

The Association between Group/Team Sport and Perceived Life Satisfaction, Psychological  
Well-being and Self-Esteem in an Adult population.

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### Abstract

**Aims:** The aim of the current study is to examine any differences in levels of Life Satisfaction, Psychological well-being and self-esteem that may be present in those that engage in group sports/exercise when compared to those that exercise/sport alone within an adult population aged 18-55. **Method:** A questionnaire was administered through Microsoft forms to participants ( $n=187$ ) which was shared on social media and consisted of Four questionnaires. Basic Demographic information was collected alongside information regarding exercise/sports engagement. Three additional questionnaires measuring Life satisfaction, Psychological well-being and self-esteem were also administered. **Results:** Findings showed that exercise engagement style had no impact on levels of self-reported life satisfaction or self-esteem. A Statistically significant result was found in Psychological well-being with participants that engage in both group and individual exercise/sport scoring higher in Psychological well-being when compared to those that exercise solely on their own. ( $P = 0.2$ ) **Conclusion:** Findings provide a greater understanding of the impact of social engagement/social cohesion on self-reported levels of Life satisfaction, Psychological well-being and Self-esteem in a young and middle aged adult population. These findings have important implications which are discussed below.

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## Literature Review

### Exercise/sport

The World Health Organisation (2020) reports that more than a quarter of the world's adult population are inadequately active; they report that physical inactivity is one of the leading non-disease related risk factors for mortality. The World Health Organisation "Who" define physical activity as any bodily movement produced by the skeletal muscle that requires energy expenditure. Both moderate and vigorous intensity exercise has been found to improve health. People who are inactive have been found to have an increased risk of death compared to those that exercise adequately. Higher amounts of inactivity is associated with numerous health problems such as increased risk of diabetes, Cardiovascular disease and cancer mortality (World health Organisation; 2020).

Research is vast in the area of physical benefits of exercise across all age groups. A large scale Prospective cohort study completed in 2011 found that those that exercise as little as 15 minutes daily had a 14% reduction in all-cause mortality and an increase of life expectancy by 3 years. Additional increases were found as amount of time exercising increased. Benefits were found across all age groups and gender and benefits were also applicable to those with an increased risk of cardiovascular disease. Participants in the inactive group had a 17% increased risk of mortality (Wen., et al 2011). As Mental health issues rise globally research has also focused on physical exercise as a potential protective mediator for mental health disorders (Saxena., et al 2005; Paluska & Schwenk,2000). Several studies support the positive psychological benefits of exercise which are discussed below. A study carried out in February 2021 in Ireland found that among 8636 teenage participants aged between 10-17, those that participated in physical actives had higher score in positive mental health indicators and scored lower in mental health problem indicators ( Molcho , et

al., 2021). A cross sectional study published in 2018 also found improvements in mental health in those that exercised. 1.2 million participants took part in this study between 2011-2015. Exercise duration, frequency and intensity were assessed alongside daily self-reported mental health evaluations. Individuals that took part in exercise reported 43.2% fewer days of poor mental health. All exercise types showed to lower mental health burdens with team exercise showing the largest association, followed by aerobic and gym activities. Duration of exercise being 45minutes 3-5 times a weekly had the biggest influence on mental health burdens (Chekroud,, et al 2018).

### **Group exercise/sport**

The Mental health benefits of participation in exercise/sport may vary between those that train individually and those that train on a team or in a group. Higher levels of self-reported anxiety and depression have been found in those that exercise alone versus those that exercise in groups. Those that exercised in groups also reported exercising for fun with associated secondary benefits including making friends (Pluhar., et al 2019) Along with the positive mental and physical benefits of exercise the added advantage of participation in a Group/Team sports may be the potential benefit of social cohesion alongside the positive physical and mental health benefits of exercise. A study carried out in 2007 that included 355 females aged between 18-82 found that the perception of levels of support from family and sports coaches impacted greatly on levels of intrinsic motivation, health, habitual physical exercise and life satisfaction (Moreno-Murcia et al., 2017)

Having a supportive network can increase motivation to reach physical goals, and promote constant engagement in activity that is beneficial to long term health and life quality. Group cohesion in sport has been defined as “a dynamic process which is reflected in the tendency of a group to stick together and remain united in the pursuit of its instrumental and

objectives and / or for the satisfaction of member affective needs” (Carron & Brawley., 2008). The benefit of group cohesion in exercise/sport is that people adhere and commit to training, are more motivated to sustain the exercise which has been shown to have positive impact on their physical and mental health and also the feeling of bonding, camaraderie, social support and increasing psychological well-being (Christensen., et al 2006). The benefits of having a supportive social circle are explored in great detail within psychological research. In 2005 a large scale analysis was carried out in 27 European countries to assess whether social cohesion as a collective property is among the key societal conditions for human happiness, they found that people were happier and psychologically healthier in a social cohesive society (Dragolov., et al 2016)

A bidirectional link has also been found in psychological literature, Community social cohesion has also been found to increase physical activity. In a large scale study that included 1570 communities involving 245,150 participants, after adjusting for demographic factors such as age, income, sex and education both individual and community level social cohesion was found to be positively associated with physical activity (Yip., et al 2016).

Research is predominantly positive when it comes to social cohesion and group sports but some studies have suggested a negative impact may also be found in competitive team sports. This could possibly be due to the level of competitiveness among the group dynamic, and potential impacts of personality types between the group. Hardy., et al (2005) found that in a small sample size of 105 athletes, 56% reported possible disadvantages of social cohesion and 36% reported possible disadvantages of high task cohesion. Both group and personal level consequences were reported. Hardy., et al (2005) suggests a possible reason for this being the added pressure to carry out group responsibilities and to satisfy the expectations of the high value teammates.



**Life satisfaction and exercise/sport**

Previous research has shown that physical activity may play an integral role in promoting life satisfaction (Maher et al., 2013). Although the mechanisms underlying this is heavily debated in psychological literature with some researchers supporting top down theories which suggests that satisfaction with domains of life is mainly an effect of overall life satisfaction, which predominantly depends on personality traits and fixed genetic influences. While other researchers support bottom up theory which suggests that life satisfaction is the average of satisfaction felt within different aspects (domains) of life (Headey., 2014). Although no agreement has been made in terms of the underpinnings of life satisfaction, numerous studies suggest that physical exercise has a positive effect on Life satisfaction.

Longitudinal research in 2015 found that in long distance runners, who typically train on their own; those that participated in running events had an increase in life satisfaction. Sato., et al (2015) suggest that the running event enhances life satisfaction by providing positive experiences through event participation and forming psychological involvement in physical involvement. Although it appears that this increase is short lived and a decrease was found in life satisfaction after the event. Social cohesion and community involvement at these events have been suggested as being the biggest influence on the increase of life satisfaction (Chalip, 2006) A study carried out to assess life satisfaction scores within 110 Polish sport team members and 90 Polish martial arts practitioners found that all participants scored higher in levels of life satisfaction when compared to the Polish general public (Kusnierz., et al 2020). Kusnierz., et al (2020) suggests a possible reason for this is that health behaviours are a significant determinant of life satisfaction and these health behaviours are often daily habits in those involved in sports. Participating in a sport at any level can bring a range of benefits such as promoting increased physical activity and health promoting behaviours.

Better mental health outcomes were also found in a large group of 50,054 college participants. Higher life satisfaction and fewer mental health problems alongside less feeling of loneliness and fewer alcohol problems were reported in team sports players when compared with students who do not engage in sport/exercise. Slightly better mental health outcomes were found in those that engage in team sport when compared to those that sport individually (Grasdalsmoen et al., 2022).

According to Mutz., et al (2021) levels of life satisfaction appear to be increased in those that participate in a diverse range of exercise/sports. The biggest impact on life satisfaction was found in those with a broader repertoire of sporting activities paired with exercising for pleasure as opposed to health reasons. In line with bottom up theory this increase in life satisfaction may be higher in those that participate in a broad range of sporting activities as numerous areas such as, physical activity, social engagement and health behaviours are satisfied (Mutz., et al 2021).

### **Psychological well- being / sport**

Previous research supports the mental health benefits of physical activity; one area the benefits have been found is in psychological well-being. Ryff (1989) proposes six components of psychological functioning, self-acceptance, positive relations with others, autonomy, purpose in life, environmental mastery and personal growth. The more positive outcomes an individual feel in each area, the higher psychological well-being they have. Dionigi (2007) explored the relationship between physical activity and psychological well-being to understand the underlying mechanism. A group of older adults completed a 12-week resistance training program with interviews with participants carried out pre, during and post intervention. All participants reported enhanced psychological well-being, specifically in areas such as social interaction and self-efficacy along with physical enhancements such as increased mobility and endurance. This suggests exercise may be a potential protective factor

for psychological well-being in an aging population.

Although Kim et al., (2017) suggests the relationship between psychological well-being and physical activity is not linear, a bidirectional relationship may be present. In a large longitudinal study in 2017 which included 6030 participants, Kim et al, assessed baseline psychological well-being scores and physical exercise engagement levels over a period of 4 years and found that those with higher psychological well-being scores were more likely to engage in physical activities when compared to those with lower psychological well-being scores. They suggest possible reasons for this being that people with higher psychological well-being are more likely to seek out more optimal life outcomes and higher psychological well-being may lead to higher engagement in physical activity as it influences key psychological processes that impact exercise engagement such as goal setting, self-efficacy and motivation (Kim et al., 2017).

It should be noted also that age dependent factors may be influential when assessing certain aspects of Psychological well-being and physical activity. As previously mentioned, older adults engaging in physical activity rate social engagement as one of the top benefits, this may due to older adults being at an increased risk of social isolation (Dionigi, 2007). In contrast to Dionigi (2007) findings, a sample of 1148 young adults reported higher psychological well-being scores in those that participant in individual sport. Although high levels of psychological well-being were found across all sports participants when compared with those that don't engage in sport activity at all, statistically higher levels were found in those that participate individually. This suggests that in younger adults, social cohesion in a sport/exercise environment may not be as beneficial as it is in an older age group. Possibly due to numerous other factors such as more social engagement in other areas of their life, such as college, work etc. Dionigi, (2007) suggests one possible reason for this being that those that participate in individual sports have been found to have higher emotional

intelligence (Reynoso-Sánchez et al, 2021) which in turn has been positively associated with psychological well-being (Guerra-Bustamante et al., 2019).

### **Self-esteem and sport/exercise**

According to Rosenberg (1965), Self-esteem is one's positive or negative attitude towards oneself and one's evaluation of one's overall feelings and thoughts. The benefit of physical exercise/sport in relation to self-esteem appears to be debated between researchers. (Mazereel, et al 2021) propose that physical activity increases self-esteem but only in those with greater self-esteem to begin with. People need higher self-esteem to take up exercise/sport in a group environment to begin with. In contrast to Mazereel et al (2021) findings, a longitudinal study carried out in 2007 assessed the direction of the relationship between self-esteem and physical exercise. 197 adolescent girls were assessed at three time points, age 9, 11 and 13. A significant lag effect was found between physical activity and self-esteem. Essentially girls that participated in higher amounts of physical activity at ages 9 and 11 years old predicted higher self-esteem at ages 11 and 13 years respectively while higher levels of self-esteem in aged 9 and 11 year olds did not show to impact levels of physical activity at ages 11 and 13 (Schmalz et al., 2007).

Schmalz et al., (2007) suggest that possible reasons for this may be related to developmental issues such as social expectations and gender influences. It should be noted that this study has socio-economic limitations as all girls were from middle to higher income families and well educated. Slutzky, & Simpkins, (2009) investigated the relationship between sport engagement and self-esteem. In a teenage sample they found that even in participants who were low in peer social acceptance, team sports participation increased self-esteem just as much as their socially accepted peers. This increase was found through an

increase of self-concept which was not found in individual sports participants. As time spent in team sports increased so did the increase in self-concept. The increase in self-concept was found to be indirectly associated to an increase in Self-esteem.

Kim & Ahn, (2021) carried out similar research on exercise engagement and self-esteem in university students. 189 students took part in a 6-week exercise intervention with survey information taken pre and post intervention. An increase in self-esteem was found post intervention and also an interesting finding was that the more positively the physical concept changed the higher the increase in self-esteem which was also evident in Slutzky, & Simpkins, (2009) research as mentioned previously. An increase in self-esteem was also found in an older adult population (Mcauley et al., 2000). Participants were assessed prior to exercise intervention and after completion, this study also assessed participants 6 months after completion and found a decline in the positive self-esteem benefits that had been found straight after the intervention. This suggests that increases in self-esteem may only be present once the physical activity is routinely carried out.

### **Adult population and exercise/sport**

One of the potential benefits of group exercise/sport is social cohesion, research predominantly supports this as described above. Research in 2021 suggests that one in 10 adults are socially isolated, with isolation increasing with increasing age. Higher prevalence has been found in men, while people from a lower socio demographic background were also more at risk (Rohr et al., 2021) This has numerous implications, one particular implication is that those who are socially isolated are at an increased of early mortality (Holt-Lunstad et al., 2015). Not only does social isolation impact physical health it has been found to impact mental health also. A large systematic review found that numerous mental health issues present in those socially isolated, although differences are present between individuals. Those

that are socially isolated are at an increased risk of social anxiety, generalized anxiety, loneliness and depression (Loades et al., 2020)

### **Current study**

Research in the area of physical activity and sport/exercise predominantly focuses on subgroups of the population such as children, adolescent's, older adults and those with a disability. This research has shown numerous psychological benefits and also potential protective factors for mental health struggles. There is a gap in the literature in relation to young and middle aged adults which are greatly understudied but potentially may reap the same benefits. Additionally, research supports the human need for social interaction and the psychological benefits of social cohesion. The aim of this current study is to examine any differences in levels of Life satisfaction, Psychological well-being and self-esteem that may be present in those that engage in group sports/exercise when compared to those that exercise/sport alone. Three groups were assessed to examine differences among the groups, those that exercise/sport on their own, those that exercise/sport in a group environment and those that participate in both group and individual exercise/sport. This study is important to help identify factors in exercise/sport engagement type that may have positive mental health outcomes in an adult population.

Research question 1: Is there a difference in perceived life satisfaction between those that exercise alone, those that exercise in a group and those that participate in both group and individual exercise/sport? Hypothesis for research question 1: Higher levels of perceived life satisfaction will be associated with those that take part in group exercise/sport. Essentially, the more social engagement in exercise/sport the higher perceived life satisfaction.

Research question 2: Is there a difference in Psychological well-being between those that exercise alone, those that exercise in a group and those that participate in both group and

individual exercise/sport? Hypothesis for research question 2: Higher levels of Psychological well-being will be associated with those that take part in group exercise/sport. Essentially, the more social engagement in exercise/sport the higher Psychological well-being.

Research question 3: Is there a difference in Self-esteem between those that exercise alone, those that exercise in a group and those that participate in both group and individual exercise/sport? Hypothesis for research question 3: Higher levels of Self-esteem will be associated with those that take part in group exercise/sport. Essentially, the more social engagement in exercise/sport the higher Self-esteem.

## **Methods**

### **Participants**

The research sample within this current study consisted of 187 Participants. 106 females and 81 males. Participants were sourced through a mix of convenience and snowball sampling using the researcher's social media accounts (Facebook and WhatsApp). The study was forwarded to gyms and sports group via social media to reach a wider demographic and make it as generalizable as possible. The target population groups for this research were young and middle aged adults between 18-55.

Demographic information collected was as follows. 73 identified as young adults aged between 18-35 while 114 identified as middle aged adults aged between 36-55. 54 participants identified as taking part in individual sports/exercise, 40 identified as taking part in group sport/exercise and 93 identified as taking part in both group and individual exercise/sport. 59 participants engaged in exercise/sport competitively while 128 non-competitively. 99 participants engaged in sports/exercise 1-3 times weekly, 72 participants engaged 4-6 times weekly, 11 participants engaged 7-9 times weekly and 5 engaged 11 times or more. In line with Ethical considerations, informed consent was gained prior to participation and participants were not identifiable.

Exclusion criteria included, older adults, children and teenagers.

## **Measures**

### **Demographic information**

The following demographic information was collected. Five questions were asked. Number 1, Gender, which included the following 4 options, Male, Female, Gender expansive and Other. Number 2, age group in which participant identified as being part of, options 18-



35 and 36-55. Number 3, Which do you identify with most? Do you identify as partaking in individual exercise/sport, do you identify as partaking in group/team exercise/sport? or do you identify as partaking in both group/individual sport/exercise? Number 4, Is this sport competitive or non-competitive? Number 5, How many times a week on average do you exercise/sport? Which had 4 options, 0-3 ,4-6 ,7-10 and 11 plus. See Appendix I

### **Satisfaction with life Scale**

The Satisfaction with life scale (SWLS; Deiner, 1985) was used to assess participant's self-reported levels of life satisfaction, this is a 5 item Likert scale with items answered on a 7-point scale ranging from 1 "Strongly disagree" to 7 "Strongly agree. Sample items include "The conditions of my life are excellent" and "I am satisfied with my life". Scoring consists of a raw score (between 5 and 35) with higher scores indicating higher levels of life satisfaction. The Satisfaction with life scale is shown to be a valid and reliable measure of life satisfaction. Original research has indicated an Internal consistency of .87 and retest reliability  $r=.82$  (Deiner et al., 1985). The scale has good reliability within the current study ( $a=.86$ ). See Appendix II

### **Psychological Well-being scale**

The Psychological well-being scale (Pwb; Ryff et al., 2007; adapted from Ryff, 1989). was used to access participant's levels of psychological well-being. This 42 item scale measures six aspects of well-being and happiness. The six subscales include Autonomy (e.g., "I tend to worry about what other people think of me"); Environmental mastery (e.g., "The demands of everyday life often get me down"); Personal growth (e.g., "For me, life has been a continuous process of learning, changing, and growth"); Positive relations with others (e.g., "I know that I can trust my friends, and they know they can trust me"); Purpose

in life (e.g., “ I have a sense of direction and purpose in life”); and Self-acceptance (e.g., “I like most aspects of my personality”). These 42 questions are answered on a 7-point scale ranging from 1 “Strongly agree” to 7 “Strongly disagree”. Several questions within the 42 item scale are reversed scored as they are worded in the opposite direction to what the scale is measuring. Higher scores indicate higher levels of psychological well-being. The psychological well-being scale is a valid and reliable measure of psychological well-being. Previous research indicates good reliability within the scale as a whole and also in each of the six subscales. Test–retest reliability for whole scale .82, subscales of Self-acceptance, Positive relations with others, Autonomy, Environmental Mastery, Purpose in life and personal growth were found to be .71, .77, .78, .77, .70 and .78 respectively (Bayani., et al 2008). The scale has good Reliability within the current study, whole scale ( $\alpha = .91$ ) subscales of Self-acceptance, Positive relations with others, Autonomy, Environmental Mastery, Purpose in life and personal growth were found to be .79, .71, .78, .76, .71 and .69 respectively. For scoring and scale information, See Appendix III

### **Self-esteem**

The Rosenberg Self-esteem scale (Rses, Rosenberg ,1965) was used to assess participant’s levels of self-esteem. This is a 10 item scale with sample questions including “I feel I am a person of worth” and “I certainly feel useless at times”. Questions are answered using a Four-point scale ranging from 1 “Strongly agree” to 4 “Strongly disagree”. Some items within this scale are reverse scored. Higher total scores indicate higher levels of self-esteem. The Rosenberg Self-esteem scale is a valid and reliable measure of self –esteem. Cronbachs alpha for various samples are generally in the range of .77 to .88 (see Blascovich and Tomaka, 1993 for further details). This scale has good reliability within the current study ( $\alpha = .90$ ). See Appendix IV

### Design and analysis

The research design of the present study is cross-sectional and descriptive as this allowed for data to be collected at one-time point and gave a broad overview of the area and the ability to compare levels of life satisfaction, well-being and self-esteem between those that participant in group sports/exercise, those that exercise/sport alone and those that do both. This research is Quantitative in nature, using questionnaire research to collect data. Three one-way between groups Anovas were conducted to assess the first, second and third Hypothesis.

This examined the differences between 1, Life Satisfaction scores between 3 groups, those that participate in individual exercise/sport, those that participate in group exercise/sport and those that those that do both. Independent Variables were those that train individually, those that train in a group and those that do both. Dependent Variable was Life satisfaction. 2) Psychological Well-being scores between 3 groups, those that participate in individual exercise/sport, those that participate in group exercise/sport and those that those that do both. Independent Variables were those that train individually, those that train in a group and those that do both. Dependent Variable was Psychological well-being. 3) Self-esteem scores between 3 groups, those that participate in individual exercise/sport, those that participate in group exercise/sport and those that those that do both. Independent Variables were those that train individually, those that train in a group and those that do both. Dependent Variable was Self- esteem. An additional independent t-test was conducted to assess Psychological well-being and gender. Independent variable, gender (male/Female). Dependent variable Psychological wellbeing.

### **Procedure**

Data was collected through an online Microsoft forms Questionnaire. Participants were non-identifiable and anonymous. A Self-report questionnaire was shared by link via the researcher's social media accounts (Facebook and WhatsApp). The link included a description of criteria for involvement in the research; two questions were asked, are you aged between 18-55? Do you participate in exercise/sport? After clicking the link Participants were shown an information sheet which providing them with all the information about involvement in the study and risks of participation (See appendix V). Participants were required to provide informed consent to participate in this research prior to gaining entry to the questionnaire (see Appendix VI) Participants needed access to a laptop/computer or web access through mobile phone. A stable internet connection was needed and Questionnaire was completed by participants in their own time. The average completion time was 11 minutes with times varying between 6-23 minutes.

After consenting participants were asked a number of demographic questions relating to gender, age and exercise engagement/participation (see appendix I). The life satisfaction scale (see appendix II) The psychological well-being scale (see appendix III) and Rosenberg's self-esteem scale (see appendix IV) followed this. The last page contained debriefing information which included contact information for various helplines (see appendix VII). After participant's information was gathered on Microsoft forms it was transferred to Microsoft excel so data could be coded. After coding the data, it was then transferred to Spss to run statistical analysis.

### **Ethical considerations**

All data was collected within accordance of ethical guidelines of NCI. Risks and benefits of taking part was explained prior to commencement in this study and no incentives were offered. No identifying information was collected and all participants provided informed consent. A Debriefing sheet was also provided which included mental health service information.

## Results

### Descriptive statistics

The current data is taken from a sample of 187 participants ( $n = 187$ ). This consisted of 56.7% Females ( $n = 106$ ) and 43.3% Males ( $n = 81$ ). Relevant Categorical variable descriptions are provided in table 1, Continuous variable descriptions are provided in table 2.

Table 1

*frequencies – descriptive statistics for categorical variables*

Variable	Frequency	Valid %
<b>Gender</b>		
Females	106	56.7%
Males	81	43.3%
<b>Age group</b>		
18-35	73	39%
36-55	114	61%
<b>Sports/exercise participation</b>		
Individual	54	28.9%
Group	40	21.4%
Both individual and group	93	49.7%
<b>Sports/exercise type</b>		
Competitive	59	31.5%
Non-competitive	128	68.4%
<b>Times per week spent exercising/sport</b>		
1-3	99	52.9%

Exercise Engagement	Life Satisfaction	Psychological Well-being	Self-Esteem	
4-6		72		38.5%
7-9		11		5.9%
10+		5		2.7%

There are three continuous variables including Satisfaction with life, Psychological well-being and self-esteem. Means (M), Standard Deviation (SD) and Range were obtained which are presented in table 2 below. Preliminary analysis was performed on the data set and indicated that all continuous variables followed the assumptions of normality. Histograms for continuous variables were also obtained, see appendix VIII

*Table 2 for descriptive statistics – continuous variables*

Variable	M [95% CI]	SD	Range
Satisfaction with Life	24.90(24.07 - 25.73)	5.75	29
Psychological well-being	223.46(219.04-227.88)	30.6	194
Self- esteem	18.44(17.65-19.22)	5.45	30

### **Inferential Statistics**

Three one-way between groups Anovas were conducted in which Levenes tests for Homogeneity of variance revealed the Satisfaction with life measure violated the homogeneity of variance assumption  $p = 0.35$ . Welch and Brown-Forsythe were  $p = .20$  and  $p = .23$  respectively. The Psychological well-being measure and the Self-esteem measure did not violate the assumption of homogeneity with  $p = .50$  and  $p = .17$  respectively.

A one-way between groups Analysis of Variance was conducted to explore the impact of exercise engagement type on levels of life satisfaction as measured by the Satisfaction with life scale (Swls). Participants were divided into three groups, Group 1: Individual exercisers/sport participants ( $M = 24.1$ ) ( $SD = 6.9$ ) ( $95\%C.I. = [22.2 - 26.0]$ ); Group 2: Group exercisers/sport participants ( $M = 24.4$ ) ( $SD = 4.9$ ) ( $95\%C.I. = [22.8 - 26.0]$ ); Group 3: Individual and group exercisers/sport participants ( $M = 25.6$ ) ( $SD = 5.3$ ) ( $95\%C.I. = 24.5 - 26.7$ ). There was no Statistically significant difference between groups ( $P = .224$ )

A one-way between groups Analysis of Variance was conducted to explore the impact of exercise engagement type on levels of Psychological well-being as measured by the Psychological well-being scale (Pwb). Participants were divided into three groups, Group 1: Individual exercisers/sport participants ( $M = 217.2$ ) ( $SD = 34.2$ ) ( $95\%C.I. = [208.0 - 226.5]$ ); Group 2: Group exercisers/sport participants ( $M = 217.6$ ) ( $SD = 28.7$ ) ( $95\%C.I. = [208.4 - 226.8]$ ); Group 3: Individual and group exercisers/sport participants ( $M = 229.6$ ) ( $SD = 28.3$ ) ( $95\%C.I. = 223.7 - 235.4$ ). There was a statistically significant difference at the  $p < .05$  level in PWB scores for the three groups:  $F(2, 184) = 3.8, p = .02$ . Despite reaching significant significance, the actual difference in mean scores was quite small. The effect size, calculated using eta squared, was .02. Post-hoc comparisons using Tukey HSD test indicated that the mean score for group 1 was statistically different from group 3. Group 2 did not differ significantly from either 1 or 3.

A one-way between groups Analysis of Variance was conducted to explore the impact of exercise engagement type on levels of Self-esteem as measured by The Rosenberg Self-esteem scale (Rses). Participants were divided into three groups, Group 1: Individual exercisers/sport participants ( $M = 19.3$ ) ( $SD = 6.4$ ) ( $95\%C.I. = [17.5 - 21.0]$ ); Group 2:



Group exercisers/sport participants ( $M=18.6$ ) ( $SD = 5.2$ ) ( $95\%C.I. = [16.9-20.3]$ ); Group 3: Individual and group exercisers/sport participants ( $M = 17.8$ ) ( $SD = 4.9$ ) ( $95\%C.I. = 16.8 - 18.8$ ). There was no Statistically significant difference between groups ( $P = .276$ )

An additional independent T-test was conducted to compare Psychological well-being scores between female and males. There was no significant difference in scores for females ( $M = 221.3$ ) ( $SD = 32.9$ ) and males ( $M=226.2$ ) ( $SD = 27.2$ ;  $t(185) = -1.08$ ,  $p = .28$ , two-tailed). The magnitude of the differences in the means (mean difference =  $-4.9$ ,  $95\%CI - 13.8$  to  $4.0$ ) was very small (eta squared =  $-0.08$ ).

To summarise, there was no statistically significant difference between those that exercise/sport individually, in a group or both individually and in a group in levels of self-reported Life satisfaction or Self-esteem. There was a statistically significant difference in mean scores between the three groups for psychological well-being, although small. Post hoc results indicated that there was a significant difference in psychological well-being scores in those that exercise/ sport individually when compared to those that participate in both group and individual training. Those that exercise in both group and individual training environments had statistically higher levels of psychological well-being. The Group exercise group did not differ significantly from either those that train individually or those that do both.

## Discussion

The current study aimed to explore differences in self-reported levels of Life satisfaction, Psychological well-being and Self-esteem between those that exercise/sport individually, those that exercise/sport in a group and those that do both. The current study sought to identify factors in exercise/sport engagement type that may have positive mental health outcomes in an adult population.

It was Hypothesised from prior literature that, (H1) there would be higher self-reported levels of Life satisfaction in those that exercise/sport in a group environment. This was explored using a one-way between groups Analysis of Variance; from this it was found that there were no statistically significant differences between the three groups. This is inconsistent with previous research that suggested a positive effect on levels of life satisfaction in those that engage in a group sport/exercise environment when compared to those that exercise/sport individually (Kuśnierz. et al 2020; Mutz., et al 2021; Grasdalsmoen et al., 2022). This may be due to methodological differences, as previous studies predominantly controlled for certain variables such as age, Socio-demographic differences and gender.

For H2 it was Hypothesised from prior literature that there would be higher self-reported levels of Psychological well-being in those that exercise/sport in a group environment. This was explored using a one-way between groups Analysis of Variance; from this it was found that there was a statistically significant difference between two of the three groups. Essentially those that took part in both group and individual exercise had higher psychological well-being when compared to those that solely took part in individual exercise, no statistically significant difference was found between those that exercise/sport individually or in a group. This supports previous research that also found a relationship between exercise

engagement style and Psychological well-being (Kim et al., 2017; Diongi., 2007; Pluhar., et al 2019; Moreno-Murcia et al., 2017).

It was Hypothesised from prior literature that, (H3) there would be higher self-reported levels of self-esteem in those that exercise/sport in a group environment. This was explored using a one-way between groups Analysis of Variance; from this it was found that there were no statistically significant differences between the three groups. This is inconsistent with previous research that suggested a positive effect on levels of self-esteem in those that engage in a group sport/exercise environment (Schmalz et al., 2007; Kim & Ahn, 2021; Mcauley et al., 2000). This may be due to the bidirectional link between Self-esteem and physical activity which suggests that higher self-esteem is needed to engage in physical exercise/sport to begin with so potentially may not have varied greatly between the three groups in the current study (Mazereel., et al 2021). An additional Independent t-test explored Gender differences in Psychological well-being scores, no statistically significant result was found between male and female participants. This supports previous research that has also found no gender differences in respect to psychological well-being and exercise/sport (Sarma & Wilk, 2016).

Based on the above findings, Hypothesis 1 and 3 are rejected and Hypothesis 2 is partially accepted.

One potential reason for the non-statistical significant result found in regards to Life Satisfaction could be that these previous studies, particularly Grasdalsmoen et al., (2022) the increase in life satisfaction between individual and team sports players was statistically relatively small, the largest increase was found when compared to non-exercise groups. The smaller uneven sample size within the current study may not have been statistically powerful enough to provide accurate results and may have potentially limited findings.

It should be noted that although no statistically significant result was found between groups and the social engagement aspect does not appear to have had an impact on perceived Life satisfaction in this particular sample, it does appear that satisfaction with life is increased when compared to non-sports/exercisers as was also found in Grasdalsmoen et al., 2022 research. Within the current study, the mean of each group was ( $M= 24.1$ ) individual participants ( $M = 24.4$ ) group participants and participants who do both ( $M = 25.6$ ). Deiner, (1985) scoring of 5-35 suggests the mean of each group was relatively high. This relatively high life satisfaction score may also be due to numerous other variables. Previous research has indicated higher life satisfaction in young and middle aged adults which may have also influenced the higher mean scores in the current sample (Maher et al., 2015)

Another potential reason for the non-significant result may be that Data was collected during a global pandemic and social engagement through sport/exercise was limited/restricted which may have impacted participant's perceptions. Following Bottom up theory (Headey, 2014), other Domains of life satisfaction such as job losses, financial issues etc may have also been impacted through that pandemic which potentially may have influenced results. Future research should be carried out post Pandemic when social engagement is more feasible.

In partial support of the second Hypothesis, participants who engaged in both a group and individual training environment scored higher in psychological well-being compared to those that exercise/sport alone. The current study supports previous research (Chritensen, U., et al 2006; Kim et al., (2017) but also contradicts Dionigi (2007) research in a young adult population that found that those that exercise individually had higher psychological well-being. A possible reason for the discrepancies between studies may be that the age of participants in the current study was a mix of both young (39%) and middle (61%) aged adults. Dionigi (2007) also had a large sample size of 1148 young adult participants which may have yielded more statistical significance. Within the current study no statistically

significant result was found between those that engage in just group sports when compared to those that train individually and those that do both. This possibly could be due to the uneven sample size with only 40 participants in the group exercise group. Future studies should include an even sample size for more reliable results.

As this research was Quantitative in nature and all the research is predominantly Quantitative in relation to Physical activity and psychological well-being, Future studies could gain more insight into these complex mechanisms through Qualitative measures. The current study suggests that those that engage in a larger range of Physical activity are psychologically happier. This has numerous implications which are described below.

The current study found no statistically significant difference between the three groups in relation to Self-esteem. Self-esteem appears to be more complex, previous research has shown an indirect link between physical activity, self-concept and self-esteem (Slutzky, & Simpkins, 2009; Schmalz et al., 2007). Both previous studies used an adolescent population and also a control group for comparison. They both found increases in self-esteem in team sports participants in comparison to individual sports participants through an increase in self-concept. Its possible due to the age range of participants within the current study that self-concept may be well established in this population so this in-direct link may not be as influential in an adult population.

Mcauley et al., (2000) found that self-esteem only increased as long as the participant was involved in exercise. As length of time involved in exercise/sport was not collected within the current study and the limitation/Restrictions during a pandemic may have influenced amount of time of involvement in exercise/sport; this potentially may have affected the reliability of results. Future studies should include self-concept and length of time involved in sport/exercise to get a more in-depth overview of the influence of these variables in relation to self-esteem and physical activity.

## **Implications**

There is repeated evidence that strongly suggests the Psychological benefits of exercise (Pluhar., et al 2019; Saxena., et al 2005; Paluska & Schwenk,2000; Molcho , et al., 2021; Kim et al., 2017; Diongi., 2007). Identifying Factors that influence these benefits has important implications.

The findings in this study emphasise the importance of the promotion of engaging in numerous forms of physical activity and sports as a strategy to promote development of Autonomy, Environmental mastery, Personal growth, purpose in life, Positive relations with others, Self-acceptance and overall Psychological well-being. Public policy promotes exercise/sport engagement for health outcomes, typically suggesting 3-5 times weekly to combat rising health related issues such as obesity, diabetes etc. (Chekroud, R., et al 2018).

The current study suggests that a different strategy may be more effective. Promotion of a variety of sports/exercise engagement in group environments for fun, social support and Psychological well-being may be more beneficial and will indirectly have positive impacts on physical health. Particularly when social isolation is increasing among the adult population (Rohr et al., 2021) and those socially isolated are more at risk of social anxiety, loneliness and depression (Loades et al., 2020).

Promotion of social engagement through a variety of sport/exercise may also be viewed as a preventative means of limiting isolation and increasing social cohesion in an adult population alongside the evident physical and psychological benefits of exercise.

### **Strengths and Limitations**

This study identifies several limitations. First, the data was collected during a global pandemic in which social isolation became the new norm and specifically in relation to this study; participants would have had limited/restricted contact during exercise/sport engagement so this would have possibly impacted overall scores in this sample of participants. Furthermore, this study had an uneven sample size due to time limited restrictions on data collecting, an even sample would have yielded more statistically sound and reliable results. The Life satisfaction measure although reliable only consisted of 5 questions (SWLS; Deiner, 1985) this could imply that it was not sensitive enough to fully encapsulate Life satisfaction. Further studies could use more in-depth life satisfaction scales which may provide more accurate results of this complex construct. The present Study did not have a control group which would have been beneficial as a comparison group, the scales within this study were also self-reported scales which although Anonymous, may have been influenced by how the participant felt at the time as opposed to how they feel overall about the variable. Future studies should apply a Qualitative approach to get more individualistic view on what people really value within sports engagement, this perspective may present common themes that have not been previously considered.

A strength of this study is the large amount of Data collected, exercise frequency, competitive level and age group were also obtained from participants which are also potentially influential variables that future studies may benefit from assessing to gather a more in-depth understanding of exercise engagement on Life Satisfaction, Psychological wellbeing and Self-esteem. The Psychological well-being scale used within this current study also has six subgroups Future studies could statistically analysis this information to provide a more in-depth view on which areas were influenced most by sports engagement. Although the data being collected in a Global pandemic was a limitation, it is also a strength as even

during a global pandemic a statistically significant result was found in psychological well-being scores as described above.

### **Conclusion**

This study expands the current understanding of the influence of exercise engagement type on levels of Life satisfaction, Psychological well-being and Self-esteem in an adult population. The current study adds to the previous literature by identifying factors in exercise engagement type that positively influence psychological well-being.

This research also adds to the literature as it shows self-esteem and life satisfaction are not impacted by social cohesion within an exercise context within the current study and is more complex. Two measures, Life satisfaction and Self-esteem were not Statistical significant, future research within this area post pandemic may show more reliable results.

As mental health issues rise globally alongside the rise in social isolation the implications for mental health services is huge, particularly in Ireland where mental health services are already struggling to keep up with demand. The need for preventative interventions is crucial.

The Promotion of involvement in multiple team Sports/exercise activities may be a preventative measure for negative mental health outcomes in an adult population.



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## Appendix I

### Demographic questionnaire

#### Gender

- Male
- Female
- Transgender/gender expansive
- other

#### Age

What age are you?

- 18-35
- 36-55

-Please tick which one you identify with most.

Do you identify as taking part in individual sport/exercise?

Do you identify as taking part in group/team sport/exercise?

Do you identify as taking part in both individual and group sport/exercise?

If you identify as engaging in group/team sport is this sport

- competitive
- non competitive

On average how many hours a week do you exercise/sport?

- 1-3
- 4-6
- 7-10
- 11 plus

## Appendix II

### Satisfaction with life scale (swls)

Below are five statements that you may agree or disagree with. Using the 1 - 7 scale below, indicate your agreement with each item. Please be open and honest in your responding.

- 7 - Strongly agree
- 6 - Agree
- 5 - Slightly agree
- 4 - Neither agree nor disagree
- 3 - Slightly disagree
- 2 - Disagree

- 1 - Strongly disagree

\_\_\_\_\_ In most ways my life is close to my ideal.

\_\_\_\_\_ The conditions of my life are excellent.

\_\_\_\_\_ I am satisfied with my life.

\_\_\_\_\_ So far I have gotten the important things I want in life.

\_\_\_\_\_ If I could live my life over, I would change almost nothing.

- 31 - 35 Extremely satisfied
- 26 - 30 Satisfied
- 21 - 25 Slightly satisfied
- 20 Neutral
- 15 - 19 Slightly dissatisfied
- 10 - 14 Dissatisfied
- 5 - 9 Extremely dissatisfied

### Appendix III

#### Psychological well-being scale

**Instructions:** Circle one response below each statement to indicate how much you agree or disagree.

1. "I am not afraid to voice my opinions, even when they are in opposition to the opinions of most people."

Strongly agree	Somewhat agree	A little agree	Neither agree nor disagree	A little disagree	Somewhat disagree	Strongly disagree
-------------------	-------------------	-------------------	----------------------------------	----------------------	----------------------	----------------------

2. "For me, life has been a continuous process of learning, changing, and growth."

Strongly agree	Somewhat agree	A little agree	Neither agree nor disagree	A little disagree	Somewhat disagree	Strongly disagree
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3. "In general, I feel I am in charge of the situation in which I live."



- | Strongly agree   | Somewhat agree | A little agree | Neither agree nor disagree | A little disagree | Somewhat disagree | Strongly disagree |
|--|----------------|----------------|----------------------------|-------------------|-------------------|-------------------|
| 4. "People would describe me as a giving person, willing to share my time with others."      |                |                |                            |                   |                   |                   |
| Strongly agree   | Somewhat agree | A little agree | Neither agree nor disagree | A little disagree | Somewhat disagree | Strongly disagree |
| 5. "I am not interested in activities that will expand my horizons." <sup>[SEP]</sup>        |                |                |                            |                   |                   |                   |
| Strongly agree   | Somewhat agree | A little agree | Neither agree nor disagree | A little disagree | Somewhat disagree | Strongly disagree |
| 6. "I enjoy making plans for the future and working to make them a reality."                 |                |                |                            |                   |                   |                   |
| Strongly agree   | Somewhat agree | A little agree | Neither agree nor disagree | A little disagree | Somewhat disagree | Strongly disagree |
| 7. "Most people see me as loving and affectionate."  |                |                |                            |                   |                   |                   |
| Strongly agree   | Somewhat agree | A little agree | Neither agree nor disagree | A little disagree | Somewhat disagree | Strongly disagree |
| 8. "In many ways I feel disappointed about my achievements in life." <sup>[SEP]</sup>        |                |                |                            |                   |                   |                   |
| Strongly agree   | Somewhat agree | A little agree | Neither agree nor disagree | A little disagree | Somewhat disagree | Strongly disagree |
| 9. "I live life one day at a time and don't really think about the future." <sup>[SEP]</sup> |                |                |                            |                   |                   |                   |
| Strongly agree   | Somewhat agree | A little agree | Neither agree nor disagree | A little disagree | Somewhat disagree | Strongly disagree |
| 10. "I tend to worry about what other people think of me." <sup>[SEP]</sup>                  |                |                |                            |                   |                   |                   |
| Strongly agree   | Somewhat agree | A little agree | Neither agree nor disagree | A little disagree | Somewhat disagree | Strongly disagree |
| 11. "When I look at the story of my life, I am pleased with how things have turned out."     |                |                |                            |                   |                   |                   |

- |                |                |                |                            |                   |                   |                   |
|----------------|----------------|----------------|----------------------------|-------------------|-------------------|-------------------|
| Strongly agree | Somewhat agree | A little agree | Neither agree nor disagree | A little disagree | Somewhat disagree | Strongly disagree |
|----------------|----------------|----------------|----------------------------|-------------------|-------------------|-------------------|
12. "I have difficulty arranging my life in a way that is satisfying to me."<sup>[L]</sup><sub>[SEP]</sub>
- |                |                |                |                            |                   |                   |                   |
|----------------|----------------|----------------|----------------------------|-------------------|-------------------|-------------------|
| Strongly agree | Somewhat agree | A little agree | Neither agree nor disagree | A little disagree | Somewhat disagree | Strongly disagree |
|----------------|----------------|----------------|----------------------------|-------------------|-------------------|-------------------|
13. "My decisions are not usually influenced by what everyone else is doing."
- |                |                |                |                            |                   |                   |                   |
|----------------|----------------|----------------|----------------------------|-------------------|-------------------|-------------------|
| Strongly agree | Somewhat agree | A little agree | Neither agree nor disagree | A little disagree | Somewhat disagree | Strongly disagree |
|----------------|----------------|----------------|----------------------------|-------------------|-------------------|-------------------|
14. "I gave up trying to make big improvements or changes in my life a long time ago."
- |                |                |                |                            |                   |                   |                   |
|----------------|----------------|----------------|----------------------------|-------------------|-------------------|-------------------|
| Strongly agree | Somewhat agree | A little agree | Neither agree nor disagree | A little disagree | Somewhat disagree | Strongly disagree |
|----------------|----------------|----------------|----------------------------|-------------------|-------------------|-------------------|
15. "The demands of everyday life often get me down."<sup>[L]</sup><sub>[SEP]</sub>
- |                |                |                |                            |                   |                   |                   |
|----------------|----------------|----------------|----------------------------|-------------------|-------------------|-------------------|
| Strongly agree | Somewhat agree | A little agree | Neither agree nor disagree | A little disagree | Somewhat disagree | Strongly disagree |
|----------------|----------------|----------------|----------------------------|-------------------|-------------------|-------------------|
16. "I have not experienced many warm and trusting relationships with others."
- |                |                |                |                            |                   |                   |                   |
|----------------|----------------|----------------|----------------------------|-------------------|-------------------|-------------------|
| Strongly agree | Somewhat agree | A little agree | Neither agree nor disagree | A little disagree | Somewhat disagree | Strongly disagree |
|----------------|----------------|----------------|----------------------------|-------------------|-------------------|-------------------|
17. "I think it is important to have new experiences that challenge how you think about yourself and the world."
- |                |                |                |                            |                   |                   |                   |
|----------------|----------------|----------------|----------------------------|-------------------|-------------------|-------------------|
| Strongly agree | Somewhat agree | A little agree | Neither agree nor disagree | A little disagree | Somewhat disagree | Strongly disagree |
|----------------|----------------|----------------|----------------------------|-------------------|-------------------|-------------------|
18. "Maintaining close relationships has been difficult and frustrating for me."<sup>[L]</sup><sub>[SEP]</sub>
- |                |                |                |                            |                   |                   |                   |
|----------------|----------------|----------------|----------------------------|-------------------|-------------------|-------------------|
| Strongly agree | Somewhat agree | A little agree | Neither agree nor disagree | A little disagree | Somewhat disagree | Strongly disagree |
|----------------|----------------|----------------|----------------------------|-------------------|-------------------|-------------------|
19. "My attitude about myself is probably not as positive as most people feel about themselves."<sup>[L]</sup><sub>[SEP]</sub>

- |                |                |                |                            |                   |                   |                   |
|----------------|----------------|----------------|----------------------------|-------------------|-------------------|-------------------|
| Strongly agree | Somewhat agree | A little agree | Neither agree nor disagree | A little disagree | Somewhat disagree | Strongly disagree |
|----------------|----------------|----------------|----------------------------|-------------------|-------------------|-------------------|
20. "I have a sense of direction and purpose in life."
- |                |                |                |                            |                   |                   |                   |
|----------------|----------------|----------------|----------------------------|-------------------|-------------------|-------------------|
| Strongly agree | Somewhat agree | A little agree | Neither agree nor disagree | A little disagree | Somewhat disagree | Strongly disagree |
|----------------|----------------|----------------|----------------------------|-------------------|-------------------|-------------------|
21. "I judge myself by what I think is important, not by the values of what others think is important."
- |                |                |                |                            |                   |                   |                   |
|----------------|----------------|----------------|----------------------------|-------------------|-------------------|-------------------|
| Strongly agree | Somewhat agree | A little agree | Neither agree nor disagree | A little disagree | Somewhat disagree | Strongly disagree |
|----------------|----------------|----------------|----------------------------|-------------------|-------------------|-------------------|
22. "In general, I feel confident and positive about myself."
- |                |                |                |                            |                   |                   |                   |
|----------------|----------------|----------------|----------------------------|-------------------|-------------------|-------------------|
| Strongly agree | Somewhat agree | A little agree | Neither agree nor disagree | A little disagree | Somewhat disagree | Strongly disagree |
|----------------|----------------|----------------|----------------------------|-------------------|-------------------|-------------------|
23. "I have been able to build a living environment and a lifestyle for myself that is much to my liking."
- |                |                |                |                            |                   |                   |                   |
|----------------|----------------|----------------|----------------------------|-------------------|-------------------|-------------------|
| Strongly agree | Somewhat agree | A little agree | Neither agree nor disagree | A little disagree | Somewhat disagree | Strongly disagree |
|----------------|----------------|----------------|----------------------------|-------------------|-------------------|-------------------|
24. "I tend to be influenced by people with strong opinions."<sup>[SEP]</sup>
- |                |                |                |                            |                   |                   |                   |
|----------------|----------------|----------------|----------------------------|-------------------|-------------------|-------------------|
| Strongly agree | Somewhat agree | A little agree | Neither agree nor disagree | A little disagree | Somewhat disagree | Strongly disagree |
|----------------|----------------|----------------|----------------------------|-------------------|-------------------|-------------------|
25. "I do not enjoy being in new situations that require me to change my old familiar ways of doing things."
- |                |                |                |                            |                   |                   |                   |
|----------------|----------------|----------------|----------------------------|-------------------|-------------------|-------------------|
| Strongly agree | Somewhat agree | A little agree | Neither agree nor disagree | A little disagree | Somewhat disagree | Strongly disagree |
|----------------|----------------|----------------|----------------------------|-------------------|-------------------|-------------------|
26. "I do not fit very well with the people and the community around me."
- |                |                |                |                            |                   |                   |                   |
|----------------|----------------|----------------|----------------------------|-------------------|-------------------|-------------------|
| Strongly agree | Somewhat agree | A little agree | Neither agree nor disagree | A little disagree | Somewhat disagree | Strongly disagree |
|----------------|----------------|----------------|----------------------------|-------------------|-------------------|-------------------|
27. "I know that I can trust my friends, and they know they can trust me."

Strongly agree	Somewhat agree	A little agree	Neither agree nor disagree	A little disagree	Somewhat disagree	Strongly disagree
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28. "When I think about it, I haven't really improved much as a person over the years."

Strongly agree	Somewhat agree	A little agree	Neither agree nor disagree	A little disagree	Somewhat disagree	Strongly disagree
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29. "Some people wander aimlessly through life, but I am not one of them."

Strongly agree	Somewhat agree	A little agree	Neither agree nor disagree	A little disagree	Somewhat disagree	Strongly disagree
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30. "I often feel lonely because I have few close friends with whom to share my concerns."<sup>[SEP]</sup>

Strongly agree	Somewhat agree	A little agree	Neither agree nor disagree	A little disagree	Somewhat disagree	Strongly disagree
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31. "When I compare myself to friends and acquaintances, it makes me feel good about who I am."

Strongly agree	Somewhat agree	A little agree	Neither agree nor disagree	A little disagree	Somewhat disagree	Strongly disagree
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32. "I don't have a good sense of what it is I'm trying to accomplish in life."<sup>[SEP]</sup>

Strongly agree	Somewhat agree	A little agree	Neither agree nor disagree	A little disagree	Somewhat disagree	Strongly disagree
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33. "I sometimes feel as if I've done all there is to do in life."

Strongly agree	Somewhat agree	A little agree	Neither agree nor disagree	A little disagree	Somewhat disagree	Strongly disagree
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34. "I feel like many of the people I know have gotten more out of life than I have."

Strongly agree	Somewhat agree	A little agree	Neither agree nor disagree	A little disagree	Somewhat disagree	Strongly disagree
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35. "I have confidence in my opinions, even if they are contrary to the general consensus."

Strongly agree	Somewhat agree	A little agree	Neither agree nor disagree	A little disagree	Somewhat disagree	Strongly disagree
36. "I am quite good at managing the many responsibilities of my daily life."						
Strongly agree	Somewhat agree	A little agree	Neither agree nor disagree	A little disagree	Somewhat disagree	Strongly disagree
37. "I have the sense that I have developed a lot as a person over time."						
Strongly agree	Somewhat agree	A little agree	Neither agree nor disagree	A little disagree	Somewhat disagree	Strongly disagree
38. "I enjoy personal and mutual conversations with family members and friends."						
Strongly agree	Somewhat agree	A little agree	Neither agree nor disagree	A little disagree	Somewhat disagree	Strongly disagree
39. "My daily activities often seem trivial and unimportant to me." <sup>[L]</sup> <sub>[SEP]</sub>						
Strongly agree	Somewhat agree	A little agree	Neither agree nor disagree	A little disagree	Somewhat disagree	Strongly disagree
40. "I like most parts of my personality."						
Strongly agree	Somewhat agree	A little agree	Neither agree nor disagree	A little disagree	Somewhat disagree	Strongly disagree
41. "It's difficult for me to voice my own opinions on controversial matters." <sup>[L]</sup> <sub>[SEP]</sub>						
Strongly agree	Somewhat agree	A little agree	Neither agree nor disagree	A little disagree	Somewhat disagree	Strongly disagree
42. "I often feel overwhelmed by my responsibilities." <sup>[L]</sup> <sub>[SEP]</sub>						
Strongly agree	Somewhat agree	A little agree	Neither agree nor disagree	A little disagree	Somewhat disagree	Strongly disagree

#### Scoring information for Psychological well-being scale

#### Scoring:

The Autonomy subscale items are Q1, Q13, Q24, Q35, Q41, Q10, and Q21. The Environmental Mastery subscale items are Q3, Q15, Q26, Q36, Q42, Q12, and Q23.

The Personal Growth subscale items are Q5, Q17, Q28, Q37, Q2, Q14, and Q25. The Positive Relations with Others subscale items are Q7<sup>[SEP]</sup>, Q18, Q30, Q38, Q4<sup>[SEP]</sup>, Q16, and Q27. The Purpose in Life subscale items are Q9, Q20, Q32, Q39, Q6, Q29, and Q33. The Self-Acceptance subscale items are Q11, Q22, Q34, Q40, Q8, Q19, and Q31.

Q1, Q2, Q3, Q4, Q6, Q7, Q11, Q13, Q17, Q20, Q21, Q22, Q23, Q27, Q29, Q31, Q35, Q36, Q37, Q38, and Q40 should be reverse-scored. Reverse-scored items are worded in the opposite direction of what the scale is measuring. The formula for reverse-scoring an item is:

$$((\text{Number of scale points}) + 1) - (\text{Respondent's answer})$$

For example, Q7 is a 7-point scale. If a respondent answered 3 on Q7, you would re-code their answer as:  $(7 + 1) - 3 = 5$ .

In other words, you would enter a 5 for this respondents' answer to Q7.

To calculate subscale scores for each participant, sum respondents' answers to each subscale's items.

#### Appendix IV

#### Rosenberg Self-Esteem Scale (RSE)

Please record the appropriate answer for each item, depending on whether you Strongly agree, agree, disagree, or strongly disagree with it.

1 = Strongly agree 2 = Agree 3 = Disagree 4 = Strongly disagree \_\_\_\_\_

1. On the whole, I am satisfied with myself. \_\_\_\_\_

2. At times I think I am no good at all. \_\_\_\_\_

3. I feel that I have a number of good qualities. \_\_\_\_\_

4. I am able to do things as well as most other people. \_\_\_\_\_

5. I feel I do not have much to be proud of. \_\_\_\_\_

6. I certainly feel useless at times. \_\_\_\_\_
7. I feel that I'm a person of worth. \_\_\_\_\_
8. I wish I could have more respect for myself. \_\_\_\_\_
9. All in all, I am inclined to think that I am a failure. \_\_\_\_\_
10. I take a positive attitude toward myself.

Scoring: As the RSE is a Guttman scale, scoring can be a little complicated. Scoring involves a method of combined ratings. Low self-esteem responses are “disagree” or “strongly disagree” on items 1, 3, 4, 7, 10, and “strongly agree” or “agree” on items 2, 5, 6, 8, 9. Two or three out of three correct responses to items 3, 7, and 9 are scored as one item. One or two out of two correct responses for items 4 and 5 are considered as a single item; items 1, 8, and 10 are scored as individual items; and combined correct responses (one or two out of two) to items 2 and 6 are considered to be a single item.

## **Appendix V**

### Information Sheet

The Association between Group/team sports and levels of perceived life satisfaction, well-being and self-esteem in an adult population.

I am a final year student in the BA in psychology programme at the National College of Ireland, as part of my degree I must carry out an independent research project.

Participation in this study is completely voluntary, please take your time to consider whether you wish to take part or not. Please read the following information to get a better understanding of what this study entails for you the participant and if you have any queries in relation to this study please do not hesitate to contact me at [x18127193@student.ncirl.ie](mailto:x18127193@student.ncirl.ie)

### What is this study about?

The aim of this study is to look at the possible differences in levels of Life satisfaction, Psychological well-being and self-esteem in an adult population in those that exercise/sport alone, those that exercise/sport in a group and those that do both.

### What will taking part involve?

Taking part in this research involves you answering a questionnaire, it should not take more than 10/15 minutes of your time. Questions asked will be general questions regarding your participation in sport/exercise and general questions on your psychological well-being.

### Do you have to take part?

Taking part in this study is completely voluntary, you have the right to refuse participation and to refuse to answer any questions within the study. Data in this study is collected anonymously and you have the right to withdraw from this study at any point prior to hitting the submit button. You can do this by exiting the browser window at any point.

### What are the possible risks of taking part?

There are no physical risks of involvement in this study and no identifying information will be asked. If you feel any questions regarding the study, please contact the researcher and if you feel any distress please contact any of these helplines which are charities that provide



support for any sort of distress. Samaritans- 01, 671 0071, Turn2me- turn2me.ie, Pieta House, 1800 247 247

### Will taking part be confidential

Data that is collected will remain confidential and completely anonymous. Completed questionnaires will be sent to google forms where it will be stored and protected. No information regarding participant's identity is stored by Microsoft forms so you will not be identifiable. The information will then be statistically analysed by the researcher and kept in a password protected file that only the researcher has access too.

### What will Happen with the results of the study?

The results of this research will be used for my thesis submitted to the National college of Ireland.

### Who you should contact for further information?

For further information or any questions, you may have please contact Samantha Kelly

[X18127913@student.ncirl.ie](mailto:X18127913@student.ncirl.ie)

I have read this information and would like to take part.

## Appendix VI

### Consent form

- I understand I have the right to withdraw from this study at any point up and to refuse to answer any questions without any consequences.
  - I understand the nature of this study and I have the opportunity to ask any questions I may have.
  - I understand that participation involves 10-15 minutes of my time and four questionnaire's consisting of questions involving demographics, Life satisfaction, Psychological well-being and self-esteem will be involved.
  - I understand that I will not benefit directly by taking part in this study.
  - I understand that all information supplied will be treated with confidentiality.
  - I understand I will not be identifiable in the results of this research.
  - I understand that if myself or someone I know reports risk of harm to the researcher that the relevant authorities may be notified – this will be discussed with me first but may have to be carried out with or without my permission.
  - I understand that I can ask any questions I may have and am free to contact anyone involved in this study for further information/clarification.
- Consent box .....

## **Appendix VII**

### Debriefing sheet

This study is concerned with the psychological benefits that may be present in group exercise/sport participation. Life Satisfaction, Psychological well-being and self-esteem are assessed in relation to those that participate in individual exercise/ sport and those that participate in groups.

#### How was this tested?

You were asked to complete four separate questionnaires. The first questionnaire was a demographic questionnaire, which includes general questions including age and gender. The second questionnaire was the Perceived life satisfaction scale which assess levels of life satisfaction. The Third questionnaire was the psychological well-being scale was used to assess over all well- being with subscales that include Self-acceptance, Positive Relation with Others, Autonomy, Environmental Mastery, Purpose in Life, and Personal Growth. The fourth questionnaire was the Rosenberg self-esteem scale which assessed levels of self-esteem.

#### What did this research expect to find?

This study expects to find that adults that participate in group/team sports have higher perceived levels of life satisfaction, psychological well-being and self-esteem when compared with adults that take part in sports/exercise alone.

### Why is this study important?

This study is important to promote the engagement of group exercise/sport in adults. The promotion of social cohesion and exercise together may be a preventative measure for psychological distress in adults alongside the promotion of positive mental health.

### Confidentiality

All information you submitted during this study will be completely anonymous and unidentifiable. The results found in this research will be submitted to The National College of Ireland for my final year Thesis.

If you experience distress in any way after taking part in this study please contact Samantha Kelly, [x18127193@student.ncirl.ie](mailto:x18127193@student.ncirl.ie) or my supervisor Dr Amanda Kracen, [Amanda.Kracen@ncirl.ie](mailto:Amanda.Kracen@ncirl.ie)

It is also advised to contact any of these helplines which are charities that provide support for any sort of distress.

Samaritans- 01, 671 0071

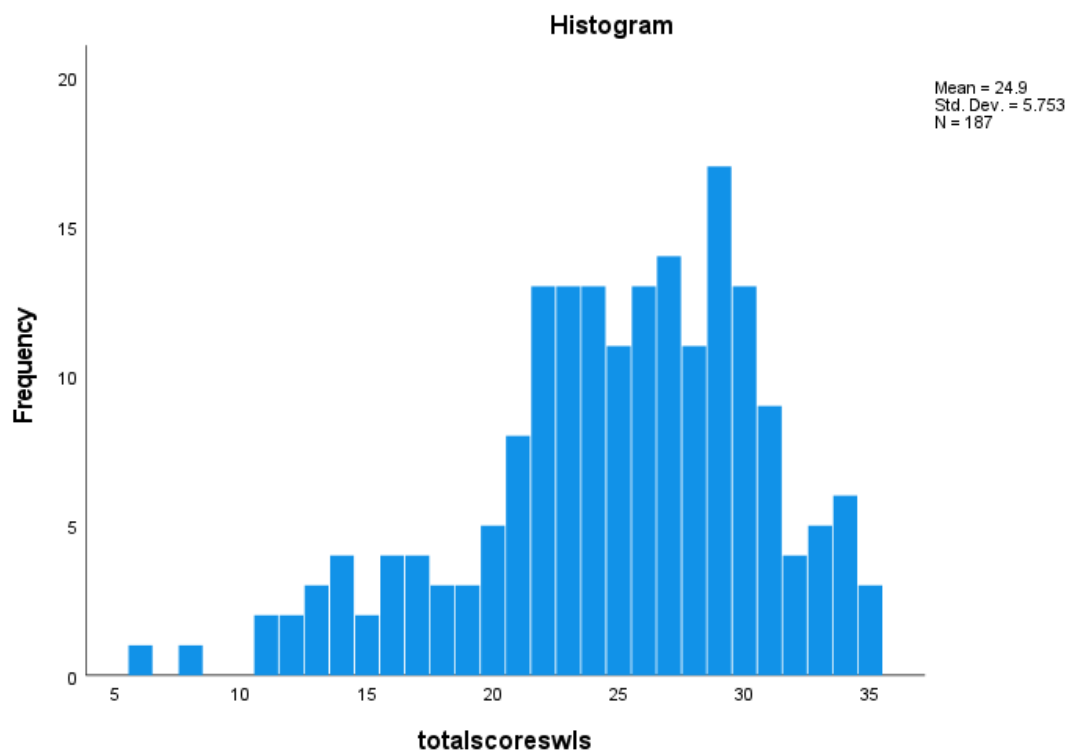
Turn2me- [turn2me.ie](http://turn2me.ie)

Pieta House, 1800 247 247

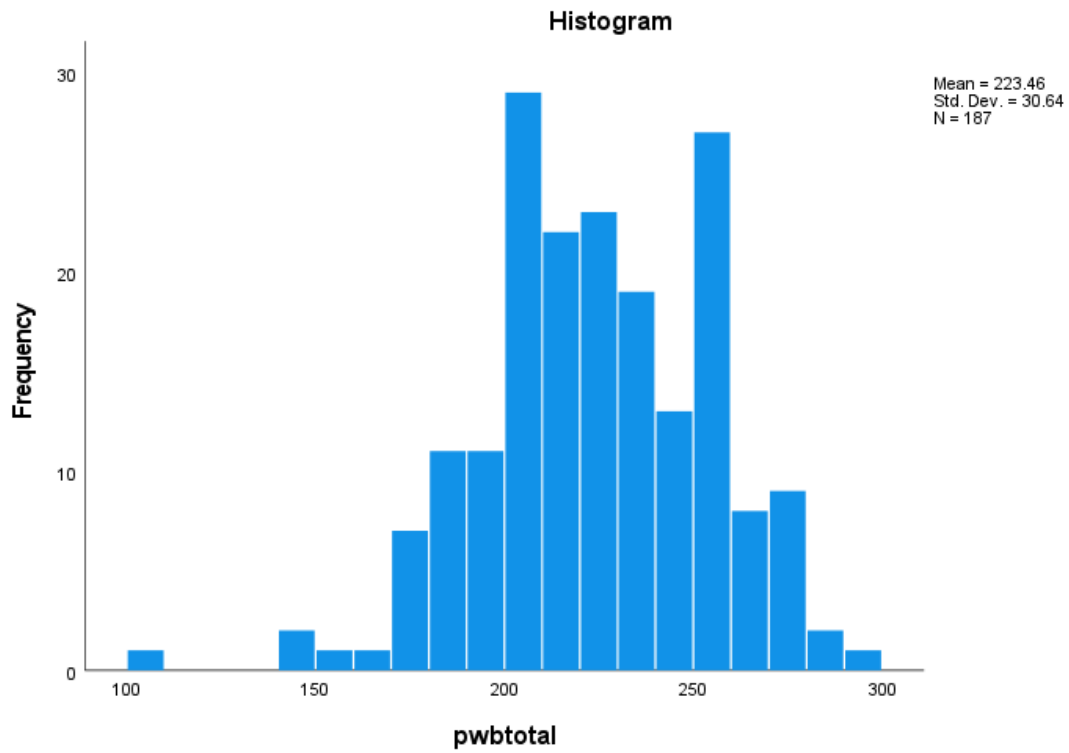
Thank you for your Participation.

## Appendix VIII

Histogram for Satisfaction with life



Histogram for Psychological well-being



Histogram for Self-esteem

