training, circuit training, Pilates or yoga).	50.1250	9.97765	8
	Total	48.4286	9.27954	14
60 - 150 minutes	Aerobic exercises (running, walking, cycling, hiking, dancing and playing team sports)	47.6364	5.51856	11
	Anaerobic exercises (HIIT training, weight training, circuit training, Pilates or yoga).	51.5000	4.50925	4
	Total	48.6667	5.40723	15
Less than 60 minutes	Aerobic exercises (running, walking, cycling, hiking, dancing and playing team sports)	44.8333	6.60349	12
	Anaerobic exercises (HIIT training, weight training, circuit training, Pilates or yoga).	42.5000	9.19239	2
	Total	44.5000	6.64194	14
No exercise	Aerobic exercises (running, walking, cycling, hiking, dancing and playing team sports)	39.0000	10.56409	6
	Anaerobic exercises (HIIT training, weight training, circuit training, Pilates or yoga).	36.5000	14.66288	4
	Total	38.0000	11.63329	10
Total	Aerobic exercises (running, walking, cycling, hiking, dancing and playing team sports)	44.9429	7.69241	35
	Anaerobic exercises (HIIT training, weight training, circuit training, Pilates or yoga).	46.5556	11.17888	18
	Total	45.4906	8.95206	53

Tests of Between-Subjects Effects

Dependent Variable: WE_Well_Being_Total

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power ^b
Corrected Model	968.825 ^a	7	138.404	1.947	.084	.232	13.631	.698
Intercept	78618.835	1	78618.835	1106.123	<.001	.961	1106.123	1.000
Duration_of_Exercise	889.633	3	296.544	4.172	.011	.218	12.517	.822
Type_of_Exercise	5.471	1	5.471	.077	.783	.002	.077	.058
Duration_of_Exercise * Type_of_Exercise	100.636	3	33.545	.472	.703	.031	1.416	.138
Error	3198.420	45	71.076					
Total	113845.000	53						
Corrected Total	4167.245	52						

a. R Squared = .232 (Adjusted R Squared = .113)

b. Computed using alpha = .05

Estimated Marginal Means

1. Grand Mean

Dependent Variable: WE_Well_Being_Total

Mean	Std. Error	95% Confidence Interval	
		Lower Bound	Upper Bound
44.783	1.347	42.071	47.495

2. 2-

How often do you exercise a week? With exercise being described as enhancing or maintaining physical fitness, a subset of physical activity repetitive, structured, and planned (Caspersen et al., 1985).

Estimates

Dependent Variable: WE_Well_Being_Total

2-How often do you exercise a week? With exercise being described as enhancing or maintaining physical fitness, a subset of physical activity repetitive, structured, and planned (Caspersen et al., 1985).

	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
150+ minutes	48.146	2.277	43.561	52.731
60 - 150 minutes	49.568	2.461	44.611	54.525
Less than 60 minutes	43.667	3.220	37.182	50.151
No exercise	37.750	2.721	32.270	43.230

Pairwise Comparisons

Dependent Variable: WE_Well_Being_Total

(I) 2-How often do you exercise a week? With exercise being described as enhancing or maintaining physical fitness, a subset of physical activity repetitive, structured, and planned (Caspersen et al., 1985).	(J) 2-How often do you exercise a week? With exercise being described as enhancing or maintaining physical fitness, a subset of physical activity repetitive, structured, and planned (Caspersen et al., 1985).	Mean Difference (I-J)	Std. Error	Sig. ^b	95% Confidence Interval for Difference ^b	
					Lower Bound	Upper Bound
150+ minutes	60 - 150 minutes	-1.422	3.353	1.000	-10.675	7.831
	Less than 60 minutes	4.479	3.943	1.000	-6.403	15.362
	No exercise	10.396 [*]	3.548	.032	.604	20.187
60 - 150 minutes	150+ minutes	1.422	3.353	1.000	-7.831	10.675
	Less than 60 minutes	5.902	4.053	.914	-5.283	17.086
	No exercise	11.818 [*]	3.669	.014	1.692	21.944
Less than 60 minutes	150+ minutes	-4.479	3.943	1.000	-15.362	6.403
	60 - 150 minutes	-5.902	4.053	.914	-17.086	5.283
	No exercise	5.917	4.215	1.000	-5.717	17.551
No exercise	150+ minutes	-10.396 [*]	3.548	.032	-20.187	-.604
	60 - 150 minutes	-11.818 [*]	3.669	.014	-21.944	-1.692
	Less than 60 minutes	-5.917	4.215	1.000	-17.551	5.717

Based on estimated marginal means

*. The mean difference is significant at the .05 level.

b. Adjustment for multiple comparisons: Bonferroni.

Univariate Tests

Dependent Variable: WE_Well_Being_Total

	Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power ^a
Contrast	889.633	3	296.544	4.172	.011	.218	12.517	.822
Error	3198.420	45	71.076					

The F tests the effect of 2-How often do you exercise a week? With exercise being described as enhancing or maintaining physical fitness, a subset of physical activity repetitive, structured, and planned (Caspersen et al., 1985).. This test is based on the linearly independent pairwise comparisons among the estimated marginal means.

a. Computed using alpha = .05

3. From the list provided, which form of exercise would be your primary form of exercise?

Estimates

Dependent Variable: WE_Well_Being_Total

From the list provided, which form of exercise would be your primary form of exercise?

	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Aerobic exercises (running, walking, cycling, hiking, dancing and playing team sports)	44.409	1.502	41.385	47.433
Anaerobic exercises (HIIT training, weight training, circuit training, Pilates or yoga).	45.156	2.236	40.654	49.659

Pairwise Comparisons

Dependent Variable: WE_Well_Being_Total

(I) From the list provided, which form of exercise would be your primary form of exercise?	(J) From the list provided, which form of exercise would be your primary form of exercise?	Mean Difference (I-J)	Std. Error	Sig. ^a	95% Confidence Interval for Difference ^a	
					Lower Bound	Upper Bound
Aerobic exercises (running, walking, cycling, hiking, dancing and playing team sports)	Anaerobic exercises (HIIT training, weight training, circuit training, Pilates or yoga).	-.747	2.693	.783	-6.171	4.677
Anaerobic exercises (HIIT training, weight training, circuit training, Pilates or yoga).	Aerobic exercises (running, walking, cycling, hiking, dancing and playing team sports)	.747	2.693	.783	-4.677	6.171

Based on estimated marginal means

a. Adjustment for multiple comparisons: Bonferroni.

Univariate Tests

Dependent Variable: WE_Well_Being_Total

	Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power ^a
Contrast	5.471	1	5.471	.077	.783	.002	.077	.058
Error	3198.420	45	71.076					

The F tests the effect of From the list provided, which form of exercise would be your primary form of exercise?. This test is based on the linearly independent pairwise comparisons among the estimated marginal means.

a. Computed using alpha = .05

4. 2-How often do you exercise a week? With exercise being described as enhancing or maintaining physical fitness, a subset of physical activity repetitive, structured, and planned (Caspersen et al., 1985). * From the list provided, which form of exercise would be your primary form of exercise?

Dependent Variable: WE_Well_Being_Total

2-How often do you exercise a week? With exercise being described as enhancing or maintaining physical fitness, a subset of physical activity repetitive, structured, and planned (Caspersen et al., 1985).	From the list provided, which form of exercise would be your primary form of exercise?	Mean	Std. Error	95% Confidence Interval	
				Lower Bound	Upper Bound
150+ minutes	Aerobic exercises (running, walking, cycling, hiking, dancing and playing team sports)	46.167	3.442	39.235	53.099
	Anaerobic exercises (HIIT training, weight training, circuit training, Pilates or yoga).	50.125	2.981	44.122	56.128
60 - 150 minutes	Aerobic exercises (running, walking, cycling, hiking, dancing and playing team sports)	47.636	2.542	42.517	52.756
	Anaerobic exercises (HIIT training, weight training, circuit training, Pilates or yoga).	51.500	4.215	43.010	59.990
Less than 60 minutes	Aerobic exercises (running, walking, cycling, hiking, dancing and playing team sports)	44.833	2.434	39.932	49.735
	Anaerobic exercises (HIIT training, weight training, circuit training, Pilates or yoga).	42.500	5.961	30.493	54.507
No exercise	Aerobic exercises (running, walking, cycling, hiking, dancing and playing team sports)	39.000	3.442	32.068	45.932
	Anaerobic exercises (HIIT training, weight training, circuit training, Pilates or yoga).	36.500	4.215	28.010	44.990

Post Hoc Tests

2-

How often do you exercise a week? With exercise being described as enhancing or maintaining physical fitness, a subset of physical activity repetitive, structured, and planned (Caspersen et al., 1985).

Multiple Comparisons

Dependent Variable: WE_Well_Being_Total

Tukey HSD

(I) 2-How often do you exercise a week? With exercise being described as enhancing or maintaining physical fitness, a subset of physical activity repetitive, structured, and planned (Caspersen et al., 1985).	(J) 2-How often do you exercise a week? With exercise being described as enhancing or maintaining physical fitness, a subset of physical activity repetitive, structured, and planned (Caspersen et al., 1985).	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
150+ minutes	60 - 150 minutes	-.2381	3.13293	1.000	-8.5958	8.1196
	Less than 60 minutes	3.9286	3.18649	.610	-4.5720	12.4292
	No exercise	10.4286*	3.49062	.023	1.1166	19.7405
60 - 150 minutes	150+ minutes	.2381	3.13293	1.000	-8.1196	8.5958
	Less than 60 minutes	4.1667	3.13293	.549	-4.1911	12.5244
	No exercise	10.6667*	3.44180	.017	1.4850	19.8484
Less than 60 minutes	150+ minutes	-3.9286	3.18649	.610	-12.4292	4.5720
	60 - 150 minutes	-4.1667	3.13293	.549	-12.5244	4.1911
	No exercise	6.5000	3.49062	.259	-2.8119	15.8119
No exercise	150+ minutes	-10.4286*	3.49062	.023	-19.7405	-1.1166
	60 - 150 minutes	-10.6667*	3.44180	.017	-19.8484	-1.4850
	Less than 60 minutes	-6.5000	3.49062	.259	-15.8119	2.8119

Based on observed means.

The error term is Mean Square(Error) = 71.076.

*, The mean difference is significant at the .05 level.

Homogeneous Subsets

WE_Well_Being_Total

Tukey HSD^{a,b,c}

2-How often do you exercise a week? With exercise being described as enhancing or maintaining physical fitness, a subset of physical activity repetitive, structured, and planned (Caspersen et al., 1985).	N	Subset	
		1	2
No exercise	10	38.0000	
Less than 60 minutes	14	44.5000	44.5000
150+ minutes	14		48.4286
60 - 150 minutes	15		48.6667
Sig.		.218	.595

Means for groups in homogeneous subsets are displayed.

Based on observed means.

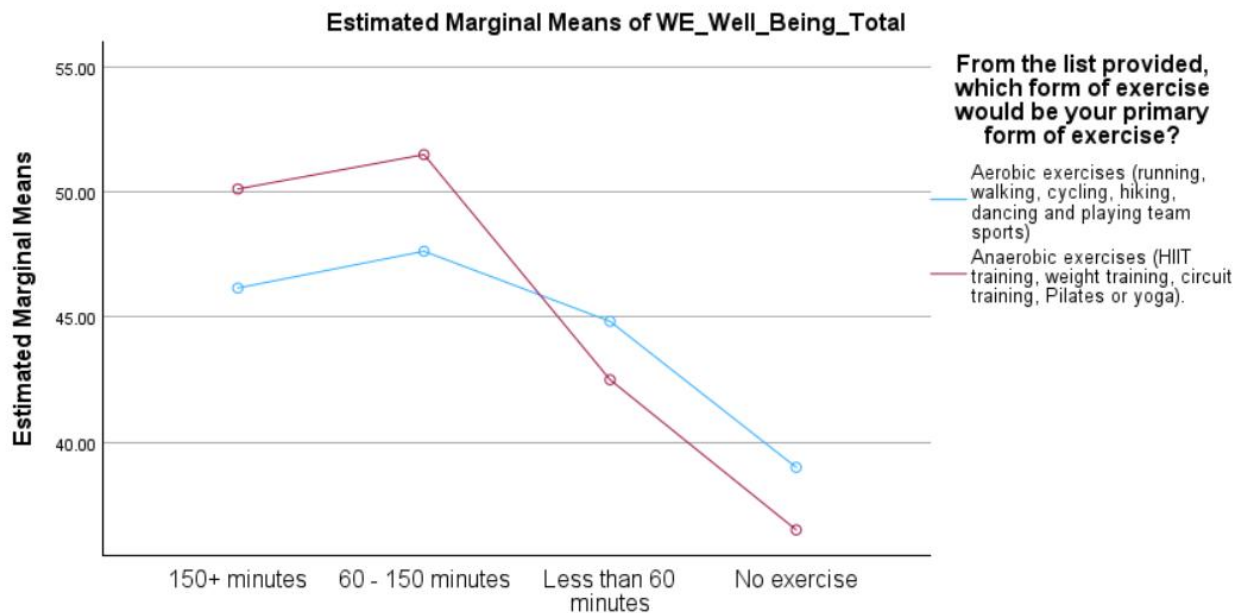
The error term is Mean Square(Error) = 71.076.

a. Uses Harmonic Mean Sample Size = 12.923.

b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

c. Alpha = .05.

Profile Plots



2-How often do you exercise a week? With exercise being described as enhancing or maintaining physical fitness, a subset of physical activity repetitive, structured, and planned (Caspersen et al., 1985).

15 Appendix 8 – Ethical approval form

In order for research to result in benefit and minimize risk of harm, it must be conducted ethically. A researcher may not be covered by the University’s insurance if ethical approval has not been obtained prior to commencement.

The University follows the OECD Frascati manual definition of **research activity**: “creative work undertaken on a systematic basis in order to increase the stock of knowledge, including knowledge of man, culture and society, and the use of this stock of knowledge to devise new applications”. As such this covers activities undertaken by members of staff, postgraduate research students, and both taught postgraduate and undergraduate students working on dissertations/projects.

The individual undertaking the research activity is known as the “principal researcher”.

Ethical approval is not required for routine audits, performance reviews, quality assurance studies, testing within normal educational requirements, and literary or artistic criticism.

Please read the notes for guidance before completing ALL sections of the form.

This form must be completed and approved prior to undertaking any research activity.
Please see Checklist for details of process for different categories of application.

SECTION A: About You (Principal Researcher)

1	Full Name:		Charlotte Ann Evans			
2	Tick all boxes that apply:		Member of staff:	☐	Honorary research fellow:	☐
	Undergraduate Student	☒	Taught Postgraduate Student	☐	Postgraduate Research Student	☐

3	Institute/Academic Discipline/Centre:	University of Wales Trinity Saint Davids
4	Campus:	Carmarthen
5	E-mail address:	2206694@student.uwtsd.ac.uk
6	Contact Telephone Number:	07973 922105
7	Student Number:	2206694
8	Programme of Study:	Applied Psychology
9	Director of Studies/Supervisor:	Stuart Jones

SECTION B: Approval for Research Activity

1	Has the research activity received approval in principle? (please check the Guidance Notes as to the appropriate approval process for different levels of research by different categories of individual)	YES	☒	NO	☐
				Date	
2	If Yes, please indicate source of approval (and date where known): Approval in principle must be obtained from the relevant source prior to seeking ethical approval	Research Degrees Committee	☐		
Institute Research Committee		☐			
Other (write in) Dr Stuart Jones		☒		09/06/2024	

SECTION C: Internal and External Ethical Guidance Materials

	Please list the core ethical guidance documents that have been referred to during the completion of this form (including any discipline-specific codes of research ethics, location-specific codes of research ethics, and also any specific ethical guidance relating to the proposed methodology). Please tick to confirm that your research proposal adheres to these codes and guidelines. You may add rows to this table if needed.	
1	UWTSD Research Ethics & Integrity Code of Practice	☒
2	UWTSD Research Data Management Policy	☒
3	<i>BPS code of ethics and conduct (July 2018).</i>	☒
4	<i>BPS code of human research ethics (April 2021).</i>	X
5	<i>BPS Data Protection Regulation – Guidance for Researchers (2018).</i>	X
6	<i>BPS Ethics Guidelines for Internet-mediated research (June 2021).</i>	X

SECTION D: External Collaborative Research Activity

If there are external collaborators then you should gain consent from the contact persons to share their personal data with the university. If there are no external collaborators then leave this section blank and continue to section E.

1	Institution					
2	Contact person name					
3	Contact person e-mail address					
4	Is your research externally funded?	YES	☐	NO	☐	
5	Are you in receipt of a KESS scholarship?	YES	☐	NO	☐	
6	Are you specifically employed to undertake this research in either a paid or voluntary capacity?	Voluntary	YES	☐	NO	☐
7		Employed	YES	☐	NO	☐
8	Is the research being undertaken within an existing UWTSD Athrofa Professional Learning Partnership (APLP)?	If YES then the permission question below does not need to be answered.	YES	☐	NO	☐

9	Has permission to undertake the research has been provided by the partner organisation?	(If YES attach copy) If NO the application cannot continue	YES	☐	NO	☐
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Where research activity is carried out in collaboration with an external organisation

10	Does this organisation have its own ethics approval system?	YES	☐	NO	☐
	If Yes, please attach a copy of any final approval (or interim approval) from the organisation (this may be a copy of an email if appropriate).				

SECTION E: Details of Research Activity

1	Indicative title:	Exploring the impact of different types of exercise and the level of exercise on an individual's well-being.		
2	Proposed start date:	November 2024	Proposed end date:	March 2025
	Introduction to the Research (maximum 300 words per section) Ensure that you write for a <u>Non-Specialist Audience</u> when outlining your response to the points below: • <i>Purpose of Research Activity</i> • <i>Proposed Research Question</i> • <i>Aims of Research Activity</i> • <i>Objectives of Research Activity</i> Demonstrate, briefly, how <u>Existing Research</u> has informed the proposed activity and explain • <i>What the research activity will add to the body of knowledge</i> • <i>How it addresses an area of importance.</i>			
3	Purpose of Research Activity This study proposes to explore the potential link between different types of exercise, duration of exercise and well-being of individuals. Although there are many studies regarding the frequency of exercise or the type of exercise and well-being, there is a literature gap on the reasoning behind how and why these two variables affect well-being.			

	Exercise is described as enhancing or maintaining physical fitness, a subset of physical activity repetitive, structured, and planned (Caspersen et al., 1985). There are many different types of exercises, that all come under two main categories: aerobic and anaerobic. Aerobic exercise is sustained movement overtime, that requires more oxygen to provide the working muscles with oxygenated blood (Wahid et al., 2016). However, anaerobic activities are quick, sharp motions that do not require oxygen; instead, the body uses glucose to power these high-intensity, explosive movements (Patel et al., 2017). Research suggests exercise leads to a longer and happier life as chemicals are released during exercise, such as serotonin, endorphins, and dopamine. These chemicals produce feelings of pleasure and satisfaction, which alternatively result in improving your sense of well-being and quality of life (Mahindru et al., 2023). The World Health Organization (2024) states that 60-150 minutes of moderate exercise a week is considered highly active, however, anything less than 60 minutes of moderate exercise a week is considered low activity or inactive (World Health Organisation,2024). Exercise should be encouraged for all ages as it has an endless list of benefits, whether they are biological, cognitive, or social benefits. Since the pandemic in 2020, the number of antidepressants prescribed in the UK increased to 89million (Gray, 2022). By encouraging individuals to participate in regular exercise, it may provide them with natural benefits, rather than relying on medication. (this box should expand as you type)
4	Research Question To explore whether exercise duration and the type of exercise has an impact on individual well-being and to provide more in-depth insight to why this might be. (this box should expand as you type)
5	Aims of Research Activity This study proposes to explore the potential link between different types of exercise, duration of exercise and well-being of individuals through the completion of the Worrick Edinburgh well-being scale (Tennant et al, 2007) and an open ended questionnaire which will be analysed using thematic analysis will provide more in depth responses to the impact of exercise on well-being. (this box should expand as you type)
6	Objectives of Research Activity

	Identify whether different types of exercise have an impact on individuals' well-being. Identify whether the duration of exercise has an impact on an individual's well-being. To provide a more in-depth response to the impact of exercise on well-being. (this box should expand as you type)
	Proposed methods (maximum 600 words) Provide a brief summary of all the methods that may be used in the research activity, making it clear what specific techniques may be used. If methods other than those listed in this section are deemed appropriate later, additional ethical approval for those methods will be needed. You do not need to justify the methods here, but should instead describe how you intend to collect the data necessary for you to complete your project.
7	Prior to the studying commencing, the participants will be provided with an information sheet, that explains what their role of a participant will include. They will then be presented with a consent form, which they must tick all the statements to show willingness to participate in the study. To explore the potential link between different types of exercise, duration of exercise and well-being, this study will involve a mixed method design, which includes three phases. The first phase requires the participants to complete the demographic questions and three quantitative questions (ticking one box that applies to them about their participation in sport, specifically about the length and type of exercise). The second phase would be the completion of the Worrick Edinburgh well-being scale (Tennant et al, 2007). The Worrick Edinburgh well-being scale (Tennant et al, 2007) includes 14 items that address positive affect, fulfilling interpersonal connections, good functioning, and emotional and self-evident components of mental health. Using a 5-point Likert scale, participants must tick the box that most accurately represents how they have experienced each statement during the previous two weeks (Tennant et al, 2007). Their results from the Worrick Edinburgh well-being scale, will place them as either low or high on the well-being scale. I have completed the registration for non-commercial licence to use the WEMWBS and have gained permission to use the scale for my dissertation. The third phase would be the completion of the qualitative open-ended questions via Qualtrics, to get a more personal and extended answer about their participation in sport. The qualitative questions include five questions, which allows the participant to provide an extended answer with a personal perspective, which will provide the researcher with more in-depth answers. After the participant has completed the study and is happy for the researcher to collect their anonymous data, the participant will be presented with a debrief form, which provides the participant with the reasoning behind the study and why the researcher used the questions that were asked. The answers from the quantitative questions will determine the participants current fitness level, their duration of exercise each week and their primary form of exercise. Whereas

	the answers from the qualitative questions will allow the participant to elaborate on their thoughts and feelings regarding exercise and well-being. The data collected from the Worrick Edinburgh well-being scale (Tennant et al,2007) and the multiple-choice questions will be analysed using a 2x4 anova and the answers from the extended answers will be analysed through the process of thematic analysis. (this box should expand as you type)
	Location of research activity Identify all locations where research activity will take place.
8	The research study will be conducted online, via a Qualtrics link provided on the UWTSD Facebook page and will also be available via EMS. (this box should expand as you type)
	Research activity outside of the UK If research activity will take place overseas, you are responsible for ensuring that local ethical considerations are complied with and that the relevant permissions are sought. Specify any local guidelines (e.g. from local professional associations/learned societies/universities) that exist and whether these involve any ethical stipulations beyond those usual in the UK (provide details of any licenses or permissions required). Also specify whether there are any specific ethical issues raised by the local context in which the research activity is taking place, for example, particular cultural and/or legal sensitivities or vulnerabilities of participants. If you live in the country where you will do the research then please state this.
9	N/A (this box should expand as you type)

10	Use of documentation not in the public domain: Are any documents NOT publicly available?	NO	☒
		YES	☐
11	If Yes, please provide details here of how you will gain access to specific documentation that is not in the public domain and that this is in accordance with the current data protection law of the country in question and that of England and Wales. (this box should expand as you type)		

	Does your research relate to one or more of the seven aims of the Well-being of Future Generations (Wales) Act 2015?	YES	NO
12	A prosperous Wales	☐	☒
13	A resilient Wales	☐	☒
14	A healthier Wales	☒	☐
15	A more equal Wales	☐	☒
16	A Wales of cohesive communities	☐	☒
17	A Wales of vibrant culture and thriving Welsh language	☐	☒
18	A globally responsible Wales	☐	☒
19	If YES to any of the above, please give details:		
	According to the World Health Organization (2024), both aerobic and anaerobic activities are recommended to be beneficial for people's physical and mental health. Therefore, encouragement of physical activity would be beneficial for the population of Wales by leading them to a healthier and happier life. (this box should expand as you type)		

SECTION F: Scope of Research Activity

	Will the research activity include:	YES	NO
1	Use of a questionnaire or similar research instrument?	☒	☐
2	Use of interviews?	☐	☒
3	Use of focus groups?	☐	☒
4	Use of participant diaries?	☐	☒
5	Use of video or audio recording?	☐	☒
6	Use of computer-generated log files?	☐	☒
7	Participant observation with their knowledge?	☐	☒
8	Participant observation without their knowledge?	☐	☒
9	Access to personal or confidential information without the participants' specific consent?	☐	☒
10	Administration of any questions, test stimuli, presentation that may be experienced as physically, mentally or emotionally harmful / offensive?	☐	☒
11	Performance of any acts which may cause embarrassment or affect self-esteem?	☐	☒
12	Investigation of participants involved in illegal activities?	☐	☒

13	Use of procedures that involve deception?	☐	☒
14	Administration of any substance, agent or placebo?	☐	☒
15	Working with live vertebrate animals?	☐	☒
16	Procedures that may have a negative impact on the environment?	☐	☒
17	Other primary data collection methods. Please indicate the type of data collection method(s) below.	☐	☐
	Details of any other primary data collection method: (this box should expand as you type)		

If NO to every question, then the research activity is (ethically) low risk and **may** be exempt from **some** of the following sections (please refer to Guidance Notes).

If YES to any question, then no research activity should be undertaken until full ethical approval has been obtained.

SECTION G: Intended Participants

If there are no participants then do not complete this section, but go directly to section H.

	Who are the intended participants:	YES	NO
1	Students or staff at the University?	☒	☐
2	Adults (over the age of 18 and competent to give consent)?	☒	☐
3	Vulnerable adults?	☐	☒
4	Children and Young People under the age of 18? (Consent from Parent, Carer or Guardian will be required)	☐	☒
5	Prisoners?	☐	☒
6	Young offenders?	☐	☒
7	Those who could be considered to have a particularly dependent relationship with the investigator or a gatekeeper?	☐	☒
8	People engaged in illegal activities?	☐	☒
9	Others. Please indicate the participants below, and specifically any group who may be unable to give consent.	☐	☒

	Details of any other participant groups:		
	(this box should expand as you type)		

Participant numbers and source Provide an estimate of the expected number of participants. How will you identify participants and how will they be recruited?			
10	How many participants are expected?	For this research, around 50 participants are required. This sample size was chosen based on (Creswell & Creswell, 2018). They state that quantitative research studies should estimate between 10-50 participants, and by having a larger sample, you are able to gain a greater number of different responses (Creswell & Creswell, 2018). This study requires two groups of individuals; individuals who are highly active and lowly active in exercise. (this box should expand as you type)	
11	Who will the participants be?	The participants for this study will be students of UWTSD and individuals who are a part of the UWTSD Facebook page. All participants will be 18 years of age or over. There is no specific requirement for participation. (this box should expand as you type)	
12	How will you identify the participants?	The participant will be recruited via the UWTSD Facebook page and EMS. The participants will be provided with a link, which will take them to the online questionnaire via Qualtrics. Through the completion of Worrick Edinburgh well-being scale (Tennant et al, 2007), the participants will be categorized as either low or high on the well-being scale. Additionally, the completion of the quantitative phase will categorize them as either highly or lowly physically active. (this box should expand as you type)	

	Information for participants:	YES	NO	N/A
13	Will you describe the main research procedures to participants in advance, so that they are informed about what to expect?	☒	☐	☐

14	Will you tell participants that their participation is voluntary?	☒	☐	☐
15	Will you obtain written consent for participation?	☐	☒	☐
16	Will you explain to participants that refusal to participate in the research will not affect their treatment or education (if relevant)?	☒	☐	☐
17	If the research is observational, will you ask participants for their consent to being observed?	☐	☐	☒
18	Will you tell participants that they may withdraw from the research at any time and for any reason?	☒	☐	☐
19	With questionnaires, will you give participants the option of omitting questions they do not want to answer?	☒	☐	☐
20	Will you tell participants that their data will be treated with full confidentiality and that, if published, it will not be identifiable as theirs?	☒	☐	☐
21	Will you debrief participants at the end of their participation, in a way appropriate to the type of research undertaken?	☒	☐	☐
22	If NO to any of above questions, please give an explanation			
	The participants won't be required to provide written consent as the research study will be conducted online via Qualtrics. The participant will be provided with the information sheet initially and then be followed with the consent section, where they are expected to select 'yes' to each of the statements. By selecting 'yes' to each of the statements, this shows that the participant is providing their consent. <i>(this box should expand as you type)</i>			

	Information for participants:	YES	NO	N/A
24	Will participants be paid?	☐	☒	☐
25	Is specialist electrical or other equipment to be used with participants?	☐	☒	☐
26	Are there any financial or other interests to the investigator or University arising from this study?	☐	☒	☐
27	Will the research activity involve deliberately misleading participants in any way, or the partial or full concealment of the specific study aims?	☐	☒	☐
28	If YES to any question, please provide full details			
	<i>(this box should expand as you type)</i>			

SECTION H: Anticipated Risks

1	Outline any anticipated risks that may adversely affect any of the participants, the researchers and/or the University, and the steps that will be taken to address them. If you have completed a full risk assessment (for example as required by a laboratory, or external research collaborator) you may append that to this form.		
	Full risk assessment completed and appended?	Yes	☐
		No	☐
2	Risks to participants For example: sector-specific health & safety, emotional distress, financial disclosure, physical harm, transfer of personal data, sensitive organisational information		
	Risk to participants: 1. Concern over having to complete the Worrick Edinburgh well-being scale. 2. Discomfort over talking about their participation in exercise. 3. Feelings of embarrassment or judgement regarding their lack of participation in exercise. 4. As the participant will be asked to elaborate on their thoughts and experience of exercise, this could	<i>How you will mitigate the risk to participants:</i> 1. Participants will be informed of the nature of the study prior to taking part. Therefore, if any of the participants would prefer not to complete the Worrick Edinburgh well-being scale, they would have the option to not continue the study. The participant will also be able to withdraw from the study at any given time, if they wish to do so with no penalty. 2. Participants will be informed of the topic of the study before they begin. This will allow the participant to decide whether they wish to continue or not. The participants are free to leave the	

trigger some negative or traumatic experiences, such as being bullied. 5. Participants will be required to complete the study via Qualtrics. A potential risk with using Qualtrics would be as the researcher is not present during the study, the participant may experience difficulty with wording of the question. 6. A risk of transfer of personal data. 7. A risk of leakage of data. <i>(this box should expand as you type)</i>	study at any time, and their data will be destroyed. 3. The nature of the study will be explained prior to the study. Therefore, if the participant would prefer not to answers questions regarding their participation in exercise, they will have the option to withdraw from the study, without repercussions. 4. The participants will be informed regarding the nature of the study before they begin. Therefore, any participants who may have experienced any traumatic events regarding exercise or would feel uncomfortable about talking openly about their thoughts and experiences, would be able to withdraw from the study at any time. However, if the participant does feel distressed while completing the study, the researcher and the supervisor's details will be provided for support if needed. 5. At the end of the study, the participant will be provided with a debrief and an information sheet to provide them with the aim of the study. The sheet will also include both the researcher and the supervisor's contact details if the participant had any questions or concerns about the study.
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	6. To prevent any of the participants' personal data being revealed, each participant will appear as their EMS number. This will ensure their data is anonymous and won't be able to be traced back to them. 7. To prevent any data being leaked, all the data from the study will be saved on password-protected computer and stored on OneDrive, that requires authentic approval. Therefore, only the researcher will have access to the anonymous data. <i>(this box should expand as you type)</i>
3	If research activity may include sensitive, embarrassing or upsetting topics (e.g. sexual activity, drug use) or issues likely to disclose information requiring further action (e.g. criminal activity), give details of the procedures to deal with these issues, including any support/advice (e.g. helpline numbers) to be offered to participants. Note that where applicable, consent procedures should make it clear that if something potentially or actually illegal is discovered in the course of a project, it may need to be disclosed to the proper authorities
	<i>(this box should expand as you type)</i>
4	Risks to the investigator For example: personal health & safety, physical harm, emotional distress, risk of accusation of harm/impropriety, conflict of interest

	Risk to the investigator: 1. The researcher's email will be provided at the end of the study for the participant to ask any questions. Therefore, a potential risk could be for the researcher to receive negative or unwelcomed emails from the participant. 2. The student researcher may find themselves being asked for information outside of their scope of knowledge as an undergraduate student. 3. Feelings of emotional distress if they were to read a response from a participant that included a negative experience or any traumatic events regarding exercise. 4. If the researcher was to be accused of harm/impropriety if the participant feels they are not happy about something that has happened during the study. <i>(this box should expand as you type)</i>	<i>How you will mitigate the risk to the investigator:</i> 1. The researcher will only provide their university email, not their personal email. If the researcher was to receive any negative messages from the participant, it would be immediately reported to the researcher's study supervisor. 2. If the researcher is unable to answer the question, it would be forwarded to the researcher's study supervisor. 3. The researcher would arise any issues that occurred and receive guidance from the research supervisor. 4. It will be ensured that the researcher follows all UWTSD and BPS researcher codes of conduct and research guidelines including the BPS code of ethics and conduct (July 2018) and the BPS code of human research ethics (April 2021). The study will not take place until all elements have been approved by the supervisor. <i>(this box should expand as you type)</i>
5	University/institutional risks	

	For example: adverse publicity, financial loss, data protection	
	Risk to the University: 1. The reputation and integrity of UWTSD and the discipline of Psychology could be endangered if researchers do not adhere to codes of ethics and research protocols. 2. Data could be exposed, leaked or used for other purposes. <i>(this box should expand as you type)</i>	<i>How you will mitigate the risk to the University:</i> 1. The UWTSD Research Ethics & Integrity Code of Practice will be followed at every stage of the proposed study to minimise any potential risks to the institution from arising. Professionalism will always be exhibited by all researchers. 2. The data collected will be stored in accordance with UWTSD Research Data Management (RDM) rules and only used for the intended purpose, in compliance with ethical guidelines set out by UWTSD Research Ethics & Integrity Code of Practice policy and British Psychology Society (BPS) code of ethics. To minimise any risk to UWTSD and the psychology department, all collected data will be stored securely through the Qualtrics platform. <i>(this box should expand as you type)</i>
6	Environmental risks For example: accidental spillage of pollutants, damage to local ecosystems	
	Risk to the environment: N/A	<i>How you will mitigate the risk to environment:</i>

	(this box should expand as you type)	(this box should expand as you type)
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Disclosure and Barring Service				
	If the research activity involves children or vulnerable adults, a Disclosure and Barring Service (DBS) certificate must be obtained before any contact with such participants.	YES	NO	N/A
7	Does your research require you to hold a current DBS Certificate?	☐	☒	☐
8	If YES, please give the certificate number. If the certificate number is not available please write "Pending"; in this case any ethical approval will be subject to providing the appropriate certificate number.			

SECTION I: Feedback, Consent and Confidentiality

1	Feedback What de-briefing and feedback will be provided to participants, how will this be done and when?
	The participant will be provided with a debrief form at the end of the study or if the participant elects to terminate the study early. After the participant completes the last section of the study, the open ended questions, the participant will have an option to select 'next', and then the debrief form will appear. The debrief form will provide the participant with aim and objectives of the study, how their data will be used and stored and the researcher's and supervisor's contact details for any

	further details or questions regarding the study. View the appendices for the debrief form. <i>(this box should expand as you type)</i>
2	Informed consent Describe the arrangements to inform potential participants, before providing consent, of what is involved in participating. Describe the arrangements for participants to provide full consent before data collection begins. If gaining consent in this way is inappropriate, explain how consent will be obtained and recorded in accordance with prevailing data protection legislation.
	The participant will be provided with an information sheet prior to the study. The information sheet will include key information regarding the study and provide details about what will be expected of you as a participant. After the participant has read through the information sheet, the next page will include a consent form. The participant will have the option to consent to participating in the study, that they allow for their data to be used anonymously and that they understand the study. There will be a tick box to confirm that they have read the information sheet and consent to being part of the study. The participant will need to first complete the demographics form stating their gender and that they are over the age of 18, and then the study will begin. <i>(this box should expand as you type)</i>
3	Confidentiality / Anonymity Set out how anonymity of participants and confidentiality will be ensured in any outputs. If anonymity is not being offered, explain why this is the case.
	There will not be any identifying information included in the analysis of the data. Likewise, as the research is being conducted online, the participant's will appear as their EMS numbers, therefore they are not at risk from being detected. Similarly, the participants recruited via the UWTSD Facebook page will appear as a number, not their name, to keep their identity anonymous. <i>(this box should expand as you type)</i>

SECTION J: Data Protection and Storage

	Does the research activity involve personal data (as defined by the General Data Protection Regulation 2016 “GDPR” and the Data Protection Act 2018 “DPA”)?	YES	NO
1	“Personal data” means any information relating to an identified or identifiable natural person (‘data subject’). An identifiable natural person is one who can be identified, directly or indirectly, in particular by reference to an identifier such as a name, an identification number, location data, an online identifier or to one or more factors specific to the physical, physiological, genetic, mental, economic, cultural or social identity of that natural person. Any video or audio recordings of participants is considered to be personal data.	X	☐
	If YES, provide a description of the data and explain why this data needs to be collected:		
2	Demographic information of the participant, including age and gender, will be needed for the participant section of the final report. <i>(this box should expand as you type)</i>		
	Does it involve special category data (as defined by the GDPR)?	YES	NO
3	“Special category data” means sensitive personal data consisting of information as to the data subjects’ – (a) racial or ethnic origin, (b) political opinions, (c) religious beliefs or other beliefs of a similar nature, (d) membership of a trade union (within the meaning of the Trade Union and Labour Relations (Consolidation) Act 1992), (e) physical or mental health or condition, (f) sexual life,	X	☐

	(g) <i>genetics</i> , (h) <i>biometric data (as used for ID purposes)</i> ,		
	If YES, provide a description of the special category data and explain why this data needs to be collected:		
4	This research study will be exploring the impact of different types of exercise and the level of exercise on an individual's well-being. Therefore, the participants are required to complete a short quantitative questionnaire regarding their level of participation in sport and the completion of the Worrick Edinburgh Well-being scale to indicate whether they're high or low on the well-being scale. Lastly, the participants will be presented with qualitative questions where they're asked to elaborate on their thoughts and experiences of exercise. With the data collected, the researcher will be able to explore whether participants who are highly or lowly active score higher or lower on the well-being scale.		

	Will data from the research activity (collected data, drafts of the thesis, or materials for publication) be stored in any of the following ways?	YES	NO
5	Manual files (i.e. in paper form)?	☐	☒
6	University computers?	☐	☒
7	Private company computers?	☐	☒
8	Home or other personal computers?	☒	☐
9	Laptop computers/ CDs/ Portable disk-drives/ memory sticks?	☐	☒
10	"Cloud" storage or websites?	☒	☐
11	Other – specify:	☐	☒
12	For all stored data, explain the measures in place to ensure the security of the data collected, data confidentiality, including details of backup procedures, password protection, encryption, anonymisation and pseudonymisation:		
	Once the participants have completed the quantitative questionnaire regarding the participants participation in physical exercise, the Worrick Edinburgh well-being scale and the open-ended questionnaire, the data will be sent to the researcher, which will be accessed via a password protected personal computer. All the researchers work is saved onto the UWTSD OneDrive network, which is strictly only used by the researcher on their password protected personal computer. The UWTSD app requires using the authenticator app to access any work on the Hwb.		

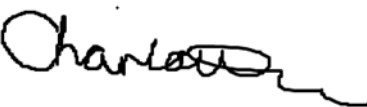
	The authenticator app forwards a code to the researcher's phone, which expires after 10 seconds. <i>(this box should expand as you type)</i>
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	Data Protection		
	Will the research activity involve any of the following activities:	YES	NO
13	Electronic transfer of data in any form?	☒	☐
14	Sharing of data with others at the University outside of the immediate research team?	☐	☒
15	Sharing of data with other organisations?	☐	☒
16	Export of data outside the UK or importing of data from outside the UK?	☐	☒
17	Use of personal addresses, postcodes, faxes, emails or telephone numbers?	☐	☒
18	Publication of data that might allow identification of individuals?	☐	☒
19	Use of data management system?	☒	☐
20	Data archiving?	☐	☒
21	If YES to any question, please provide full details, explaining how this will be conducted in accordance with the GDPR and Data Protection Act (2018) (and any international equivalents, where appropriate):		
	The data that will be collected from the participants on Qualtrics, including both the quantitative and qualitative questions and the well-being scale data. Once the data has been collected, the researcher will transfer the data to SPSS to finalise the results. In order to transfer the data to SPSS, the researcher will need to export the answers from Qualtrics by downloading them to the researcher' password protected laptop and then transfer the data onto SPSS to run the analysis. <i>(this box should expand as you type)</i>		
22	List all who will have access to the data generated by the research activity:		
	Principle researcher – Charlotte Evans Empirical project supervisor – Stuart Jones Any external examiners <i>(this box should expand as you type)</i>		
23	List who will have control of, and act as custodian(s) for, data generated by the research activity:		

	Principle researcher – Charlotte Evans		
	<i>(this box should expand as you type)</i>		
24	Give details of data storage arrangements, including security measures in place to protect the data, where data will be stored, how long for, and in what form. Will data be archived – if so how and if not why not.		
	Data will be in electronic form. All data will be held electronically, in a password protected file on a password protected private laptop. Data storage arrangements will all be in line with the university data management policy. The data from the participants will be collected and stored on Qualtrics, which is a password protected application, that only the researcher can access. The data will remain on Qualtrics until the researcher has received a minimum of fifty participants for the study, which could be between 4 and 6 weeks. After the researcher has collected enough data, the data from the quantitative and Worrick Edinburgh well-being scale will be transferred to SPSS. The researcher will complete the 2x2 Anova with this data and then will erase all the data, after the analysis is complete. Similarly, for the thematic analysis, the researcher will conduct the analysis using the open-ended question's answers to explore the participants experiences and feelings regarding exercise. This analysis will take up to a week, and then the data will be erased after the researcher has completed the thematic analysis. <i>(this box should expand as you type)</i>		
25	Please indicate if your data will be stored in the UWTSD Research Data Repository (see https://researchdata.uwtsd.ac.uk/). If so please explain. <i>(Most relevant to academic staff)</i>		
	Data will not be held in the UWTSD Research Data Repository at this stage of study. <i>(this box should expand as you type)</i>		
26	Confirm that you have read the UWTSD guidance on data management (see https://www.uwtsd.ac.uk/library/research-data-management/)	YES	☒
27	Confirm that you are aware that you need to keep all data until after your research has completed or the end of your funding	YES	☒

SECTION K: Declaration

	The information which I have provided is correct and complete to the best of my knowledge. I have attempted to identify any risks and issues related to the research activity and acknowledge my obligations and the rights of the participants.
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	In submitting this application I hereby confirm that I undertake to ensure that the above named research activity will meet the University's Research Ethics and Integrity Code of Practice which is published on the website: https://www.uwtsd.ac.uk/research/research-ethics/		
1	Signature of applicant:		Date: 12/10/24

For STUDENT Submissions:

2	Director of Studies/Supervisor:	Stuart Jones	Date: 26 th November, 2024.
3	Signature:	Stuart Jones	

For STAFF Submissions:

4	Academic Director/ Assistant Dean:		Date:
5	Signature:		

Checklist: Please complete the checklist below to ensure that you have completed the form according to the guidelines and attached any required documentation:

☒	I have read the guidance notes supplied before completing the form.
☒	I have completed ALL RELEVANT sections of the form in full.
☒	I confirm that the research activity has received approval in principle
☐	I have attached a copy of final/interim approval from external organisation (where appropriate)
☐	I have attached a full risk assessment (where appropriate) ONLY TICK IF YOU HAVE ATTACHED A FULL RISK ASSESSMENT
☒	I understand that it is my responsibility to ensure that the above named research activity will meet the University's Research Ethics and Integrity Code of Practice.

☒	I understand that before commencing data collection all documents aimed at respondents (including information sheets, consent forms, questionnaires, interview schedules etc.) must be confirmed by the DoS/Supervisor, module tutor or Academic Director.
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16 Appendix 9– Information sheet

This document provides key information regarding the study and provides details about what will be expected of you as a participant. Therefore, please read this information carefully before providing your consent to take part.

During this study you will be required to do the following:

- Complete a demographics form detailing your age and gender.
- Complete the consent to show willingness to participate and understanding of the study.
- Participants will first be presented with 3 short quantitative questions. The participants must tick the statement which best suits them.
- Participants will be required to complete the second phase of the study, the Warrick Edinburgh Well-being scale. Using a 5-point Likert scale, participants must tick the box that most accurately represents how they have experienced each statement during the previous two weeks.
- Participants will be shown 5 qualitative questions, where they are expected to answer the open-ended questions with their thoughts and feelings regarding participation in exercise.

To conclude the study, the participants will be provided with a debrief sheet to explain the aim and objectives of the study, how the participant's data will be used and stored.

If you have any questions, please feel free to contact the researcher on:

2206694@student.uwtsd.ac.uk

If you are happy to take part in this study, please read and complete the consent form.

17 Appendix 10– Consent paragraph

Study Consent Form

I understand that this research study is being carried out by a level 6 Applied Psychology Student for their dissertation and that taking part in this study will involve the completion of the Worrick Edinburgh well-being scale and filling out a questionnaire.

This questionnaire will take approximately 20 minutes to complete. I understand that participation in this study is voluntary, and I am free to withdraw participation during or at the end of the study without giving a reason. I understand that once I complete the study, I will have 24 hours to contact the researcher to withdraw my data.

I am aware that if I have concerns about the study, I can discuss these concerns with the researcher at any time during or after the study. I understand that I will be provided with the contact details of the research supervisor at the end of the study, should I have any concerns. I understand that the information I provide will be held confidentially and anonymously. This data will be stored till the researcher finishes writing their dissertation in accordance with the Data Protection Act. I also understand that at the end of the study, I will be provided with a debrief form and the opportunity to discuss any issues with the researcher. I understand that by clicking the consent button prior to commencing study, I give consent to the researcher to use the data provided by me. If you feel uncomfortable about any questioning of this subject surrounding exercise or well-being, you are advised not to take part in this study. If you are happy to take part in this study, please continue to the consent form and read carefully.

Please tick all the boxes below to confirm your consent into participating in this study:

I understand that I can withdraw from the study at any time by closing the browser.

I understand that my data will be held confidentially, and my identity will remain anonymous.

I consent to taking part in this study.

17 Appendix 11 – Debrief paragraph

Thank you for participating in this study.

Exploring the impact of different types of exercise and the level of exercise on an individual's well-being.

The aim of this study was to explore the impact of different types of exercise and the level of exercise on an individual's well-being.

We specifically wanted to explore whether participants who are highly or lowly physically active score higher or lower on the Warrick Edinburgh well-being scale. If you wish to withdraw your data from the study, you must tell the researcher now. After this, all your data will remain confidential, and we will not trace it back to you.

If taking part in this study has raised any questions, please speak to the researchers Charlotte Evans on 2206694@student.uwtsd.ac.uk or contact the academic supervisor – Stuart Jones s.a.jones@uwtsd.ac.uk

Thank you once again for taking time to participate in this study.

BSc Honours Applied Psychology University of Wales Trinity Saint David, Carmarthen