

SPORTS PARTICIPATION AND WELLBEING

INVESTIGATING THE EFFECT OF SPORTS PARTICIPATION ON THE MENTAL
HEALTH AND WELLBEING OF ADOLESCENTS IN NEW ZEALAND

BY

OLIVIA MCGIFFORD

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Abstract

The physical health benefits of sports participation have been well-established, however, the influences on mental health and wellbeing may still be unclear (Slater & Tiggemann, 2011; Steiner et al., 2000). The argument currently stands that sports participation has positive influences on mental health and wellbeing for adolescents, however, there are movements towards the concept that the sporting environment may foster negative experiences for adolescents. Two studies were conducted in order to assess the relationship between sports participation and wellbeing. Study One firstly examined sex differences and effect of sports participation on wellbeing. Consistent with previous research, females demonstrated higher levels of depression and anxiety, while males exhibited higher levels of self-esteem. Sports participation only influenced levels of depression, and not anxiety or self-esteem. Self-esteem mediated the relationship between gender and wellbeing, while sports participation did not. Study Two investigated the effect of sports participation on the wellbeing of adolescent males in New Zealand. A particular focus was taken on the possible negative influence New Zealand rugby culture may have on wellbeing. Contrary to previous research, sports participation did not have an effect on depression, anxiety, stress, conformity to masculine norms or sporting identity. Those who played an individual sport had higher levels of self-esteem and sports orientation compared to those who did not play sports, but not team sports or rugby. This research is one of the first to look at male adolescents and more specifically rugby culture and its effects on wellbeing. Mixed results from Study One and Two indicate that there are possibly gaps in the theory about sports participation and its effect of wellbeing, suggesting that further research is needed to expand the knowledge around this relationship.

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Table of Contents

Abstract.....	ii
Acknowledgements.....	iii
List of Figures.....	vii
List of Tables.....	viii
Preface.....	9
New Zealand Adolescent Males, Sports Participation and its Effect on Wellbeing.....	10
Mental Health and Wellbeing	10
Adolescence	12
Study One.....	14
The Relationship between Gender, Sports Participation and Wellbeing.....	14
Gender Differences in Wellbeing.....	14
Depression	14
Anxiety	16
Self-Esteem.....	17
Sports and Wellbeing	19
Self Esteem and Sports.....	22
Sporting in New Zealand.....	23
Tall Poppy Syndrome	24
BIRGing and CORFing	25
Study One.....	27
Rationale.....	27
Aim	27
Hypothesis	28
Mediation hypothesis	28
Method	28
Participants	28
Materials.....	29
Mental Health and Wellbeing (Depression and Anxiety)	29
Self-Esteem.....	29

Procedure.....	30
Ethics	30
Recruitment	30
Administration	30
Results.....	31
Gender Differences in Wellbeing.....	31
Sports Belonging and Wellbeing.....	32
Gender, Sports Belonging and Wellbeing	34
Moderation Analysis	34
Mediation Analysis.	35
Self-Esteem as a Mediator between Sex and Psychological Outcomes	35
Self-Esteem as Mediator between Sports Participation and Psychological Outcomes	37
Discussion	39
Limitations and Future Directions.....	40
Summary and Conclusions.....	41
Study Two.....	42
The Relationship between Sports Participation and Wellbeing for Adolescent Males	42
Rugby in New Zealand.....	42
Mental Health in Rugby	43
Sports and Masculinity	45
Social Identity	49
Team vs Individual Sports.....	52
Study Two	54
Rationale.....	54
Aim	56
Hypothesis	56
Method	57
Participants	57
Materials.....	57
Sports Participation.....	57
Mental Health and Wellbeing (Depression, Anxiety, and Stress).....	57
Self Esteem	59

Masculinity	59
Sports and Identity	60
Sporting Norms	60
Procedure.....	61
Ethics	61
Recruitment	61
Administration	61
Data Cleaning	62
Results.....	62
Descriptives.....	62
Sports Participation.....	62
Correlations	63
Group Analysis.....	65
Wellbeing.....	65
Masculinity	68
Sports Identity.....	69
Sports Orientation.....	69
Discussion	71
Limitations and Future Directions.....	74
Summary and Conclusions.....	75
General Discussion	76
Theoretical Implications.....	77
Mental Health and Wellbeing.....	77
Masculinity	79
Self-Esteem.....	81
Social Identity and Sporting Orientation	82
Strengths.....	85
Limitations	86
Future Research.....	88
Summary and Conclusions.....	90
References.....	92
Appendices.....	104

List of Figures

Figure 1. Moderation of Sports Belonging to Depression by Gender.....	34
Figure 2. Mediation of Self-Esteem on Relationship between Sex and Depression.....	35
Figure 3. Mediation of Self-Esteem on Relationship between Sex and Anxiety.....	36
Figure 4. Mediation of Self-Esteem on Relationship between Sports Participation and Depression.....	37
Figure 5. Mediation of Self-Esteem on Relationship between Sports Participation and Anxiety.....	38

List of Tables

Table 1. Descriptive Statistics for Gender Differences in Wellbeing.....	31
Table 2. Descriptive Statistics for Wellbeing Measures by Gender.....	32
Table 3. Correlation Matrix for Study One Variables.....	33
Table 4. DASS Subscale Scoring Classifications.....	58
Table 5. Descriptive Statistics of Sports Participation Variables.....	63
Table 6. Correlation Matrix of Study Two Variables.....	64
Table 7. Descriptive Statistics for DASS Subscale Scores.....	65
Table 8. Descriptive Statistics for Wellbeing Variables.....	66
Table 9. Descriptive Statistics for Masculinity Variables.....	68
Table 10. Descriptive Statistics for Sports Identity Variables.....	69
Table 11. Descriptive Statistics for Sports Orientation Variables.....	70

Preface

This thesis was originally developed as a part of the Youth Wellbeing Study (YWS). The YWS is a project which started in 2012 and investigates many facets of youth wellbeing in New Zealand. I noticed there was a lack of research in New Zealand surrounding sports participation and its effect on adolescent wellbeing. Furthermore, the research that was currently available focused mostly on females, and it was not clear the effects it may have on young males. Therefore I wanted to create a thesis that focused on the mental health and wellbeing of youth in New Zealand. I had also heard anecdotes and stories about rugby culture in New Zealand and wanted to put a particular focus on the game and its effect, due to its large influence in New Zealand.

I was able to use data from a previous YWS administration for Study One, however the sports questions were not detailed enough, and many of the variables I wanted to assess were not examined. The initial plan for this thesis was to include new questions in the 2020 survey about sports participation, masculinity, sports orientation and identity. Plans had been made to visit multiple secondary schools in the wider Wellington region, however, data collection was halted quickly when the Covid-19 pandemic hit New Zealand. While attempts were made to resume data collection post lockdown, this did not come to fruition. Therefore, a secondary plan was initiated in which I would use the IPRP (Introduction to Psychology Research Programme) for data collection for this Masters thesis. Participants of this programme are first year psychology students. This was my most viable option for data collection, as the survey needed to be remotely administered online, which was not possible with the YWS. Therefore, the sample group I initially wanted to assess was not accessible and I had to settle for the next best option.

Further information about the Youth Wellbeing Study can be found at:
youthwellbeingstudy.wordpress.com

New Zealand Adolescent Males, Sports Participation and its Effect on Wellbeing.

New Zealand is currently facing a mental health ‘epidemic’ (Mental Health Foundation New Zealand, 2015). We see a constant flow of opinions and information in both media and academic journals regarding the mental health and wellbeing of New Zealanders. Many risk factors for mental health issues in New Zealand have been identified. Youth, Māori¹ and Pacific² peoples, and LGBTQI+³ individuals are identified as our most vulnerable groups, and have been shown to demonstrate poorer mental health outcomes compared to Pākeha, heterosexual or older individuals (Fleming et al., 2014). New Zealand youth are identified as particularly vulnerable to developing mental health issues, more specifically, the male adolescent population. However, adolescent males are often under-researched, overlooked and over-represented in negative wellbeing statistics (Fleming et al., 2014).

Mental Health and Wellbeing

Wellbeing is often separated into three categories; psychological, social and emotional wellbeing (Keyes, 2014), however indigenous models of wellbeing typically include a spiritual dimension as well; for example, Te Whare Tapa Whā (Rochford, 2004). Psychological wellbeing includes being satisfied and happy with most parts of one’s personality, being good at managing daily life responsibilities, and overall satisfaction with one’s life. Social wellbeing refers to functioning and contributing to society in a positive manner, and feelings of belonging in the community (social integration). Emotional wellbeing includes interest in life, happiness, and satisfaction (Keyes, 2014). Taha Wairua (spirituality) is regarded as essential for Māori health (Durie, 1985). Spiritual awareness is believed to be related directly to wellbeing, and if an individual lacks this awareness, may be more prone to disability or misfortune. Furthermore, spiritual wellbeing implies strong

¹ Indigenous peoples of New Zealand

² Peoples from the Pacific Islands

³ Lesbian, Gay, Bisexual, Transgender, Queer, Intersex plus community

connections with the environment; land, lakes, mountains, and reefs. Spirituality has also been shown to be important for wellbeing among non-indigenous peoples as well (Batson et al., 1993; Durie, 1985; Fisher, 2011).

Mental health can be described in general as a ‘dynamic state’ in which a person’s internal equilibrium of mental health/wellbeing can flow between good and bad (Galderisi et al., 2015). The World Health Organisation’s (WHO, 2005) definition of mental health is; “a state of well-being in which the individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to his or her community”. However, for this study, I shall operationalise mental health/wellbeing more specifically as the level of self-esteem, anxiety, depression, or stress that an individual reports they are experiencing.

While youth mental health is a key priority in Aotearoa New Zealand, the mental health of male youth is of significant importance and the particular focus in this thesis. New Zealand has the highest rate of youth (age 15-19) suicide across 32 OECD countries (Stubbing & Gibson, 2019). Statistics New Zealand (2016) reported that the highest rate of death by suicide was among youth aged between 15 and 24, with 16.8 per 100,000. Whilst all countries have issues facing youth, one of New Zealand’s biggest worries is the mental health of its young men (Fleming et al., 2014). In 2016, 533 people died by suicide, 11.3 per 100,000 people. However, 412 of these were male, (compared to 141 females). 17 males per 100,000 died by suicide in New Zealand, compared to 5.8 per 100,000 females.

Reports from 2016 are the most recent confirmed statistics. However, Coronial Services of New Zealand (2020) have also reported more recent provisional statistics from 2019/2020. From June 2019 to June 2020, 654 people died by suicide in New Zealand, equivalent to 13.01 per 100,000. Furthermore, 471 of these were male, and 183 were female. The differences between male and female suicide rates are of great concern, with 19.03 males

peer 100,000, compared to 7.18 females per 100,000. Contrary to 2016 reports, the age group of 25-29 had the highest rate of death by suicide with 22.21 per 100,000, while the ages of 15-19 was third highest with 18.69 per 100,000. These statistics paint a grim picture of the mental health issues facing the youth of New Zealand, specifically young males.

Adolescence

Traditionally, the ages of 13 to 18 have been referred to as the period of adolescence. However, The American Psychological association deems adolescence as the period between 10 to 19 years of age (Noel et al., 2013). Earlier onset of puberty has accelerated the start of adolescence in nearly all populations, as well as a continued understanding that both biological growth and major social role transitions are seen well into the early 20s (Sawyer et al., 2018). The transitional period from childhood to adulthood now occupies a greater portion of life, and it is suggested that the adolescent period can range from 10 to 24 years of age (Sawyer et al., 2018).

Adolescence is a developmental period in which not only physical changes in the body are seen, but ongoing psychological development occurs including self-esteem, values and beliefs, morals, identity, and cognitive skills (Noel et al., 2013; Sawyer et al., 2018). This puts further emphasis on the importance of the events and experiences that occur during adolescence as these may impact learning, development and wellbeing. Moreover, if an individual's development is *negatively* impacted, this may lead to detrimental effects during adulthood (Patalay & Fitzsimons, 2018; Noel et al., 2013).

While adolescence is characterised as a challenging life period, individuals navigate it with varying degrees of difficulty, including increasing engagement in risk-taking behaviour and emotional health concerns that can all impact current and future wellbeing (Noel et al., 2013; Petersen, 1988). Adolescence is also a time often related to the onset on mental illnesses such as anxiety, depression, schizophrenia, impulse control problems, substance use,

and other disorders (Kessler et al., 2007; Patalay & Fitzsimons, 2018). This further reinforces the importance of researching wellbeing among male youth in New Zealand. Researchers in general, agree that early onset and the level of severity in mental health issues are predictors of later and poorer mental health outcomes in adulthood including maladaptive behaviours, depression, substance abuse and anti-social behaviour (Kessler et al., 2007; Noel et al, 2013).

What we know wellbeing of our youth has been informed by past studies in New Zealand. The Dunedin Multidisciplinary Study (DMS) is a longitudinal study that has assessed multiple mental health and wellbeing indicators in a cohort of participants followed from birth to present (Caspi et al., 2020). DMS Participants were born in New Zealand in 1972/1973 and observed from birth till 45 years of age (April 2019). Many analyses have been conducted as branches of the DMS, including a recent study published in 2020 looking at mental health disorders and comorbidities. Caspi et al. (2020) assessed DMS participants and their experiences of mental health issues at different age points. The study reported that between the ages of 11 and 15, 35% of the cohort had met the criteria for a mental disorder based on the DSM-V. By the age of 18, 51% and by 21 years old, 48% of the cohort had met the criteria. The number of participants meeting the criteria for mental disorder(s) then decreases from age 21 down to 44% at the age of 45 (Caspi et al., 2020). This study gives insight into how the adolescent period is a vulnerable time for the development of mental illness, which in turn will influence overall wellbeing.

The Youth19 study is the most recent in a series of New Zealand adolescent health and wellbeing surveys known as Youth2000. Since 1999, over 36,000 young people in New Zealand have participated in the Youth2000 programme. Youth19 was conducted in 2019 in Auckland, Northland, and Waikato regions, with core questions from previous Youth2000 surveys. Youth19 data demonstrated that overall most students are happy or satisfied with their lives, there was also evidence of elevated levels of distress reported by many students.

The emotional and mental health of New Zealand youth appears to have declined compared to the Youth2000 surveys of 2001, 2007, and 2012 (Fleming et al., 2020). Furthermore, marked gender differences were found in symptoms of depression, with over two times *more* females reporting significant depressive symptoms compared to males (529), highlighting a possible protective factor to depression among young men.

Study One

The Relationship between Gender, Sports Participation and Wellbeing.

Gender Differences in Wellbeing

These previous studies begin to highlight the possible gender differences in wellbeing among New Zealanders (Caspi et al., 2020; Fleming et al., 2020). Gender differences in depression and anxiety have been well researched and documented (Altemus et al., 2014; Derdikman-Eiron et al., 2011; McLean et al., 2011; Nolen-Hoeksema & Girgus, 1994; Salk et al., 2017). I will briefly summarise salient findings in relation to depression, anxiety, and self-esteem.

Depression

It seems as though gender differences in depression do not become apparent until the early stages of adolescence. No significant gender differences in depressive symptoms have been observed in the prepubescent stage. Gender disparities begin to emerge around the age of 15, as females become approximately twice as likely to develop depression compared to males (Altemus et al., 2014; Nolen-Hoeksema & Girgus, 1994). Existing studies have researched the possible biological explanations for these gender disparities, such as hormone, cortisol, or neurotransmitter levels. However, little consistent evidence that these biological factors mediate the gender differences in depression has been found (Hankin & Abramson, 1999). Therefore, these gender differences may also be heavily influenced by social and

environmental factors (Hankin & Abramson, 1999; Nolen-Hoeksema & Girgus, 1994; Angst et al., 2002)

An early study by Nolen-Hoeksema and Girgus (1994) assessed the emergence of gender differences in early adolescence testing three models; 1. Factors for development of depression are the same for males and females, but become more prevalent in girls during early adolescence, 2. Factors leading to depression are different for males and females, and that these factors become more common for females than males during adolescence, 3. Females are more likely to have characteristics that serve as a risk factor for the development of depression, then during puberty these characteristics interact with certain challenges of early adolescence, which in turn lead to the higher rates of depression in females. Nolen-Hoeksema and Girgus (1994) concluded that the third model was most strongly supported, as females appear to have increased risk factors for depression compared to males, and *also* face more new challenges in early adolescence, such as development of self-esteem (including body dissatisfaction), socio-sexual challenges (rape and sexual abuse), parental and peer expectations, and adherence to gender roles. It is suggested that these risk factors combined with adolescent challenges, influence the gender differences in depression often demonstrated in literature (Nolen-Hoeksema & Girgus, 1994)

Angst et al., (2002) expanded upon what we know of gender differences in depression prevalence by investigating symptoms, help-seeking, coping, and the consequence of depression. Women were almost two times *more* likely to have been diagnosed with major depressive disorder (MDD). No significant differences were found for 'minor' depressive disorder. Gender differences for MDD were evident across all age groups. Males reported fewer symptoms of MDD, and consequently reached the diagnostic threshold less frequently (Angst et al., 2002). Significant gender differences were also evident in coping and consequences of depression. Women were more likely to cope through emotional release and

religion and felt the effects of depression in their quality of sleep and general health. Men were more likely to cope by increasing their alcohol consumption and engaging in sports activity, and felt the consequences of their depression in their ability to work (Angst et al, 2002).

More recently, Salk et al. (2017) conducted two meta-analyses aiming to estimate the magnitude of gender differences in depression. Salk et al. (2017) used a wide array of nation and ages in the hopes to explain patterns of gender differences across life span, and incorporate additional moderators. Salk et al. (2017) found a significant gender difference in the diagnoses of MDD, with women being 1.95 times more likely to be diagnosed, consistent with the Angst et al. (2002) study. In both meta-analyses the gender difference peaked in adolescences, with adolescent females being 3.02 times more likely to be diagnosed with depression than males. It is important to understand the distinction between diagnoses and development, as it is possible that men with depression are overlooked, while women are over diagnosed due to the stereotype that depression is a stereotypically female disorder (Salk et al., 2017). Salk et al. (2017) concluded that the gender differences in depression represents a disparity in health, particularly in adolescence, and emphasises the importance of not overlooking men and their symptoms of depression.

Anxiety

Extensive research has been conducted on the prevalence of anxiety and the gender disparity between males and females (Altemus et al., 2014; Lewinsohn et al., 1998; McLean et al., 2011; Ranta et al., 2007). Females have shown a consistently higher prevalence rate of anxiety disorders compared to males, with lifetime rates of most anxiety disorders being two times higher for females (Altemus et al., 2014; Derdikman-Eiron et al., 2011; McLean et al., 2011; Ranta et al., 2007). The onset of anxiety disorders peaks during adolescence and early

adulthood, and the gender disparity becomes more evident, as females begin to diverge from males at a noticeably early age - by the age of six, twice as many females have experienced anxiety and female adolescents show significantly higher anxiety symptoms than males (Lewinsohn et al., 1998).

Research has also demonstrated that females have a greater lifetime diagnosis for panic disorder, agoraphobia, generalised anxiety disorder, specific phobia, and post-traumatic stress disorder (McLean et al., 2011). The symptoms of social anxiety appear to peak in mid-adolescence, particularly for males, as well as a more pronounced intensity of symptoms of social anxiety among males. It is suggested that boys are more susceptible to a rise in social anxiety at the ages of 14 and 15 (Ranta et al., 2007). As with depression, men and women show different consequences, coping and help-seeking strategies for anxiety. Women with anxiety disorder were more likely to miss workdays in the previous month, demonstrate more internalising coping strategies and ruminate (Altemus et al., 2014; Mclean et al., 2011). At the same time, women with an anxiety disorder are more likely to seek health care treatment, while males are more likely to visit a professional for emotional or substance use issues (McLean et al., 2011).

Self-Esteem

Self-esteem is defined as the way in which an individual feels about oneself (Noel et al., 2013). There are two forms of self-esteem that are often described in the literature: ‘*Global*’ and ‘*Specific*’ self-esteem. ‘Global self-esteem’ refers to how much some individuals like or approve of themselves as a whole (Noel et al., 2013). However, ‘Specific self-esteem’ refers to how an individual feels about certain parts of themselves, for example, as an athlete or academic, or how they look (Noel et al., 2013). The relationship between global self-esteem and gender during adolescence has been well-established and research

continually demonstrates adolescent females to report lower levels of self-esteem than males (Bowker 2006; Derdikman-Eiron et al., 2011; Quatman & Watson, 2001).

For example, using an adolescent sample, Quatman and Watson (2001) considered gender differences across eight specific domains: personal security, home/parents, peer popularity, academic competence, attractiveness, personal mastery, and athletic competence. No significant differences were found between genders in perception of peer popularity. Males demonstrated a stronger perception of personal security compared females, and males suffered less from anxiety, guilt, and shame. Females reported significantly greater physiological manifestations of these emotions and were more likely to acknowledge these physiological symptoms (Quatman & Watson, 2001). Furthermore, females were significantly more likely to report being affected by their emotions, including reporting more psychosomatic symptoms (e.g., such as nightmares, headaches, and stomach aches). Females reported significantly less satisfaction with their home life and were more likely to want to leave home. Males were significantly more satisfied with their attractiveness and their athletic competence while females were significantly more likely to say they believe they look ugly. It was also found that males illustrated a stronger sense of personal mastery than females, as males were less afraid to make mistakes, fail, and were surer of themselves (Quatman & Watson, 2001).

Bringing these all together, Derdikman-Eiron et al. (2011) examined gender differences in anxiety, depression, and self-esteem among adolescents. Reporting that prevalence rates for symptoms of depression and anxiety were higher in females compared to males. Findings also demonstrated a significant interaction between gender and symptoms of depression and anxiety on multiple outcome variables; self-esteem, subjective-wellbeing, frequency meeting friends, academic problems, and the feeling of not having enough friends (Derdikman-Eiron et al., 2011). It was found that girls showed *higher* prevalence rates of

symptoms of anxiety and depression. Furthermore, an interaction between gender and symptoms of anxiety and depression were found for multiple variables; self-esteem, academic problems, frequency of friend meetings, and feeling of having enough friends. The interactions observed were *also* stronger for boys (Derdikman-Eiron et al., 2011).

Sports and Wellbeing

Sports participation, the focus of this thesis, has also been identified among the various factors that might influence wellbeing. Sports participation and its effect on health has been well-recognised. Physical benefits have been established including the reduction in risk of obesity, cardiovascular disease, osteoporosis and other chronic diseases, however effects on mental health may be less categorically positive (Slater & Tiggemann, 2011; Steiner et al., 2000). In particular, the consequences and impacts that sports participation has on risk-taking behaviours and mental health in adolescents have been unclear (Steiner et al., 2000). Sports participation, amount of training, formality of the sport, gender, and amount of vigorous physical activity have all been implicated in the effects on adolescent wellbeing (Brown & Blanton, 2002; Donaldson & Ronan, 2006; Downs & Ashton, 2011; Hansen et al., 2003; Merglen et al., 2014; Miller, 2009). Sports participation and engagement in physical activity may be crucial for the enrichment of psychological wellbeing in children and adolescents. It is suggested that the sporting environment fosters the development of many skills such as cooperation, self-discipline, coping in success, dealing with failure, competitiveness, sportsmanship, leadership, and self-confidence (Slater & Tiggemann, 2011). However, it is possible not all the consequences of sports participation are positive.

Adolescents partake in multiple different extra-curricular activities; however, these activities may provide both positive and negative experiences which influence wellbeing (Hansen et al., 2003). Sports participation for youth has demonstrated positive effects such as higher rates of emotion regulation, physical skills, self-knowledge, and self-esteem (Bowker,

2006; Hansen et al., 2003). Furthermore, compared to other activities such as faith-based service or volunteering, academic, leadership, and fine arts activities, 35% more adolescents indicated they learnt about controlling their anger during sporting experiences (Hansen et al., 2003). However, research has *also* indicated that negative experiences such as bullying, peer pressure, and mistreatment from players and coaches that occur during sporting activities may have detrimental effects on adolescents and their development. These effects include increases in negative peer interaction and inappropriate adult behaviour in sporting experiences (Hansen et al., 2003). Hansen et al. (2003, pg.23) reported that youth in sports were more likely to indicate that they had "felt pressured by peers to do something they did not want to do" and that "adult leaders encouraged me to do something I believed morally wrong".

Sports participation has also been shown to have positive effects on aspects of emotional and behavioural wellbeing on young adolescents (Donaldson & Ronan, 2006). Those who engage in increased sports activity have shown significantly lower levels of social problems compared to those who do not participate (Donaldson & Ronan, 2006). More specifically, those who participate in more formally organised sports (such as competitive sports) reported lower social, aggression, and delinquency problems, as well as decreased levels of anxiety and depression related problems (Donaldson & Ronan, 2006).

Among college students, males who do not participate in any physical activity are twice as likely to report suicidal behaviour as males who partake in low levels of physical activity (Brown & Blanton, 2002). Furthermore, those who did not participate in any sporting specific activity were 2.5 times *more* likely to report suicidal behaviours compared to those who did participate in sports, no matter the amount of involvement (Brown & Blanton, 2002). Partaking in the recommended (or higher) amount of vigorous physical activity (75 minutes

per week) in college has also been shown to increase levels of both physical and mental health across multiple outcomes compared to those peers who are less active (Downs & Ashton, 2011). This indicates that both physical and sporting activities may serve as a protective factor against suicidal behaviour in males (Brown & Blanton, 2002), (Downs & Ashton, 2011).

The amount of sports participation has also been shown to have effects on the wellbeing of adolescents (Brown & Blanton, 2002; Donaldson & Ronan, 2006; Merglen et al., 2014). While the amount of vigorous physical activity has been shown to be beneficial, there may be an important balance as to how much sports training is good for adolescent wellbeing (Merglen et al., 2014). While, individuals who only participate in a low amount (0-3.5 hours) of weekly sport have shown the highest risk for poor wellbeing, adolescents who partake in '*extremely high*' levels (over 17.5 hours) of sports participation per week have *also* been shown to have higher risks of *poor* wellbeing, compared to those who partake in average to '*high*' amounts of sports per week (Merglen, 2014). Research has indicated that levels of wellbeing peaks at 14 hours of sports activity per week, and that there is an important balance between too little and too much practice per week, for sporting to have the most positive effects on wellbeing (Merglen et al, 2014).

Adolescents who participate in sports report lower risks of both physical and mental health problems. However, it has been suggested that sports may attract those individuals who are already healthy and well-functioning (Steiner et al., 2000). Your psychological wellbeing may predict your sports participation – that is, those who have better mental health are more likely to play sports (Paluska & Schwenk, 2000; Steiner et al., 2000). This indicates a possible reciprocal relationship between sports participation and mental health/wellbeing. Despite this, several-sports specific factors have been identified that could serve as risk

factors for mental health issues including pressure from coaches, emphasis on body image, and personality characteristics (Steiner et al., 2000).

Self Esteem and Sports

As previously discussed, adolescence is a crucial period in which self-esteem develops, and both positive and negative experiences can have an effect on this development (Bowker, 2006; Noel et al., 2013). Sports participation can be beneficial for the development of self-esteem through feelings of belonging, competence and group identity. Just as sports participation has a range of positive effects on physical activity, body image, feelings of physical competence and a range of other psychosocial outcomes (Daniels & Leaper, 2006), studies have also demonstrated that sports participation has a positive effect on all indices of self-esteem (Bowker, 2006; Haugen et al., 2011; Slater & Tiggemann, 2011; Slutzky & Simpkins, 2009). It appears the sports environment provides the opportunity for self-evaluation, peer comparison, and furthermore may help facilitate the development of positive self-esteem and self-concept (Slater & Tiggemann, 2011). However, sports are also a context in which negative experiences from teammates, coaches, other teams, and pressure from societal norms can have detrimental effects on self-esteem (Bowker, 2006).

Research has indicated the number of sports played, years' experience, team vs. individual sports, and gender are linked to levels of self-esteem (Bowker, 2006; Slutzky & Simpkins, 2009; Daniels & Leaper, 2006). It has been suggested that participating in sports both short and long term is positively related to self-esteem globally and physically (Bowker, 2006). Sports participation also shows increased levels of self-esteem for both girls and boys, with the exception of self-esteem associated with physical appearance, in which males did not show any relationship between physical self-esteem and sports participation (Bowker, 2006; Slater & Tiggemann, 2011).

Experiences in sporting contexts may also influence an individual's self-esteem (Slater & Tiggemann, 2011; Smoll et al., 1993). Coaches' behaviour towards players may be one of many experiences that have the potential to increase or decrease self-esteem (Smoll et al., 1993). Children with already low self-esteem may benefit more from positive feedback than those with higher self-esteem, and a coach's behaviour may be pivotal in these scenarios. A seminal study conducted by Smoll and colleagues (1993) was one of the first to look at coaching behaviours and their effect on a player's self-esteem. Eight coaches participated in a training programme about encouragement, support, and quality instruction, while another 10 coaches were not. There was a statistically significant increase in general self-esteem in boys with baseline low self-esteem who played for the trained coaches, while boys in the control groups did not show any increase in self-esteem across the sports season (Smoll et al., 1993). Researchers concluded that coaches who are more supportive and provide positive sporting environments promote the self-esteem of the players, giving insight into the possible harsh cultural norms that are associated with sporting (Smoll et al., 1993).

Sporting in New Zealand

Many young people in New Zealand secondary schools participate across many different sporting disciplines. New Zealand 2019 census data indicated that 51% of students had participated in a sport for a meaningful period (six or more weeks: School Sport New Zealand, 2019). Students from across New Zealand provided information about their sporting involvement, and 263,014 secondary school students (138,848 males & 124,166 females) participated in sports in 2019. Eighty-four different sporting disciplines were reported, with rugby union being the most popular sport for boys (20,688), and netball the most popular for girls (26,524: School Sport New Zealand, 2019). While the sporting culture in New Zealand helps to form a sense of national identity and community, there are some contexts in which the New Zealand sporting scene can be detrimental to our athletes.

Tall Poppy Syndrome

‘Tall Poppy Syndrome’ (TPS) is generally defined as members of the public insulting or doubting an athlete’s ability, as well as denigrating their success (Pierce et al, 2017). TPS is identified as a common attitude seen in the context of sport in New Zealand and Australia (Feather, 1989).

Anecdotally, TPS has a significant influence on the 'social psyche' of New Zealanders in relation to sports participation and sporting success. Furthermore, TPS is infused throughout society and, whilst it is evident in other countries, it is taken to particularly extreme lengths in New Zealand and Australia (Feather 1989; Pierce et al., 2017). While TPS is experienced at all levels of sports, the values and beliefs that TPS promotes may be instilled early on. Elite New Zealand athletes have suggested that TPS is at its worst during the earlier stages of sports development and is most common in youth and school sports (Pierce et al., 2017). Considering that youth and adolescence is such a crucial time for identity and self-esteem development (Noel et al., 2013), the experience of TPS may have negative effects on our young sports stars. Athletes in New Zealand have communicated that TPS occurs *irrespective* of how much you promote your success or not, indicating a possible societal norm in New Zealand to bring down those who are successful (Pierce, et al., 2017).

A theoretical foundation to understand TPS is social comparison theory (Pierce et al., 2017), which suggests that when individuals want to gain accurate evaluations of their own skills and abilities, do so by comparing themselves to others (Festinger, 1954). As a result of this comparison people can obtain an understanding of themselves. It is predicted that comparing to an individual of greater ability or skill, this would result in a negative impact on one's self-evaluation, and when making comparisons with persons with less ability, this would result in a positive impact on one's self-evaluation (Pierce et al., 2017). Therefore, we

can understand TPS as bringing down the high achiever to close the gap between their abilities and our own (Festinger, 1954). This is described by Feather (1989) as ‘cutting down’ Tall Poppies (high achievers) and results in a decrease of negative self-comparisons and can boost our own self-esteem (Pierce et al., 2017).

Both positive and negative effects of TPS have been identified by elite New Zealand athletes (Pierce et al., 2017). Positive TPS, has been described as a "reality check", that, sometimes the public's choice to 'cut them down' was warranted and helped to keep them humble (Pierce et al., 2017). However, negative effects included the development of avoidance coping strategies, such as ignoring, psychological distancing, discounting, and focusing on other or unrelated tasks (Anshel & Anderson, 2002) in order not to damage the athletes self-confidence, self-esteem, or general wellbeing (Pierce et al., 2017). Athletes indicated they were sometimes unable to ignore, or have a positive outlook, on TPS. Despite even engaging in positive coping strategies, athletes described their experiences with TPS as negative, and leading to detrimental effects to their motivation, performance, and furthermore their wellbeing (Pierce et al., 2017).

TPS is a dominant socio-cultural phenomenon occurring in the sporting arena of New Zealand, and is experienced by many individuals. Whilst TPS may have some positive consequences, the experiences surrounding TPS can have a detrimental and negative effect (Pierce et al., 2017). It is suggested that the presence of TPS in sporting may also affect adolescent's development of social identity, self-esteem, and attitudes and beliefs. (Pierce et al., 2017).

BIRGing and CORFing

Basking in reflected glory (BIRGing) and cutting-off-reflected failure (CORFing) are two sports-related phenomena first introduced by Wann and Branscombe (1990), and framed

within Social Identity Theory (SIT; Ware & Kowalski, 2012; see pages 49-52 for expansion on SIT). BIRGing relates to an individual's desire to associate themselves with other successful individuals, to share in the glory of another team, and boosting one's ego and self-esteem in the process. CORFing is the process of distancing from unsuccessful others or dissociation from a team after loss, therefore enabling the individual to preserve their own positive self-image (Wann & Branscombe, 1990; Ware & Kowalski, 2012). Not all people and/or fans BIRG and CORF, and some do it more than others. Those who are seen as 'die hard' fans are more likely to BIRG and CORF no matter their gender (Ware & Kowalski, 2012). If we relate this to New Zealander's and their cult-like fandom towards rugby, we can often see signs of BIRGing and CORFing. When the All Blacks win a game, one often hears fans using inclusive language (such as "*we*" won), however when the All Blacks lose, distancing language is used (such as "*they*" lost). While both strategies are used by fans, CORFING is mostly used by 'low identity' fans as 'high identity' fans are unable to dissociate themselves from the fortunes of the team.

The lack of ability to distance can have detrimental effects on the psychological wellbeing of these 'die hard' fans, as their self-esteem and personal self-worth may be threatened, through investment in the fortunes of their team (Ware & Kowalski, 2012). These differences in low-identity and high-identity fans also extends into the types of behaviours expressed after a win or loss. Researchers have found that high identity fans are more likely to express anger rather than sadness when their team loses, while low identity fans are more likely to express sadness (Crisp et al., 2007; Ware & Kowalski, 2012). This type of behaviour can be seen in New Zealand, with articles and anecdotes about the spike in domestic violence rates when the All Blacks lose a game. For instance, in 2010 a stuff.co.nz article (Fox, 2010) described police concern about domestic violence in the All Blacks did not win the Rugby World Cup. Theoretically, this is due to high-identity fans feeling the loss

of the team as their own personal failure and therefore CORFing may be a coping strategy to maintain their self-esteem and wellbeing until the next win (Ware & Kowalski, 2012).

Study One

Rationale

Whilst there is a significant body of research surrounding sports participation and its effects on both physical and mental health, many of these studies were completed overseas. In this thesis I focus specifically on New Zealand adolescents and how sports participation and belonging may affect their mental health. While we might anticipate many international findings are relevant to our context, this cannot be assumed given our particular sporting and cultural profile.

The review above also demonstrates a clear gender disparity in wellbeing. Therefore, not only would it be advantageous to assess the effect of sports belonging on adolescents, but also if gender and sports participation interact with each other on the relationship with wellbeing. Expanding what we know about sports and wellbeing in New Zealand may be advantageous to our understandings of adolescent mental health, given the decline in the mental health of youth (Fleming et al., 2020; Keyes et al., 2019), therefore emphasising the importance of understanding possible protective and risk factors to wellbeing – including gender and sports participation.

Aim

The aim of this first study of my thesis is to assess the mental health and wellbeing of secondary school adolescents in New Zealand across two groups of sports participation; those who do not belong to a sport, and those who do belong to a sport. I shall investigate the differences in depression, anxiety, and self-esteem as measures of mental health and wellbeing. Sex differences in each of the above variables will also be assessed. I will also

investigate the possible mediating effect of self-esteem on the relationship between gender and depression, gender and anxiety, as well as investigating if self-esteem has a mediating effect on the relationship between sports participation and depression, and anxiety.

Hypothesis

Based on previous literature I predict that belonging to a sports team will be associated with positive benefits to mental health and wellbeing (Bowker, 2006; Brown & Blanton, 2002; Donaldson & Ronan, 2006; Downs & Ashton, 2011; Hanson et al., 2003; Merglen et al., 2014; Steiner et al., 2000). I also anticipate that there will be significant sex differences in wellbeing measures, with females demonstrating higher scores in depression and anxiety, while showing lower scores in self-esteem compared to males (Bowker, 2006; Daniels & Leaper, 2006; Noel et al., 2013). I will also explore whether sport and sex interact to predict wellbeing.

Mediation hypothesis

I also hypothesise that there will be a statistically significant mediation effect of self-esteem on the relationships between (a) sex and depression, (b) sex and anxiety, (c) sports belonging and depression, and (d) sports belonging and anxiety. A finding of a mediation might indicate, for example, that one of the mechanisms through which sports participation impacts on wellbeing is through promoting self-esteem.

Method

Participants

Participants were 371 (182 males, 189 females) Wellington secondary school students recruited through the Youth Wellbeing Study (YWS) – drawn from 16 secondary schools around the broader Wellington region. Male participants were aged between 13 and 17 years

old ($M = 14.2$, $SD = 0.87$), and female participants were aged between 13 and 16 years old ($M = 14.3$, $SD = 0.91$).

Materials

Mental Health and Wellbeing (Depression and Anxiety)

To assess the mental health and wellbeing of participants 14 items from the Depression, Anxiety and Stress Scale-short (DASS-21: Lovibond & Lovibond, 1995) were used. Due to time constraints with data collection, only the Depression and Anxiety subscales from the DASS-21 were used, each subscale containing seven items. Participants were asked to read each of the statements and to indicate how much the statement applied to them in the last week. Participants reported their answers on a four-point Likert scale, 0; *did not apply to me at all*, 1; *applied to me to some degree, or some of the time*, 2; *applied to me a considerable degree, or a good part of the time*, 3; *applied to me very much, or most of the time*. Participants answered questions on the depression subscale such as “*I felt that life was meaningless*”. To measure anxiety, participants were asked questions such as “*I experienced difficult breathing*”. See appendix A for the full measure. The seven items from each scale are averaged to give a DASS anxiety and DASS depression score. A higher score on each of the DASS subscales indicates higher levels of depression or anxiety. The scales demonstrated good internal reliability for the DASS depression ($\alpha = 0.92$), and DASS anxiety ($\alpha = 0.88$) subscales.

Self-Esteem

Self-esteem was measured using the Rosenberg Self-Esteem Scale (RSE: Rosenberg, 1965). The RSE is a 10-item scale developed to measure global self-esteem, initially with adolescents. The RSE is rated on a four-point Likert scale ranging from 1 - *strongly disagree* to 4 - *strongly agree*. The scale is split into five items which measure positive self-esteem, such as “*I feel that I am a person of worth*,” and five reverse-worded items that measure

negative self-esteem such as “*At times I think I am no good at all*”. See appendix B for the full measure. Once the negative self-esteem scores were reversed an overall global self-esteem score can be yielded, in which higher scores indicate higher levels of self-esteem. Satisfactory internal reliability was obtained for the RSE scale, $\alpha = 0.74$, within this data set.

Participants also completed various measures, provided demographic information, and indicated whether they belonged to various groups, such as a sports group.

Procedure

Ethics

Ethical approval for the Youth Wellbeing Study was granted by the New Zealand National Health and Disability Ethics Committee (12/NTB/35).

Recruitment

Initially, information about the YWS was promoted in school newsletters provided by the schools to parents. Prospective participants were provided with information pamphlets entailing details of the Youth Wellbeing Study during school assemblies. Consent to participate from a parent or guardian was required for those under 16 years of age. Those aged 16 or over were able to give their own consent. A small chocolate was provided to any individual who returned their parental consent form, regardless of whether consent was provided.

Administration

The survey was administered during school hours. Timing of administration was dependent on what worked best for the school. Students were given either a hard copy survey or a URL with the link to the survey once they had given their consent. Before the survey began, participants were briefed on the task and what the survey entailed. Participants completed a variety of measures and questions including the materials mentioned above, as

well as other wellbeing measures and demographic questions. Participants were informed that they did not have to complete the survey if they did not wish to do so, and that once they began they were able to stop at any time without consequence. Participants were given up to one hour to complete the survey.

Participants were encouraged to complete the survey under ‘test conditions’ - in silence, without sharing responses. The timing of survey completion varied across participants. Those who finished early were asked to work quietly on something else or otherwise occupy themselves. All participants were debriefed and given a list of mental health resources if they wished to get in contact. To ensure the safety of students, a registered clinical psychologist was on campus and available at all times during school visits. The onsite clinical psychologist oversaw the answers of the students. If any students were deemed ‘at risk’ the pastoral team at the school was notified. This referral was then followed up one week post survey administration to support the pastoral team.

Results

Gender Differences in Wellbeing

Table 1.

Descriptive Statistics for Gender Differences in Wellbeing

Variable	Female			Male		
	N	M	SD	N	M	SD
Depression	177	0.80	0.79	162	0.49	0.65
Anxiety	177	0.69	0.72	162	0.40	0.52
Self-Esteem	177	2.69	0.46	162	2.87	0.52

Note. Depression = DASS Depression subscale. Anxiety = DASS Anxiety subscale. Self-esteem = Rosenberg Self-esteem Scale

A one-way multivariate analysis of variance (MANOVA) was conducted to test the hypothesis that there would be one or more mean differences between gender (male or female) on wellbeing measure scores. A statistically significant MANOVA effect was

obtained, Pillai's' Trace = 0.06, $F(1, 338) = 7.30, p < .001$. The multivariate effect size was estimated at .062, indicating that 6.2% of the variance in the dependent variable was accounted for by sex. Follow-up univariate analysis of variance (ANOVA) indicated significant gender differences between depression anxiety, and self-esteem, $F(1, 339) = 15.22, p < .001, F(1, 339) = 17.31, p < .001, F(1, 339) = 9.97, p = .002$ respectively. Males scored significantly higher on the RSE-scale ($M = 2.87, SD = 0.52$) compared to females ($M = 2.69, SD = 0.46$). Females scored significantly higher on the DASS Depression scale ($M = 0.80, SD = 0.79$) compared to males ($M = 0.49, SD = 0.65$). For the DASS Anxiety scale, females showed significantly higher scores ($M = 0.69, SD = 0.72$) compared to males ($M = 0.40, SD = 0.52$).

Sports Belonging and Wellbeing.

Table 2.

Descriptive Statistics for Wellbeing Measures by Gender

Variable		No Sports Belonging			Belongs to Sport		
		N	M	SD	N	M	SD
Depression	Male	68	0.58	0.71	94	0.43	0.61
	Female	78	0.94	0.88	99	0.69	0.71
	Total	146	0.77	0.82	193	0.56	0.67
Anxiety	Male	68	0.44	0.60	94	0.37	0.45
	Female	78	0.76	0.77	99	0.63	0.68
	Total	146	0.61	0.72	193	0.50	0.59
Self-Esteem	Male	68	2.83	0.54	94	2.89	0.50
	Female	78	2.68	0.49	99	2.70	0.45
	Total	146	2.75	0.52	193	2.79	0.48

Note. Depression = DASS Depression subscale. Anxiety = DASS Anxiety subscale. Self-esteem = Rosenberg Self-Esteem Scale.

Table 3.*Correlation Matrix for Study One Variables*

Variable	N	1	2	3	4	5
1. Gender	371	-	-	-	-	-
2. Sport Belonging	346	-.03	-	-	-	-
3. Self-Esteem	369	-.18**	0.05	-	-	-
4. Depression	366	.21**	-.14*	-.35**	-	-
5. Anxiety	368	.24**	-.09	-.32**	.76**	-

Note. Gender: 1 = Male, 2 = Female; Sport Belonging 1 = No belonging, 2 = Belonging.

** Correlation is significant at the 0.01 level (2-tailed). * Correlation is significant at the 0.05 level (2-tailed)

Correlation analyses were conducted to assess the associations between sports belonging, gender, and wellbeing variables. As expected, self-esteem was significantly, negatively associated with both anxiety and depression (see table 3), indicating that as self-esteem *increases*, levels of depression and anxiety *decrease*. A significant negative relationship was observed between sport belonging and depression, indicating levels of depression *decrease* when belonging to a sport increases. However, no significant associations were found between sports belonging and either anxiety or self-esteem.

A one-way MANOVA was conducted to test the hypothesis that there would be one or more mean differences between belonging to a sports team, and not belonging to a sports team on wellbeing measure scores. Results demonstrated only a marginal multivariate effect, Pillai's Trace = 0.02, $F(1, 338) = 2.24$, $p = .083$. A significant difference between sports belonging and DASS depression scores was obtained, $F(1, 338) = 6.30$, $p = .013$. Those who belonged to a sports team showed significantly lower DASS Depression scores ($M = 0.56$, $SD = 0.67$) compared to those who did not belong to a sports team ($M = 0.77$, $SD = 0.82$). No significant differences were found between RSE or DASS Anxiety scores and belonging to a

sports team, $F(1, 338) = 0.66, p = .418$ and, $F(1, 338) = 2.05, p = .153$, respectively.

Belonging to a sports team did not produce any significantly different RSE scores ($M = 2.79, SD = 0.48$) compared to not belonging to a sports team ($M = 2.75, SD = 0.52$). No significant differences in DASS anxiety scores were found between belonging to a sports team ($M = 0.50, SD = 0.61$) and not belonging to a sports team ($M = 0.61, SD = 0.72$). Taken together, these results indicate that belonging to a sports team does not influence levels of self-esteem or anxiety, but that sports participation may buffer against depression.

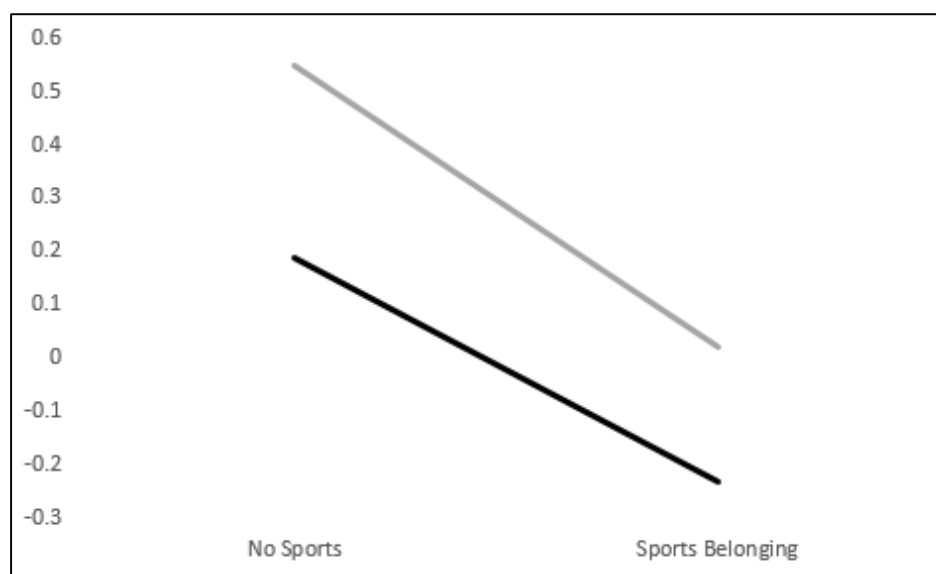
Gender, Sports Belonging and Wellbeing

A two-way MANOVA was conducted to test the possible interaction between gender and belonging to a sports team, and its effect on wellbeing measures. A non-significant interaction was observed between gender and belonging to a sports team on the combined dependent variables, Pillai's Trace = 0.03, $F(1,338) = 0.30, p = .822$. Thus, whether sports participation is associated with wellbeing does not depend on gender.

Moderation Analysis

Figure 1.

Moderation of Sports Belonging to Depression by Gender



Note. Grey line represents females, black line represents males.

To investigate if gender had a buffering effect on the relationship between sports participation and depression, an exploratory moderation analysis was conducted using ModGraph (Jose, 2013b) (see figure 1.) The interaction between sports participation and gender was not statistically significant, $\beta = -0.10$, 95% C.I. = [-0.41, 0.21] $p = .511$, however, indicating that being a male does not act as a buffer against depression, as previously suggested.

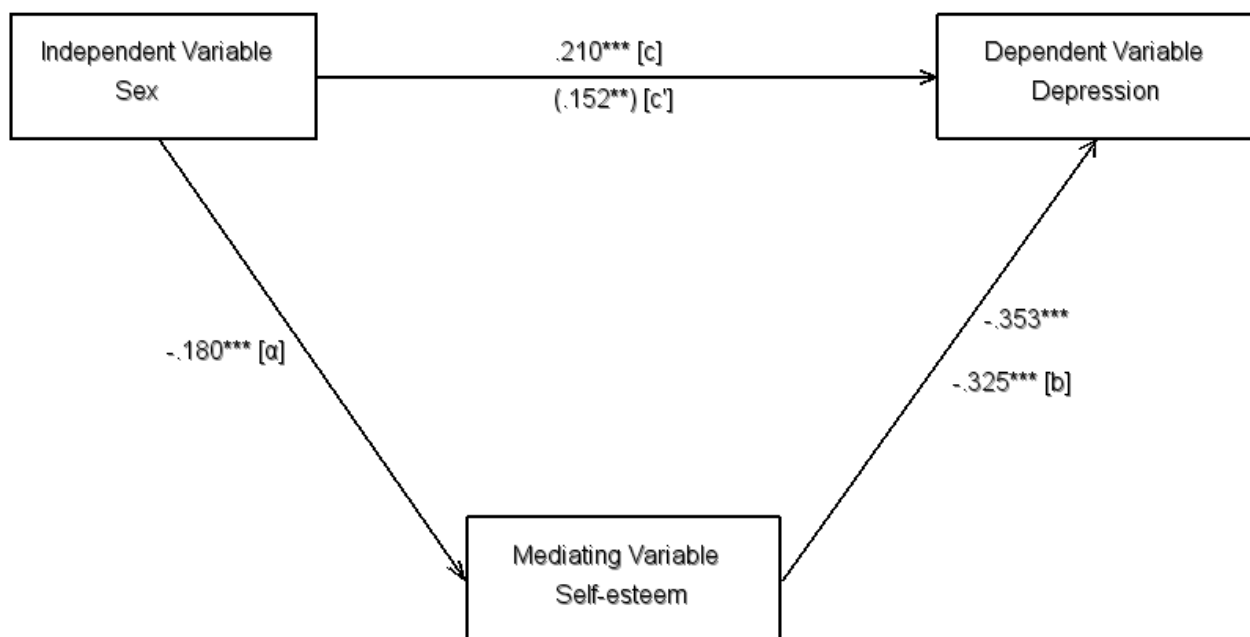
Mediation Analysis.

Mediation analyses were conducted using MedGraph (Jose, 2013a) to determine if self-esteem was a mediator in any of the four following relationships: sex and depression, sex and anxiety, sports participation and depression, and sports participation and anxiety.

Self-Esteem as a Mediator between Sex and Psychological Outcomes

Figure 2.

Mediation of Self-Esteem on Relationship between Sex and Depression



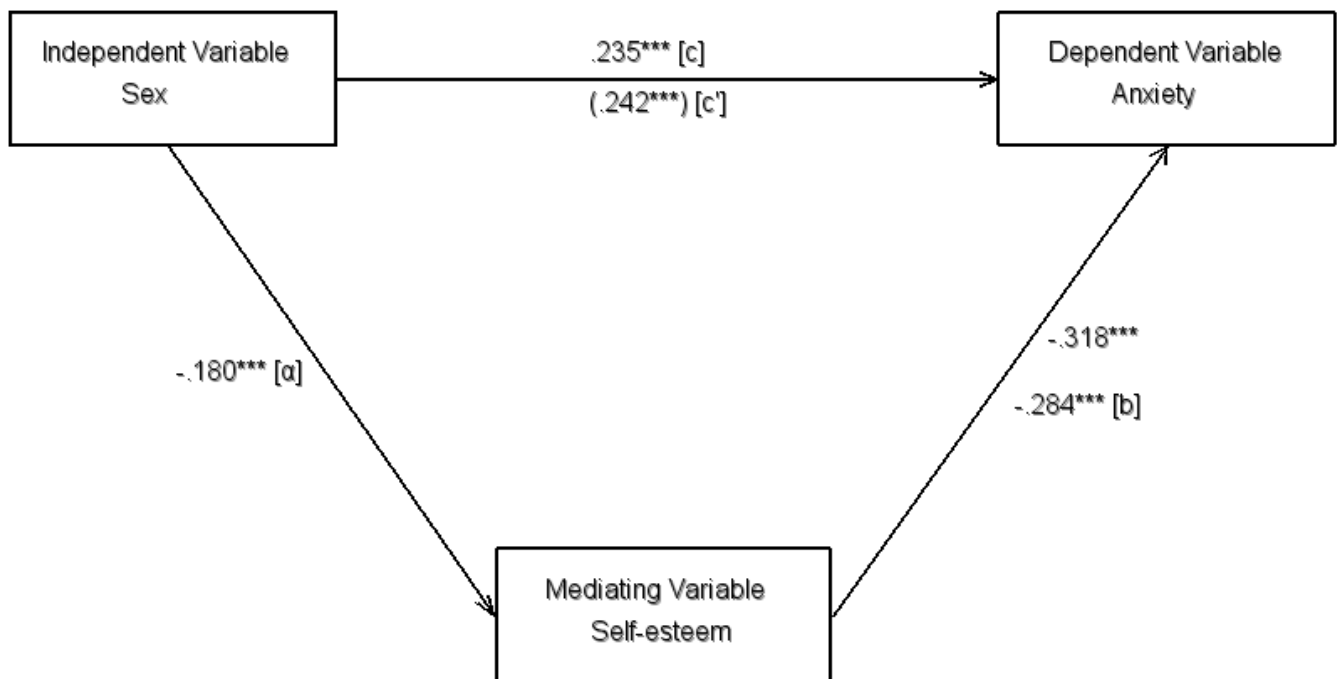
Note. The model fit was poor: $\chi^2(1, 366) = 69.94$, $p < .001$, RMSEA = .248, suggesting the model did not fit the data very well. Standardised regression weights shown and significance level * $p \leq .05$, ** $p \leq .01$, *** $p \leq .001$.

Self-esteem was examined as a mediator of the relationship between sex and depression. All estimated relationships were statistically significant, following the general pattern of correlations presented in Table 2. A positive relationship was observed between sex and depression, $\beta = .15$, $p = .002$. A negative relationship was found between both sex and self-esteem $\beta = -.180$, $p < .001$, and self-esteem and depression $\beta = -.325$, $p < .001$.

Consistent with hypothesis (a), self-esteem mediated the relationship between sex and depression - I found that the indirect A x B path from sex, to self-esteem, to depression represented a significant, indirect effect = .089, SE = 0.28, CI = [.03, .14], $p = .002$. This result suggests that sex predicted a decrease in self-esteem, which, in turn, predicted an increase in depression.

Figure 3.

Mediation of Self-Esteem on Relationship between Sex and Anxiety



Note. The model fit was poor: $\chi^2(1, 366) = 64.58$, $p < .001$, RMSEA = .238, suggesting the model did not fit the data very well. Standardised regression weights shown and significance level * $p \leq .05$, ** $p \leq .01$, *** $p \leq .001$.

I next examined if self-esteem mediated the effect of sex on the outcome of anxiety. All estimated relationships were statistically significant and follow the general patterns of

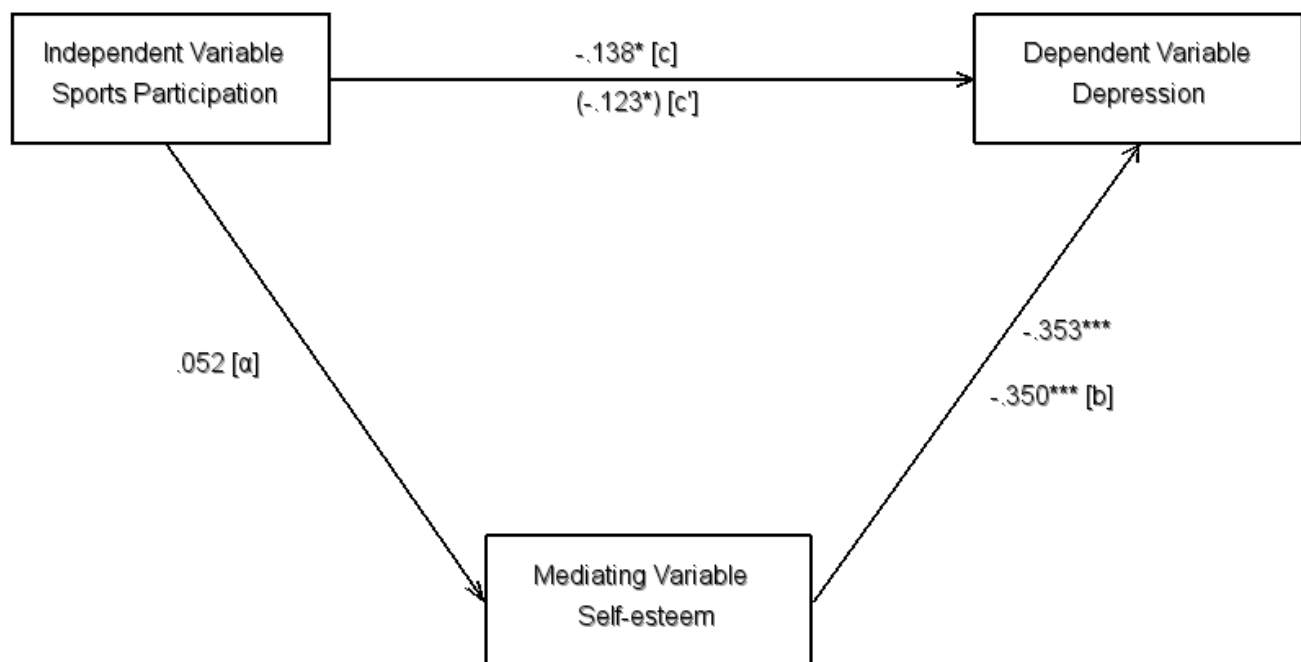
correlations presented in Table 3. A positive relationship between sex and depression was observed, $\beta = .24, p < .001$. A negative relationship was observed between both sex and self-esteem, $\beta = -.18, p < .001$, and self-esteem and anxiety, $\beta = -.28, p < .001$.

Consistent with hypothesis (b), self-esteem mediated the relationship between sex and anxiety. The indirect path between the A x B path was found to be statistically significant, indirect effect = .067, se = 0.02, CI = [.02, .11], $p = .002$. These results suggest that sex predicted a decrease in self-esteem, which, in turn predicted increased levels of anxiety.

Self-Esteem as Mediator between Sports Participation and Psychological Outcomes

Figure 4.

Mediation of Self-Esteem on Relationship between Sports Participation and Depression



Note. The model fit was poor: $\chi^2(1, 366) = 54.85, p < .001$, RMSEA = .150, suggesting the model did not fit the data very well. Standardised regression weights shown and significance level $*p \leq .05$, $**p \leq .01$, $***p \leq .001$.

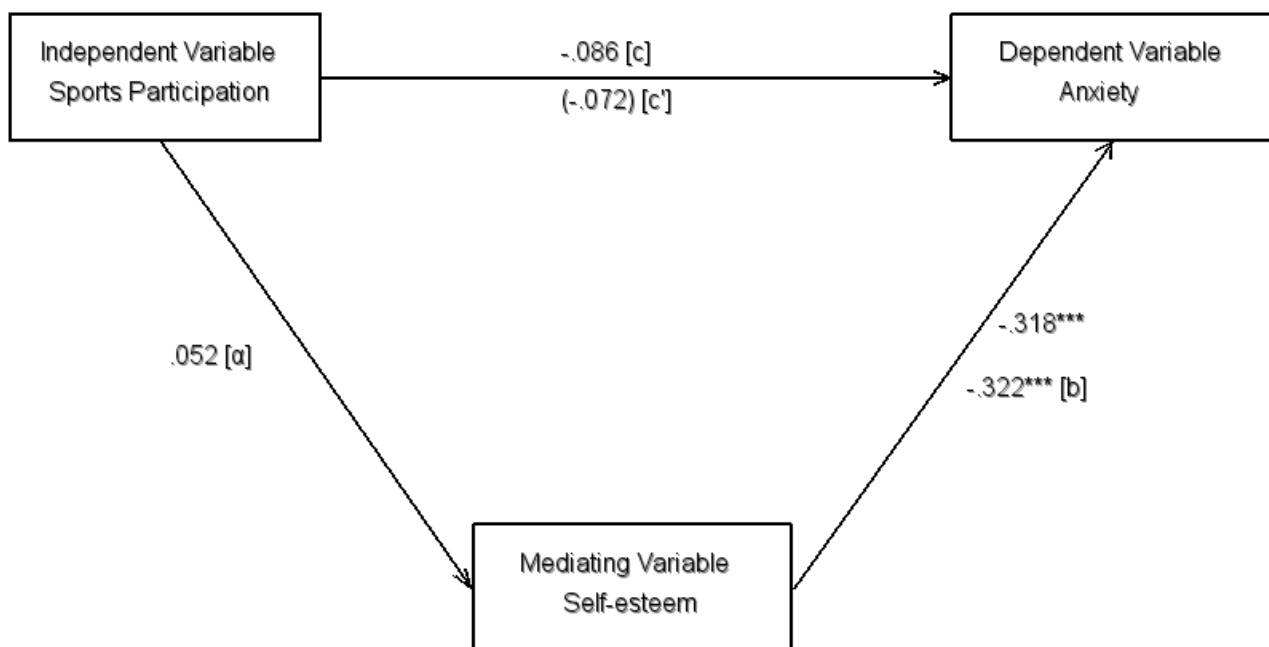
The relationship between sports participation and self-esteem was positive but not statistically significant ($\beta = .05, p = .385$), while both the relationship between sports

participation and depression ($\beta = .12, p .018$), and self-esteem and depression ($\beta = .35, p < .001$) were negative, and were statistically significant.

Inconsistent with hypothesis (c) the indirect A x B path was *not* statistically significant, indirect effect = $-.027$, $SE = 0.03$, $CI = [-.08, .03]$, $p = .340$. These results suggest that self-esteem does not mediate the relationship between sports participation and depression.

Figure 5.

Mediation of Self-Esteem on Relationship between Sport Participation and Anxiety



*Note. The model fit was poor: $\chi^2(1, 366) = 41.77, p < .001$, $RMSEA = .128$, suggesting the model did not fit the data very well. Standardised regression weights shown and significance level $*p \leq .05$, $**p \leq .01$, $***p \leq .001$.*

Using cross-sectional data, I examined whether self-esteem mediated the relationship between sports participation and anxiety. As anticipated the relationship between sports participation and anxiety was negative, but non-significant ($\beta = -.07, p = .174$). The relationship between sports participation and self-esteem was positive, but also non-

significant ($\beta = .05, p = .413$). A negative relationship was found between self-esteem and anxiety, and was statistically significant ($\beta = -.32, p < .001$).

Inconsistent with hypothesis (d) self-esteem did *not* mediate the relationship between sports participation and anxiety. It was found that the indirect A x B path from sex, to self-esteem, to anxiety was not statistically significant, indirect effect = $-.022$, $se = 0.02$, $CI = [-.07, .02]$, $p = .341$. These results suggest that while higher self-esteem predicts lower anxiety, self-esteem did not mediate this relationship.

Discussion

Study one investigated the relationship between sports participation and wellbeing in a sample of school-aged adolescents. As expected, gender differences were found for depression, anxiety, and self-esteem (Altemus et al., 2014; Derdikman-Eiron et al., 2011; McLean et al., 2011; Nolen-Hoeksema & Girgus, 1994; Salk et al., 2017) - females demonstrated higher levels of depression and anxiety, while males exhibited higher levels of self-esteem. Consistent with expectations, belonging to sport was associated with lower levels of depression compared to those who did not belong to a sports team. Contrary to the hypothesis, no differences in anxiety or self-esteem were observed between participants who belonged to a sport and those who did not. Furthermore, no interaction was found between gender, sports belonging and wellbeing.

I also examined the potential mediating effects of self-esteem on depression and anxiety, for both gender and sports belonging. Consistent with predictions, self-esteem mediated the relationship between gender and both depression and anxiety. Being a female predicted lower self-esteem which in turn predicted both lower depression and anxiety. This suggests that one of the reasons why young women report poorer wellbeing may be that they feel less positively about themselves. However, this must only be considered indicative, as

the data are cross-sectional. Contrary to hypotheses, however, I found no mediating effect of self-esteem between sports belonging and either depression or anxiety. Whilst self-esteem predicted lower depression and anxiety, self-esteem did not mediate the effect of sports belonging on anxiety or depression.

Limitations and Future Directions

Due to the time restrictions of the survey administration, the full DASS measure was not able to be completed, and the stress subscale was not implemented. In future studies, the full DASS measure should be implemented to determine overall wellbeing, and to measure how sports participation may influence stress.

The YWS provided a relatively large sample, which is advantageous. However, this study was not designed with a specific focus on sports participation in mind. There were no specific measures about sporting, or its inherent ideals, beliefs and cultures. Furthermore, to determine sports participation a simple ‘*Yes/No*’ question was asked about if you belong to a sport or not. This one question does not give much information about individual’s sports participation. Differences may occur between those who play individual versus team sports (Merglen et al., 2014, Pluhar et al., 2019). This question also does not give insight into how hours and number of sports played may influence mental health and wellbeing. Therefore, it would be advantageous to use more in depth questioning about sports participation in future studies.

Due to lack of statistical power I was not able to conduct separate mediations for females and males. However, I could speculate the possible associations that may have been observed. Gender differences in self-esteem have been well established, with females showing *lower* levels of self-esteem compared to males. (Bowker, 2006; Derdikman-Eiron et al., 2011; Quatman & Watson, 2001) It is not far-fetched to assume that self-esteem would

have differing effects on the relationship between sports belonging and wellbeing for males and females. Sports participation has been shown to increase levels of self-esteem for both females and males (Bowker, 2006; Slater & Tiggemann, 2011). If a mediation was to be conducted separately for genders, we may find that both the male and female associations are significant. However, due to the gender differences in self-esteem we may find that for females, self-esteem explains more of the variance in the relationship between sports participation and depression or anxiety. Based on speculations above about the possible mediating relationships, it would be advantageous to conduct more in depth statistically analyses.

Summary and Conclusions

A large sample of secondary school adolescents were administered a survey as a part of the YWS study. Participants completed a multitude of measures and questions, however for this study I focused on the DASS depression, DASS anxiety, and RSE scales to assess mental health and wellbeing. Gender differences in the RSE and DASS depression and anxiety subscales were observed, suggesting that being male, may be a protective factor for depression, anxiety and self-esteem. Differences in depression were observed between sports participation groups, however no differences were observed for anxiety or self-esteem. These findings give insight into the possible protective factor or sports participation on depression. Self-esteem was found to have a mediating effect on the relationship between sex and depression, and sex and anxiety. However, self-esteem did not have a mediating effect on the relationship between sports belonging and either depression or anxiety. The choice of questioning for sports belonging may not be detailed enough to give full insight into the effect of sports participation on wellbeing, and therefore for Study Two, more detailed questioning will be implemented.

Study Two

The Relationship between Sports Participation and Wellbeing for Adolescent Males

Rugby in New Zealand

Sporting, especially rugby, is a huge part of New Zealand's culture, and is embedded in the nation's identity (Watson, 2007). The national rugby team: the 'All Blacks'⁴ and its members are praised and glorified as New Zealand celebrities, alongside being role models to many young men (Watson, 2007). Since the game was first introduced in the 1800's rugby has grown to become a vital part of the identity of both Pakeha and Māori males in New Zealand (Watson, 2007). As the game developed and its popularity increased, the values and beliefs that it promoted also became stronger and more prominent in New Zealanders (Watson, 2007).

The culture within rugby has often revolved around the celebration of masculine behaviours and embedding the '*kiwi bloke*'⁵ attitude. The 'kiwi bloke' is notorious for his hard man, 'boys don't cry' attitude (Penwarden, 2010). This emphasis on masculine expression may cause a hindrance on the mental health and wellbeing of those within the rugby environment (Pringle & Markula, 2005; Tagg, 2008). Due to rugby's roots in hegemonic masculine ideals and lack of change, this has had a significant influence on modern rugby culture, by promoting masculinity, aggression, and competitiveness (Anderson & McGuire, 2010).

Rugby is hugely popular in New Zealand, with over 150,000 registered rugby players (World Rugby, 2017), almost 500 clubs, as well as a majority of high schools in New Zealand have a first fifteen rugby team⁶ (NZ Rugby, 2021). Furthermore, it was estimated in June of 2018 that almost 1.7 million New Zealanders (43.6% above age 14) watch Rugby on

⁴ New Zealand's national rugby union team

⁵ A lovable male in New Zealand who enjoys watching sports, especially rugby, drinking beers with friends, who is also perceived as the strong silent type (Penwarden, 2010)

⁶ The starting team of 15 players in a rugby game.

TV whether it is international test matches, Super Rugby⁷, Mitre 10 Cup⁸ or other forms of rugby (Morgan, 2018). Rugby in New Zealand has also been described as not only a sporting activity or interest, but a national cult, in which all New Zealanders are expected to belong (Crawford, 1985). The ‘All Black’ name even comes with its own prestige, with it being suggested that becoming an ‘All Black’ represents the peak of social status, and the pinnacle of what it means to be a New Zealander (Crawford, 1985). The strong ties between rugby and New Zealanders’ identities starts from a very young age, with many boys growing up with ‘All Blacks’ players as role models, in the hopes of one day becoming an ‘All Black’ themselves (Watson, 2007). Many of these boys will pursue a rugby career through to high school and university, and a small number will become professional players. However, the attitudes and beliefs that are instilled into our men from a young age through rugby culture may also be detrimental to their wellbeing (Pringle & Markula, 2005; Watson, 2007). Furthermore, considering so many New Zealanders have some sort of involvement in rugby, the masculinity that has historically characterised the game could reach a large portion of the population, therefore hindering the improvements to stigma around mental health (Loader, 2018).

Mental Health in Rugby

The sporting industry is currently facing a great challenge of mental health and wellbeing among their athletes. Discrimination towards mental illness, stigma surrounding help seeking, campaigns and extensive media coverage have all had varying effects on mental health in the sporting industry (Hughes & Leavy 2012; Rice et al., 2016). Research has suggested that a key to changing stigma against mental health and promoting help

⁷ A professional men’s rugby union competition comprised of teams from New Zealand, Australia, South Africa, Argentina, and Japan

⁸ A professional rugby union competition for regions of New Zealand involving 14 teams

seeking behaviours is through campaigns that can be related to and understood by many different individuals and communities (Cross et al., 2011; Szeto & Dobson, 2010).

Literature has described the rugby culture as being dominated by masculine traditions, behaviours, and attitudes which have consequently promoted avoidance of emotional expression and discouraged help seeking behaviours (Anderson & McGuire, 2010; Pringle & Markula, 2005). In sporting institutions, mental health has long been ignored, hidden or overlooked, leading to negative associations with help seeking and mental health support/treatment (Anderson & McGuire, 2010; Bauman, 2016). This culture has led to males feeling the need to solve problems without the help of others, including mental health and wellbeing challenges. It has been suggested mens' inability and reluctance to express vulnerabilities or weaknesses may cause detriment towards help seeking behaviours (Nicholls et al., 2006; Rochlen et al., 2006). This behaviour is similar to a coping mechanism known as 'blocking' in which individuals actively try to avoid or disengage from a stressful situation, which can potentially intensify mental health or wellbeing struggles (Cresswell & Eklund, 2005; Nicholls et al., 2006).

However, the "epidemic of mental health" in New Zealand, as described by Peter Williams of News Hub ⁹(2019), has influenced an increase in services and resources being made available for New Zealanders. These resources and services have been created in the hopes of raising awareness about mental health, and to provide New Zealanders with a safe space to learn, gain access to, and to help with recovery. These campaigns include former All Black Sir John Kirwan and his work with depression.org.nz¹⁰. Sir John's campaigns were one of the first within New Zealand, sparking a conversation about the mental health and wellbeing of our rugby players in New Zealand (Loader, 2018).

⁹ A New Zealand journalism organisation

¹⁰ A New Zealand based website offering support services and guidance surrounding depression

Rugby New Zealand ¹¹ have also backed two campaigns in New Zealand surrounding mental health; *Stand Against Silence*¹², and *Headfirst*. These campaigns address the idea that many New Zealanders are ‘too tough’ to reach out for help and aim to remove stigma around mental health and wellbeing. These campaigns promote that it is important to seek advice or help and break the silence on mental health conversations. *Headfirst* is a sport orientated campaign that is aimed to help those in the rugby community such as players, coaches, support staff and families with their mental health and wellbeing (headfirst.co.nz, 2020). These campaigns are being used not only as a resource and service for those who are seeking help with mental illness, but to spread positive messages about how even the ‘toughest’ of our New Zealanders (such as rugby players) can experience mental illness, giving insight into a societal issue present in New Zealand. The aims surrounding the *Headfirst* initiative also suggest there are specific mental health challenges among the New Zealand rugby community.

Sports and Masculinity

Masculinity refers to the social roles, behaviours and meanings that are prescribed for men in any society at any given time (Kimmel, 2001). These are normative gender ideologies separate from the concept of biological sex (Kimmel, 2001). Young boys learn the behaviours and ideologies surrounding masculinity through the observation of other men in their lives, within communities and through social norms (Paechter, 2007). In each culture or society, there are variations of what it means to ‘be a man’ or be masculine with New Zealand, having the concept of the ‘*Kiwi Bloke*’ (Pringle, 2004).

Rugby was once a ‘man’s only’ sport, until 1989 when the first women’s rugby team debuted (Watson, 2007), and even though now there is success in female New Zealand rugby,

¹¹ New Zealand sports organisation that is specific to rugby

¹² A mental health campaign in New Zealand promoting men to have conversations about mental health, and not to stay silent when men need help

it is still seen as male-dominated. This can be seen with the pay disparity between the ‘All Blacks’ and Women’s ‘Black Ferns’¹³. In 2017 the contracts for the Black Ferns ranged from \$30,000 to \$45,000, while their male counterparts in the All Blacks had contracts ranging between \$330,000 and \$950,000 (Paul, 2017). Whilst rugby is described as a part of the national identity of New Zealand, it is strongly based around a masculine identity (Harris & Clayton, 2007; Pringle & Markula, 2005; Watson, 2007).

Pringle (2004) argues that sports are a social institution in which ‘dangerous masculinities’ are promoted, often encouraging the concept of male dominance. The discourses surrounding rugby in New Zealand developed between 1920 and 1970 and mostly positioned rugby as a ‘hard man’s game’ and a maker of moral and healthy men (Watson, 2007). This laid the foundation for rugby to become the national game of New Zealand, and further solidify the game as a part of “our” identity (Pringle, 2004). From the onset of the dominance of rugby in New Zealand, the sport became a hard reality of life for many young males in the country. New Zealand’s national rugby team the ‘All Blacks’ have been exceptionally successful. The All Blacks are the most successful international men’s rugby team of all-time with a win percentage of 77.41% (over 580 test matches) between 1903 and 2019 (All Blacks, 2019), have won four out of the nine Rugby World Cup finals and held the number one world ranking for almost a decade (All Blacks, 2019).

Pringle (2004) researched the history of rugby in New Zealand and its associations with masculinity, specifically how a male-dominated sport associated with violence, injury and sexism has come to be New Zealand’s national sport. Pringle (2004) discusses how sports in New Zealand is still regarded as a vital key to the development of masculinity in New Zealand society. Sports influence how boys and men define and differentiate themselves in relation to being masculine (Pringle, 2004). The primary messages that young males

¹³ National women’s rugby union team for New Zealand

receive in New Zealand about 'appropriate' masculinity are still grounded in traditional notions of masculinity. Furthermore, participation in rugby comes along with learning what it means to be a New Zealander, and circles back to the idea of the 'kiwi bloke'. The dominance of the game has stayed prominent in our society to date, and has promoted the concept that 'real men' are tough and ignore pain, in both the physical and mental sense (Pringle, 2004)

Given this history, it has been particularly meaningful that mental health campaigns in New Zealand are trying to break down social norms that have been created, in part, by rugby and cemented in the identity of many New Zealanders. The ideals and values created by the dominance of rugby in New Zealand may be having negative effects on contemporary young men, as this identity may not only be detrimental to their wellbeing but may foster young men having unhealthy expectations of who they are expected to be, and how they should act (Nicholls et al., 2006; Pringle, 2004; Pringle & Markula, 2005).

School sports and physical education activities have been traditionally seen as important educational contexts for the shaping of male attributes, values, and aspirations (Hickey, 2008). However, these sporting contexts have also demonstrated the emergence of negative cultures such as entitlement, abuse, exclusion, and hyper-masculinity (Hickey, 2008). Hyper-masculinity refers to the exaggeration or excessive performance of stereotyped male behaviours, these are often expressed as stoicism, hardness, forcefulness and rebelliousness (Hickey, 2008). Qualitative research surrounding sporting culture with adolescents has provided insight into the hyper-masculine culture and narratives in these activities (Hickey, 2008). During team sports competitions, team members are encouraged to differentiate themselves from the opposing team and its members. The pursuit of shared goals, such as winning the game, leads to a collective strengthening of the team members' bond, and often leads to construction of the enemy being inferior or weak. Unregulated, this

type of behaviour has the potential to lead to abusive behaviour towards not only the opposition, but any individual not in the team (Hickey, 2008).

Hyper-masculine attitudes have become evident in sporting contexts among adolescents including adolescent males often drawing on hyper-masculine discourses in sport to distinguish what is tough and manly, opposed to feminine and weak (Hickey, 2008). Individuals often use these discourses to tease each other and to differentiate those who are 'manly enough' for sports (Hickey, 2008). As an attempt to maintain status within the sporting group or team, depreciatory labels are often developed to identify and position outsiders of the group. This type of behaviour is repeatedly seen in those sports that are considered to be more 'manly' or male-dominated, such as rugby, football, baseball, wrestling, and lacrosse (Hickey, 2008). Young males may choose not to participate or take interest in these stereotypically masculine sports; however, this still positions them to have their own beliefs, attitudes or identities challenged by those who hold these hyper-masculine beliefs (Hickey, 2008). Young men might opt into prototypically masculine sports; in the hopes to be seen as 'manly enough', but end up taking on hyper masculine characteristics and behaviours as these environments promote and reinforce hyper masculine attributes and beliefs.

In New Zealand many of our males are judged on their athletic ability and/or their interest in sports, especially rugby. These judgments create strong gender roles in New Zealand society surrounding what it means to be a 'man' (Pringle, 2004; Pringle & Markula, 2005; Watson, 2007), and the choice to 'belong' within these groups may have an impact on adolescents' feelings of self-worth and self-esteem. Studies have indicated that athletic ability and interest are often the strongest predictors of popularity among young males, indicating the importance of sports participation on peer acceptance, and the choice not to adhere to

these gender roles may have negative effects on self-esteem and wellbeing (Daniels & Leaper, 2006).

It is suggested that the attachment between the New Zealand's identity and rugby may be an influential factor in the concealment of mental health issues. Rugby culture, not only in New Zealand, is imbedded with masculine ideals and values (Pringle & Markula, 2005). Therefore, this culture that encompasses hegemonic masculinity that prioritises success, competitiveness, athleticism, and aggression may influence the mental health and wellbeing of its players (Harris & Clayton, 2007).

Social Identity

Social identity is defined as a person's sense of who they are based on their group membership (Tajfel et al., 1979) and adolescence is a key time in the development of an individual and their identity (Shaw et al., 1995). Participation and/or involvement in sporting activities may serve as a source for the formation of one's identity and self-image. However, sporting participation may have both positive and negative effects on this formation. Due to societal pressures of sports being 'compulsory' or as a way to 'prove' oneself as a man, young male adolescents may feel limited in their explorations of alternative activities and identities (Shaw et al., 1995).

At the beginning of any All-Blacks rugby game, the team performs their famous 'haka'. In this moment, the men are seen as more than just a squad of players. They radiate a sense of tradition, purpose, strength and belonging that surpasses their individual identity – they have a *team identity* (Thomas et al., 2017). This strong team identity has been suggested to be one of the reasons why the All Blacks are arguably the most successful professional sports team (see page 46; Thomas et al., 2017). The strength of the team's identity therefore may have effects on the performance of their players, and this may have a chain of effect on an individual's own self-concept, self-esteem, and wellbeing (Thomas et al., 2017).

Belonging to a group is an especially important part of identity development, and sports participation or following may be contexts in which this development is particularly salient (Thomas et al., 2017). Social Identity Theory (SIT) was developed by Henri Tajfel (1979), who proposed the groups an individual associates themselves with are an important source of belonging, self-esteem, and identity. SIT divides the world into two groups “them” and “us”, which are based on social categorisations (Tajfel et al., 1979). These groups are formed through normative cognitive processes in which differences and similarities among and within groups are identified. Individuals assign themselves to groups/categories that are similar to ourselves, and this gives us information on how we are expected to act (Tajfel et al., 1979). The identity of the group is adopted and, as a result self-esteem becomes inherently intertwined and can be affected by the way the group is treated by ‘others’ (Tajfel et al., 1979). SIT is important in relation to sports, whether an individual physically participates in the sport, or is just a supporter of a particular team (Bowker, 2006). Sports participation and/or support gives individuals a sense of belonging, identity, and self-esteem and the way in which an individual associates themselves with this group, and how they are treated by others may influence their psychological well-being (Bowker, 2006).

One of the first studies on leisure activity (including sports) and its effect on identity formation during adolescents was conducted by Shaw et al. (1995), who examined the relationship between participation in various leisure activities and level of identity development for male and female adolescents. Significant gender differences were reported, with males more likely to consider themselves to be physically active and to value physical activity compared to females, but no significant relationship was found between identity formation and sports/physical participation for males (Shaw et al., 1995). However, when asked "How would you describe yourself to someone who doesn't know you?" males were much more likely to describe themselves in relation to the sports in which they participate

compared to females (Shaw et al., 1995). Shaw et al. (1995) concluded that the possible contradiction between the quantitative and qualitative results could be an insight into how sports may have both a positive *and* negative effect on the development of young men. Sports play a large part in traditional gender roles already, however the experiences in sports also reinforce these gender roles (Shaw et al., 1995).

Whilst sports participation has been shown to have positive effects on mental health and wellbeing (Donaldson & Ronan, 2006; Merglen et al., 2014; Miller & Hoffman, 2009; Slater & Tiggemann, 2011), it is possible that certain identities or personalities associated with sporting may be having detrimental effects (Miller & Hoffman, 2009). The two stand-out identities that have come from sports research are ‘jocks’ and ‘athletes’ (Miller, 2009; Miller & Hoffman, 2009; Miller et al., 2006). Previously ‘jock’ and ‘athlete’ have been seen as interchangeable terms, however it has been suggested that these are distinct identities (Miller, 2009; Miller et al., 2006). A stronger affiliation to the athletic identity positively predicts a more task-based approach to athletic participation, whereas those who more strongly identified with the ‘jock’ identity have a more ego-orientated approach to sports (Miller, 2009).

Notable differences have been found in the attitudes and beliefs of those individuals who identify as either an ‘athlete’ or a ‘jock’ (Miller 2009, Miller et al., 2006). The more strongly you identify with either ‘jock’ or ‘athlete’, the more likely you are to demonstrate their respective behaviours (Miller, 2009; Miller & Hoffman, 2009). A significant positive relationship has been demonstrated between the jock identity and traits such as popularity, status, institutional support, overall sports rating, winning, risk-taking and playboy attitudes (Miller, 2009). Individuals who identify as ‘jocks’ see themselves as more popular, having a higher level of societal status, having more support from their sporting institution, and that

their sport is better than other sports (Miller, 2009). Attitudes surrounding winning, risk taking and being a ‘playboy’,¹⁴ are more dominant in those who identify more strongly as a jock, indicating that these individuals are also more likely to conform to traditional masculine norms (Miller, 2009). Those who identify as ‘an athlete’ also showed stronger attitudes towards winning, but weaker endorsement of playboy attitudes, indicating that the more strongly you identify with being an athlete, the less likely you are to endorse ‘playboy’ attitudes (Miller, 2009). The ‘jock’ identity has been suggested as being ‘*toxic*’ due to the attitudes and beliefs that are associated (Miller & Hoffman, 2009).

Previously, these differences in identities demonstrated influences on the mental wellbeing of adolescent sport participators (Miller & Hoffman, 2009). Holding an athlete identity also predicted lower odds of a past-year suicide attempt. However strong ‘jock’ identification has been associated with elevated likelihood of a past-year suicide attempt, indicating a possible relationship between mental wellbeing and health-risk behaviours related to the ‘toxic jock’ identity (Miller & Hoffman, 2009). The ‘jock’ and ‘athlete’ identities can therefore be seen as two important identities which entail different values, beliefs, actions, behaviours, and consequences. Identity can therefore have both positive and negative implications on an individual’s behaviour in relation to both societal and gender norms (Miller, 2009; Miller & Hoffman., 2009; Miller et al., 2006; Miller et al., 2002). These effects may also be distinguishable between those who play team or individual sports.

Team vs Individual Sports

Research has demonstrated that there are benefits to engaging in physical activity through sporting activity, compared to exercise alone (such as gym workouts). These benefits include decreased risk of anxiety, depression, feelings of hopelessness, suicidal ideation,

¹⁴ Irresponsible behaviour often associated with many causal sexual relationships (Miller, 2009)

suicidal attempts, and illicit drug use (Miller et al., 2002; Miller & Hoffman, 2009; Pedersen et al., 2017). Furthermore, those who participate in specifically team sports have been shown to score higher on wellbeing measures compared to those in individual sports (Merglen et al., 2014). Furthermore, team participation has been associated with lower depression scores compared to those in individual, and no sports categories. Those who participate in team sports have been shown to score higher on wellbeing measures compared to those in individual sports (Merglen et al., 2014). Indicating that there are possible increased benefits to wellbeing when engaging in a sport that is team based (Merglen et al., 2014; Miller & Hoffman, 2009).

It has been suggested that not all sports have the same effects on mental health. Significant differences have been observed in the psychological skills and motivation of athletes who play team sports compared to those who play individual sports (Pluhar et al., 2019). Playing on a team not only encourages physical fitness, but also allows children and adolescents to gain important mental and social skill, that they may not get from individual sports. Team sports can provide an opportunity for individuals to learn cooperation, and likely leads to a sense of support and acceptance from being a part of a team (Pluhar et al., 2019). Boone and Leadbeater (2006) found that adolescents who play team sports have positive experiences with coaching, skill development, and peer support, in turn leading increased social acceptance, decreased body dissatisfaction and fewer depressive symptoms. Therefore, participating in either an individual or team sport may have subtly different advantages and disadvantages (Kajbafnezhad et al., 2011; Nixdorf et al., 2016; Pluhar et al., 2019).

Slutzky and Simpkins' (2009) research indicates that those who spend more time in team sports report more positive sport self-concept, which in turn is correlated with higher levels of self-esteem, compared to those in individual sports, indicating a possible mechanism

between belonging to a team, and an individual's self-worth and self-esteem (Slutzky & Simpkins, 2009). There is an increased need for belongingness during adolescence, as individuals try to form their identity and 'fit in' with their peers (Daniels & Leaper, 2006). Longitudinal research has indicated that peer acceptance partially mediates the relationship between sports participation and global self-esteem for both boys and girls (Daniels & Leaper, 2006). Indicating that participating in sports, especially in team settings, may be a context in which this belongingness can be fulfilled, therefore having a positive effect on the self-esteem of adolescents (Daniels & Leaper, 2006; Slutzky & Simpkins, 2009).

Much of the literature concludes that the overall pressure for success, emotional cost of failure, competitive nature, and need for extreme commitment to sports teams creates detrimental effects to the well-being and mental health of athletes (Newman et al., 2016; Rice et al., 2016; Schwenk, 2000). Cultural norms, including intense masculine ideals, attitudes towards mental health, and poor promotion of wellbeing are highlighted as being significant risk factors to mental health and wellbeing to athletes (Anderson & McGuire, 2010; Bauman, 2016; Pringle & Markula, 2005). Furthermore, social identity may have important links to self-esteem, mental health, and overall wellbeing among sports participators (Bowker, 2006; Miller & Hoffman, 2009; Thomas et al., 2017; Shaw et al., 1995).

Study Two

Rationale

Study one was conducted to investigate differences in wellbeing based on gender, sports participation, and their possible interaction. Results indicated that there are marked gender differences in wellbeing, specifically with males showing higher levels of self-esteem, while females demonstrated higher levels of anxiety and depression. Furthermore, belonging to a sport may be a protective factor against depression. However, no differences were found

in levels of anxiety or self-esteem, in those who play sports, compared to those who do not. Expansion on current theories, as well as researching more specific factors in the sports participation and wellbeing relationship may be necessary to further our understanding. Therefore, Study Two will build upon the knowledge gained from Study One.

This study is being conducted for two main reasons. Firstly, considering that New Zealand male youth have been identified as one of the most vulnerable population for mental illness and suicide (New Zealand Ministry of Health, 2019), it is important to understand the underlying mechanisms leading to these issues. The male adolescent population in New Zealand are often under-researched and overrepresented in mental health/wellbeing research (Fleming et al., 2014). With such a sizeable portion of male youth being vulnerable to develop mental health issues, the need to understand the underlying mechanisms to this vulnerability are increasing. Furthering the knowledge in this area could not only help prevent and intervene for youth mental health issues, but further the positive development of these individuals into adulthood. It is possible, for instance, that the popularity of rugby may be having an impact on the mental health and high suicide rate of young males in New Zealand through encouraging young men to aspire to unreasonable, or potentially negative expectations.

Secondly, there is a lack of research surrounding rugby culture in New Zealand and its possible negative effects on New Zealand Youth. Much of the current literature investigates sports participation or leisure in general and does not focus on specific sports. Specifically in New Zealand, there is little research into rugby and rugby culture, and how it may be positively or negatively affecting our population. This study is being conducted in the hopes to further the research and knowledge surrounding sports participation, specifically rugby and its effect on the mental health and wellbeing of male adolescents in New Zealand.

Aim

The aim of this study is to assess the mental health and wellbeing of late adolescent males in New Zealand across four categories of sports participation: no sporting participation, individual sport, team sport (not rugby) and rugby participation.

The study will investigate differences in depression, anxiety, and stress as a measure of mental health. This study will also assess the mediating effects of masculinity, self-esteem, and social identity on the relationship between rugby participation and mental health/wellbeing.

Hypothesis

Based on the previous literature we can anticipate that participation in sport will be associated with positive benefits (Bowker, 2006; Brown & Blanton, 2002; Donaldson & Ronan, 2006; Downs & Ashton, 2011; Hanson et al., 2003; Merglen et al., 2014; Steiner et al., 2000). However, based on anecdotal evidence around the role of rugby ‘culture’ we might expect that the associations between rugby and wellbeing may be more nuanced than for sporting participation overall. Specifically, it may be the case that those who indicate they are rugby players may report poorer mental health outcomes than those who play other sports. I will also explore the relationship between playing rugby and, masculinity, self-esteem, sporting norms and social identity.

If the above mentioned is the case, then we may see that (a) rugby participation will be a negative predictor on wellbeing and mental health. However, this may not be the case and we may find that (b) rugby participation is a positive predictor of mental health and wellbeing. I will explore the possible mediating relationship that self-esteem, masculinity, and social identity may play in the relationship between sports participation and wellbeing.

Method

Participants

Participants were 158 first year psychology students from Victoria University of Wellington. Because of our focus on adolescent (operationalised as youth up to the ages of 19) males, only males between the ages of 17-19 were eligible to partake in the current study. Furthermore, this was a university sample, so minimum age for students was 17. Due to our focus on New Zealand youth, international or exchange students were ineligible to take part in the study. The age range for my participants was 18 to 19-years-old ($M=18.5$, $SD = 0.53$). It is worth mentioning that the majority of first-year psychology students at Victoria University are female (about two thirds), and so approximately half of the male students in the class have participated in this study.

Materials

Sports Participation

Sporting participation was assessed through a series of questions that were developed for this study. Firstly, participants were asked to indicate the nature of their engagement with sport by selecting the appropriate option from the following: “*I do not play sports, I play an individual sport, I play a team sport (not rugby), or I play rugby*”. Participants were then asked to indicate the sports that they engage in. This was done by selecting all the sports they played from a list provided and writing in any extra that were not on the list. Participants were also asked to indicate the ‘*main*’ sport that they play, i.e. the sport that they play the most, or spend the most time on. Other questions relating to sporting participation included if the sport was played socially or competitively, for how many years, and how many hours per week they spend training for their sport. Those who indicated they did not play any sports were directed straight to the survey and were not asked any of the above questions.

Mental Health and Wellbeing (Depression, Anxiety, and Stress)

To measure the mental health and wellbeing of our participants the full version of the Depression, Anxiety and Stress Scale (DASS: Lovibond & Lovibond, 1995) was used. The DASS is a 42-item scale that is used to measure depression, anxiety, and stress. Participants are asked to read each of the 42 statements and indicate how much the statement applies to them over the last week. Participants indicated their answers on a four-point Likert scale 0; *did not apply to me at all*, 1; *applied to me to some degree, or some of the time*, 2; *applied to me a considerable degree, or a good part of the time*, 3; *applied to me very much, or most of the time*. The DASS is separated into three subscales which measure depression, anxiety, and stress, each containing 14 items. Participants answered questions in the depression subscale such as *“I could see nothing in the future to be hopeful about.”* To measure anxiety, participants were asked questions such as *“I was worried about situations in which I might panic and make a fool of myself.”* An example of an item from the stress subscale is *“I tended to over-react to situations.”* See appendix C for the full measure. All 14 items in each subscale are then collated, with higher scores indicating greater depression, anxiety, or stress (see table 4). Within the current sample the DASS showed high internal consistency overall $\alpha = .97$, and within each subscale; DASS depression $\alpha = .95$, DASS anxiety $\alpha = .91$, DASS stress $\alpha = .93$.

Table 4.

DASS Subscale Scoring Classifications (Lovibond & Lovibond, 1995)

DASS Scoring	Depression	Anxiety	Stress
Normal	0-9	0-7	0-14
Mild	10-13	8-9	15-18
Moderate	14-20	10-14	19-25
Severe	21-27	15-19	26-33
Extremely Severe	28+	20+	34+

Self Esteem

Self-esteem was measured using the Rosenberg Self-Esteem Scale (RSE: Rosenberg, 1965). The RSE is a 10-item scale developed to measure global self-esteem in an individual. The RSE is rated on a four-point Likert scale ranging from 1 - *strongly disagree* to 4 - *strongly agree*. The scale is split into five items which measure positive self-esteem, such as “*I feel that I am a person of worth*”, and five reverse items that measure negative self-esteem such as “*At times I think I am no good at all*”. See appendix B for the full measure. Once the negative self-esteem scores were reversed an overall global self-esteem score can be yielded, in which higher scores indicate higher levels of self-esteem. A satisfactory internal reliability was obtained within this sample for the RSE, $\alpha = .85$.

Masculinity

To measure levels of masculinity the Masculine Role Norms Inventory - Adolescent-revised (MRNI-A-r) was used. The MRNI-A-r was developed by Levant et al. (2012) to measure the level of conformity to dominant masculine norms in adolescents. The MRNI-A-r is a 29-item measure that is separated into three main subscales: emotionally detached dominance, toughness, and avoidance of femininity. The items are rated on a seven-point Likert scale; 1 (*strongly agree*) to 7 (*strongly disagree*). An example question from the emotionally detached dominance subscale is “*guys shouldn’t ever show their feelings*”. Toughness was measured through statements such as; “*when the going gets tough, guys get tough*”. To measure avoidance of femininity statements such as; “*It is too girlish for a guy to wear make-up*” were used. See appendix D for the full measure. A higher score on the MRNI-A-r indicates higher conformity to masculine norms. The MRNI-A-r showed high internal reliability within this sample $\alpha = .96$. Each subscale also demonstrated satisfactory to

high internal reliability; Emotionally Detached Dominance $\alpha = .96$, Toughness $\alpha = .88$, Avoidance of Femininity $\alpha = .92$.

Sports and Identity

The Social Identity Questionnaire for Sports (SIQS) was used in order to measure how strongly sport influences self-identity. The SIQS was developed by Bruner and Benson (2018) as an instrument to measure how an individual feels about being a part of their sports team. The SIQS is a nine-item scale that is rated on a seven-point Likert scale, with 1 indicating *strongly disagree*, and 7 indicating *strongly agree*. Only participants who indicated that they were a part of a team sport, or rugby were given this measure. An example statement for this scale is as follows; “*I feel strong ties to other members of this team*”. See appendix E for the full measure.

To measure social identity for all the sports participation groups the SIQS statements were adapted, and the word ‘*team*’ was replaced with the word ‘*sport*’. An example of the adapted statements are as follows; “*I feel strong ties to other members of this sport*”. See appendix F for the full measure. To differentiate between the two scales, the original scale is labelled SIQ Team (SIQS-T), while the new adapted scale is labelled SIQS Sport (SIQS-S). Higher scores on both scales indicates their identity is more strongly tied with either their sport or team. Within this sample, both scales demonstrated satisfactory internal reliability; SIQS-T $\alpha = .81$, SIQS-S $\alpha = .87$.

Sporting Norms

To measure sporting norms the Sports Orientation Questionnaire (SOQ) was used. The SOQ was developed by Gill and Deeter (1988) to measure three facets of individual sporting norms; competitiveness, win orientation and goal orientation. The scale includes 25 statements rated on a five-point Likert scale from 1; *strongly agree* to 5; *strongly disagree*.

Once completed the SOQ yields the three scores. A total of 13 items is collated to yield the competitiveness score and an example statement from this question is “*I am a competitive person*”. The win orientation subscale comprises of six items, for example, “*Winning is important*”. To gain the goal orientation score six items are collated. An example of a goal orientation statement is “*I set goals for myself when I compete*”. See Appendix G for the full measure. Higher scores on each of the scales indicates lower levels of competitiveness, win orientation and goal orientation. A high internal reliability for the SOQ was obtained with this sample $\alpha = .95$. Each of the SOQ subscales demonstrated satisfactory to high internal reliability; Competitiveness $\alpha = .93$, Win orientation $\alpha = .84$, Goal Orientation $\alpha = .84$.

Procedure

Ethics

Ethical approval was granted for this study from the Victoria University of Wellington Human Ethics Committee (HEC0000028463).

Recruitment

Participants were recruited through the first-year subject pool programme at Victoria University of Wellington; IPRP (Introduction to Psychology Research Programme). This programme was created for first year students to partake in psychological studies and gain experience in this area. My study was 15 minutes long, which is the equivalent to 0.25 points. First year psychology students must participate in IPRP points as a part of a mandatory co-curricular research experience requirement. Those who do not wish to do so through active participation have the option of reading exercises instead

Administration

Data collection took place over 92 days (21/07/2020 - 21/10/2020). The survey was administered online and could be completed at any time of the participant's choice.

Participants were first presented with an information sheet which outlined the study. It was made clear that participation in this study was voluntary and that if they wished they could withdraw from the study at any time without consequence. Participants were also informed and assured that their answers would remain confidential, and that only the primary researcher and supervisor would have access to the data. Consent was gained from all participants. The survey took approximately 15 minutes and consisted of a variety of questionnaires which assessed sports participation, mental health/wellbeing, masculinity, identity and sporting cultural norms. Participants were presented with demographic questions about their gender, followed by questions surrounding sports participation, wellbeing measures, masculinity measures, and sporting identity and norms measures. Following participation, individuals were provided with a debrief statement and given details regarding community services that are available in relation to mental health and wellbeing in New Zealand. Participants were also given contact details of the researcher and supervisor if they wished to ask any further questions about the study.

Data Cleaning

Initial screening occurred to include eligible participants. However, the screening was not 100% effective and some participants were female (13), older than eligible age (8), or international students (2). Seminal demographic questionnaires were asked, and therefore able to pick up on this, and therefore these participants were excluded from the final data set. The final number of participants was 134.

Results

Descriptives

Sports Participation

The number of sports played by individuals was measured and it appears that rugby players in this sample on average played more sports than those who play individual and

other team sports (see table 5). This means that we are measuring the wellbeing on individuals who also play other sports and are not exposed to just rugby culture. Those who played individual sports were also more likely to play their sport competitively rather than socially (see table 5). This may be an important distinction in environments, as socially played sports may lead to different experiences.

Table 5.

Descriptive Statistics of Sports Participation Variables

	No Sports Participation		Individual Sports		Team Sport (not rugby)		Rugby	
N	55		29		40		10	
Variable	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Hours Per Week ^a	-	-	3.24	1.79	2.30	1.24	3.50	1.08
Years Played ^b	-	-	3.69	1.54	5.15	1.05	4.30	1.77
Number of Sports	-	-	1.76	1.30	1.55	0.75	1.90	0.88
Formality ^c	-	-	1.69	0.66	1.46	0.51	1.20	0.42

Note. ^a 1 = 0-2 hours, 2 = 2-4 hours, 3 = 4-6 hours, 4 = 6-8 hours, 5 = 8-10 hours, 6 = 10+ hours. ^b 1 = < 1 year, 2 = 1-3 years, 3 = 3-5 years, 4 = 5-7 years, 5 = 7-9 years, 6 = 10+ years. ^c 1 = Competitively and 2 = Socially.

Correlations

As expected, significant negative correlations were observed between RSE scores and scores from the DASS depression, anxiety, and stress subscales (see table 6).

A significant positive relationship between MRNI-A-r scores and DASS depression scores was demonstrated, as DASS depression scores increased as MRNI-A-r scores increased. Furthermore, significant positive relationships were found between DASS depression scores and EDD and AOF subscale scores (see table 6).

Table 6.*Correlation Matrix of Study Two Variables.*

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
1. Number Sports Played	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2. Years Played ^a	-0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3. Hours Played ^b	-0.03	-0.14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4. Formality ^c	-0.06	-0.23*	-0.34**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5. DASS	0.19	-0.12	0.17	-0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6. Depression	0.17	-0.03	0.20	-0.04	0.88***	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7. Anxiety	0.15	-0.14	0.09	0.03	0.92***	0.68***	-	-	-	-	-	-	-	-	-	-	-	-	-
8. Stress	0.19	-0.17	0.17	-0.01	0.94***	0.72***	0.87***	-	-	-	-	-	-	-	-	-	-	-	-
9. Self-Esteem	-0.10	0.23*	-0.20	0.04	-0.53***	-0.53***	-0.47***	-0.47***	-	-	-	-	-	-	-	-	-	-	-
10. Masculinity	0.21	-0.20	0.25*	-0.00	0.19*	0.24**	0.14	0.14	-0.07	-	-	-	-	-	-	-	-	-	-
11.EDD	0.23*	-0.23*	0.28*	-0.10	0.15	0.21*	0.09	0.12	0.14	0.63***	-	-	-	-	-	-	-	-	-
12. Toughness	0.13	-0.20	0.13	-0.12	0.04	0.11	-0.02	0.01	0.17*	0.69***	0.63***	-	-	-	-	-	-	-	-
13. AOF	0.21	-0.24*	0.26*	-0.7	0.16	0.22*	0.10	0.11	0.06	0.93***	0.83***	0.85***	-	-	-	-	-	-	-
14. Team Identity	0.02	-0.04	0.08	-0.08	-0.06	-0.06	-0.09	-0.00	-0.07	0.19	0.07	-0.07	0.10	-	-	-	-	-	-
15. Sport Identity	-0.12	0.16	0.33**	-0.30*	-0.01	-0.01	-0.02	0.02	0.07	-0.04	-0.02	-0.02	-0.04	0.07***	-	-	-	-	-
16. Sport Orientation	-0.14	-0.13	-0.26*	0.37**	0.13	0.15	0.13	0.08	-0.13	-0.04	-0.09	-0.06	-0.07	-0.58***	-0.45***	-	-	-	-
17.Competiveness	-0.16	-0.17	-0.24*	0.38***	0.17*	0.17*	0.17	0.13	-0.17*	-0.04	-0.11	-0.06	-0.07	-0.57***	-0.49***	0.96***	-	-	-
18. Win Orientation	-0.14	-0.01	-0.30**	0.35**	0.04	0.09	0.05	-0.01	-0.02	-0.09	-0.09	-0.11	-0.11	-0.47***	-0.35**	0.85***	0.74***	-	-
19. Goal Orientation	-0.06	-0.06	-0.21	0.26*	0.09	0.10	0.11	0.04	0.10	0.01	-0.03	-0.01	-0.01	-0.52***	-0.38***	0.89***	0.81***	0.65***	-

Note. ^a 1 = < 1 year, 2 = 1-3 years, 3 = 3-5 years, 4 = 5-7 years, 5 = 7-9 years, 6 = 10+ years. ^b 1 = 0-2 hours, 2 = 2-4 hours, 3 = 4-6 hours, 4 = 6-8 hours, 5 = 8-10 hours, 6 = 10+ hours. ^c 1 = Played competitively and 2 = Played socially. *** p < .001, ** p < .01, * p < .05

RSE scores also showed a significant positive association with the toughness subscale scores (see table 6), however this was weak. The number of years played showed various significant associations. A significant positive relationship was observed between number of years played and RSE scores. Furthermore, significant negative relationships were observed between years played and EDD and AOF subscale scores (see table 6).

The hours played per week also demonstrated several significant relationships. Significant positive relationships were found for the hours played per week and MRNI-A-r total, EDD, and AOF scores. A significant positive association was observed between hours played per week and SIQS-S scores. Significant negative relationships were demonstrated between hours played per week and SOQ total, competitiveness, and win orientation scores (see table 6). Significant negative relationships were observed between SIQS-T scores, and SOQ total, competitiveness, win orientation and goal orientation scores. Moreover, significant negative associations were found between SIQS-S scores, and SOQ total, competitiveness, win orientation and goal orientation scores.

Group Analysis

Wellbeing

Table 7.

Descriptive Statistics for DASS Subscale Scores

	No Sport Participation		Indiviudal Sport		Team Sport (Not Rugby)		Rugby	
N	55		29		40		10	
Variable	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Depression	10.77	9.53	9.52	7.87	7.48	8.44	10.63	10.53
Anxiety	8.77	7.72	8.26	7.07	5.79	7.01	7.38	6.93
Stress	11.70	8.93	11.67	8.56	8.60	7.84	8.88	8.10

Note. For DASS scoring, the sum of each of the 14 items in the subscale are obtained. Mean scores were then obtained for each of the four sporting groups.

The mean scores of each of the DASS subscales are presented in Table 6. Mean scores are then related to a certain category for DASS scoring. Mean scores for individual and team sports (not rugby) fall into the ‘normal’ category, while no sport participation and rugby mean scores fall into the ‘mild’ category. Furthermore, those in the no sport participation group had the highest depression scores, followed by rugby, individual sports, then team sport (not rugby) (see table 7). Team Sport (not rugby) and rugby mean scores fell into the ‘normal’ category, while no sport participation and individual sports fell into the ‘mild’ category.

Those who did not play sport had the highest scores on the anxiety subscale, followed by individual sports, rugby then team sports (see table 7). For stress, all groups scored in the ‘normal’ category. Those not playing sports reported highest levels of stress, followed by individual sports, rugby, then team sport (not rugby) (see table 7).

Table 8.

Descriptive Statistics for Wellbeing Variables

	No Sport Participation		Individual Sport		Team Sport (not rugby)		Rugby	
N	55		29		40		10	
Variable	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
DASS	0.74	0.56	0.70	0.49	0.52	0.57	0.64	0.62
Depression	0.77	0.69	0.68	0.57	0.53	0.64	0.76	0.80
Anxiety	0.63	0.53	0.59	0.52	0.41	0.57	0.53	0.60
Stress	0.84	0.62	0.83	0.59	0.61	0.59	0.63	0.61
Self-Esteem	2.70	0.53	2.88	0.32	3.01	0.49	3.10	0.76

Note. DASS = Depression, Anxiety, Stress Scale; Depression = DASS depression subscale, Anxiety = DASS anxiety subscale, Stress = DASS stress subscale, Self-esteem = Rosenberg Self-Esteem Scale.

Differences in mean total DASS scores across sports participation groups were examined using a one-way ANOVA. A non-significant ANOVA effect was found, $F(3,130) = 0.83, p = .479$. There were no differences in mean scores between those who do not play sport, play an individual sport, play a team sport (not rugby), and play rugby (see table 8).

A follow-up one-way multivariate analysis of variance (MANOVA) was conducted to investigate if there were any mean differences between sports participation groups (no participation, individual sport, team sport, rugby) and DASS subscale measure scores, depression, anxiety, and stress. A statistically non-significant MANOVA effect was obtained, Pillai's Trace = 0.04, $F(3, 133) = 0.62, p = .785$ (see table 8). No significant differences were found between sports participation groups and DASS Depression, DASS Anxiety or DASS Stress subscale mean scores $F(3,133) = 0.56, p = .642, F(3,133) = 0.68, p = .566, F(3,133) = 1.14, p = .334$ respectively (see table 8). These results indicate that depression, anxiety, or stress are not influenced if you do not play sports, play an individual sport, play a team sport (not rugby), or play rugby.

A secondary one-way ANOVA was conducted to test the hypothesis that there would be one or mean differences between sports participation (do not play sports, play an individual sport, play a team sport (not rugby), play rugby) and self-esteem scores. A statistically significant effect was observed between sports participation groups and self-esteem scores, $F(3,129) = 3.78, p = .012$ (see table 8). A follow-up Post-Hoc Tukey test was conducted to examine which groups showed significant differences in self-esteem. The only significant mean difference in self-esteem was between those who do not play sports and those who play individual sports. No significant differences were observed in all other groups.

*Masculinity***Table 9.***Descriptive Statistics for Masculinity Variables*

	No Sport Participation		Individual Sport		Team Sport (not rugby)		Rugby	
N	55		29		40		10	
Variable	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Masculinity	2.25	1.12	2.68	0.98	2.26	0.95	2.53	0.54
EDD	1.87	1.08	2.31	1.05	1.82	0.85	1.99	0.77
Toughness	3.04	1.41	2.46	1.12	3.03	1.32	3.68	0.89
AOF	2.31	1.37	2.75	1.39	2.53	1.38	2.63	1.03

Note. Masculinity = Masculine Roles Norms Inventory – Adolescent – revised. EDD = Emotionally Detached Dominance. AOF = Avoidance of Femininity.

A one-way ANOVA was conducted to investigate if there were any mean differences in MRNI-A-r total scores ($F(3,130) = 1.43, p = .238$), indicating there are no significant differences in conforming to traditional masculine norms across sports participation groups (see table 9).

A follow up one-way MANOVA was conducted to test if there were any mean differences across sports participation groups on masculinity subscale measures. A non-significant MANOVA effect was observed, Pillai's Trace = .07, $F(3, 130) = 1.04, p = .406$. No significant differences were found between sports participation groups in any of the three MRNI-A-r subscales; emotionally detached dominance $F(3, 130) = 1.60, p = .193$, toughness $F(3,130) = 1.34, p = .264$, and avoidance of femininity $F(3,130) = 1.38, p = .525$ (see table 9).

*Sports Identity***Table 10.***Descriptive Statistics for Sports Identity Variables*

	No Sport Participation		Individual Sport		Team Sport (not rugby)		Rugby	
N	55		29		40		10	
Variable	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Sport Identity	-	-	5.13	0.96	5.26	0.80	5.33	1.04
Team Identity	-	-	-	-	5.40	0.71	5.32	1.03

Note. Sport Identity = Social Identity Questionnaire for Sports – Sport. Team Identity = Social Identity Questionnaire for Sports – Team.

A one-way ANOVA was undertaken to test the possible mean differences in SIQS-S scores across three groups: individual sport, team sport (not rugby) and rugby. A non-significant ANOVA effect was found $F(2, 73) = 0.26, p = .771$ (see table 10). An independent samples t-test was conducted to investigate the mean differences in SIQS-T scores across the team sport (not rugby) and rugby group. A non-significant effect was observed $t(48) = 0.27, p = .786$ (see table 10).

Sports Orientation

A one-way ANOVA indicated one or more differences in SOQ scores across sports participation groups ($F(3,130) = 4.22, p = .007$). Follow up Post-Hoc Tukey tests showed that SOQ scores differed significantly for not playing sport ($M = 2.98, SD = 0.65$) and playing an individual sport ($M = 2.16, SD = 0.59$) $p = .010$. However, no significant differences were observed between SOQ scores across other groups of sports participation.

Table 11.*Descriptives Statistics for Sports Orientation Variables*

	No Sport Participation		Individual Sport		Team Sport (not rugby)		Rugby	
N	55		29		40		10	
Variable	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Sport Orientation	2.68	0.65	2.16	0.59	2.35	0.78	2.19	0.95
Competitiveness	2.77	0.73	2.20	0.62	2.31	0.88	2.15	0.93
Win Orientation	2.71	0.83	2.27	0.77	2.55	0.85	2.25	0.87
Goal Orientation	2.49	0.74	2.04	0.68	2.29	0.82	2.18	1.11

Note. Sport Orientation = Sports Orientation Questionnaire

A one-way MANOVA was conducted to test the hypothesis that there would be one or mean differences in SOQ subscale scores across sports participation groups. A significant MANOVA effect was observed Pillai's Trace = 0.15, $F(3, 130) = 2.24$, $p = .019$. Follow up univariate one-way ANOVAs were conducted and indicated that win orientation and goal orientation did not differ significantly across sports participation groups $F(3,130) = 2.26$, $p = .085$, $F(3,130) = 2.27$, $p = .083$, respectively. However, competitiveness mean scores differed significantly across sports participation groups $F(3,130) = 5.10$, $p = .002$. Follow up Tukey tests indicated that competitiveness mean scores differed significantly between those who did not play sport ($M = 2.77$, $SD = 0.73$) and those who play and individual sport ($M = 2.20$, $SD = 0.62$), $p = .009$. Furthermore, mean scores in competitiveness differed significantly in those who did not play sports and those who play a team sport (not rugby) ($M = 2.30$, $SD = 0.88$) $p = .024$. These results suggest that not playing a sport is linked to *lower* competitiveness compared to those who play individual and team sports (not rugby).

Discussion

Study Two aimed to investigate the effect of sports participation, particularly rugby on mental health and wellbeing in adolescent males in New Zealand. There was a specific focus on the influence of conformity to masculine norms, self-esteem, strength of sports identity and sporting orientation norms. Four groups were assessed: no sports participation, individual sports, team sports (not rugby), and rugby. Mental health and wellbeing were operationalised as levels of depression, anxiety, stress, and self-esteem.

The relationship between study two variables were examined, indicating a small number of significant relationships. As participants conformity to adolescent masculine roles *increased* their levels of depression also *increased*. Specific norms that were associated with the *increase* in levels of depression were EDD and AOF, suggesting that conformity to masculine norms may be a risk factor to levels of depression.

Several associations were observed in relation to the amount of hours per week spent playing/training. As the number of hours played per week *increased*, the levels of conformity to adolescent masculine norms also *increased*, specifically *increased* levels EDD and AOF. This gives insight into the possible role that the sporting environment has on levels of conformity to masculine roles. I could speculate that *more* hours spent playing or training means *increased* exposure to the ‘toxic masculinity’ often described in the sporting environment, therefore leading to increased conformity to masculine norms. Sports orientation levels were also influenced by the hours played per week, with *increases* in competitiveness and win orientation as the number of hours per week played/trained *increased*. Demonstrating that the more hours played per week, the more likely the individual is to be win orientate, as well as have higher levels of competitiveness compared to those who spend fewer hours per week on their sport.

I hypothesised that sports participation would have positive effects on wellbeing, however this was not fully supported. A significant ANOVA effected indicated that sports participation influenced levels of self-esteem. Follow-up analysis revealed differences in self-esteem between those who did not play sport, and those who play individual sports. Indicating that playing and individual sport is related to higher levels of self-esteem compared to those who do not play sports. However, our results also suggest that belonging to a team, including rugby is not related to differences in levels of self-esteem against those who do not play, and those who play individual sports. When investigating influences on depression, anxiety and stress, no differences were found across sporting groups. Contrary to previous literature these results suggest that your sports participation is not related to your levels of depression, anxiety, or stress.

I also wanted to explore the possible role that rugby 'culture' in New Zealand would have on wellbeing. I speculated that rugby players may show poorer mental health outcomes compared to those who do not play sports, and those who play other sports. Contrary to my hypothesis, belonging to a rugby team did not influence levels of depression, anxiety or stress compared to other groups. The anecdotal evidence suggests that rugby culture may have a negative effect on wellbeing, however, my results indicate this may not be the case. The results demonstrate there is neither a positive or negative influence of rugby on wellbeing in this sample.

Furthermore, I investigated the relationship between sports participation and its effect on, masculinity, social identity, and sporting norms. No differences were found in conformity to adolescent masculine norms across sports participation groups, indicating your sporting involvement, may not relate to your level of conformity to masculine norms in adolescence. Contrary to previous speculation, those in the rugby group did not show higher levels of conformity, suggesting that belonging to a rugby team may not influence how much you

conform to adolescent masculine norms. Furthermore, specific aspects of conformity to masculine roles were investigated. Emotionally detached dominance, toughness, and avoidance of femininity did not differ across sports participation groups. These results suggest that sports participation is not associated with differences in levels of conformity to adolescent masculine norms. More specifically, contrary to previous speculation, belonging to a rugby team did not influence higher levels of conformity to masculine norms.

How strongly individuals believed their sport or team was related to their identity was measured, and demonstrated no differences across the three sporting groups; individual sport, team sport (not rugby), and rugby. Suggesting that the form of sport you play is not associated with differences in how strongly you feel this sport ties into your identity. Results indicated that there were no differences in team identification between individuals who play team sports and those who play rugby, demonstrating that rugby players are *not* more strongly tied to their team as a part of their identity compared to those in other team sports.

I investigated differences in sports orientation including competitiveness, win orientation and goal orientation. Differences were found in overall SOQ scores, between those who do not play sports, and those who play individuals sports. However, no differences were observed for team sports and rugby. These results suggest that playing an individual sport is associated to *higher* levels of conformity to sporting norms, compared to those who do not play sports, but not for team sports, or rugby. When examining differences in sports orientation subscales, no differences were found in sport participation groups for either win orientation or goal orientation scores. Indicating that the type of sport you play does *not* have an influence on your level of goal or win orientation. Differences were found for competitiveness, with those who do not play sport, and those who play an individual or team sport (not rugby), suggesting that playing an individual or team sport (not rugby) leads to

higher levels of competitiveness compared to those who do not play a sport, but not for rugby.

Limitations and Future Directions

A major limitation of Study Two is the nature (and size) of the sample. As stated earlier, I initially planned to use secondary school students from schools in wider Wellington region. However due to the Covid-19 pandemic, I was not able to collect data in any of the secondary schools. The survey had to be administered online, and this was not possible with the secondary schools students, this led to changing to the first-year psychology programme sample (IPRP). Due to only using the first-year psychology sample, I was unable to get as large of a sample as I intended. There were only 134 students in total, and only 10 rugby players. Though this represented approximately half of the male students in the course it is likely that I lacked the statistical power to identify hypothesised differences. Most problematically, in this already small sample, was the small subset of rugby players.

Furthermore, due to only being first year students, the age range was significantly limited to 18 to 19-year-olds. I was only measuring those in the late adolescent stages, meaning I have not captured the whole adolescent population within my sample. Considering the study is based around all adolescent males in New Zealand, it would be advantageous to have a sample that more accurately represented the adolescent period. In future I would ensure I had an age range between 10 and 20 years old, as it has been suggested this is a more representative age group (Sawyer et al., 2018). By having a more representative age range, I could not only generalise to the whole adolescent group, but could also see if there are differences across the different stages of adolescence. Furthermore, expanding the theories and knowledge around this relationship between sports participation and wellbeing.

Another limitation of this study is that I did not differentiate between rugby union and rugby league in the survey questions. Therefore, I may have both rugby league and union players in the 'rugby' group. These individuals may be exposed to different ideals, beliefs, and environments, and therefore there may have been variations among the rugby group already. This may cause difficulties in comparing to other sporting groups, if there is already increased variability within the rugby sample group. Therefore, it would be advantageous to distinguish between rugby union and rugby league players in future studies. While both are still facets of the rugby game, rugby union has a much more dominant presence in New Zealand, and much of the aforementioned evidence/research is in relation to rugby union. By differentiating these groups, a clearer picture of the influence rugby union culture has on mental health may be observed.

Summary and Conclusions

Study Two was conducted as an extension to Study One. The aim of this Study was to go into further detail about how sports participation may influence mental health and wellbeing. A specific focus was taken on adolescent males in New Zealand due to the lack of current research in this area. Furthermore, I wanted to investigate the possible effect participating in rugby may have on mental health and wellbeing compared to other sports, due to the anecdotal evidence surrounding a possible detrimental culture. Wellbeing and mental health were assessed by measuring levels of depression, anxiety, and stress. Self-esteem, conformity to adolescent masculine norms, identity to team and sport, and sports orientation were also investigated. No differences were found in wellbeing across the four sporting groups, indicating that sports participation does not influence the level of depression, anxiety, or stress on individuals of this sample. Self-esteem was only influenced by those in individual sports compared to those who do not play sports, and not for other groups. I did not observe *higher* levels of conformity to adolescent masculine norms in rugby players as I

had speculated. It was observed that those who played individual or team sports (not rugby) demonstrated *higher* levels of competitiveness compared to those who did not play sports, but not differences in win or goal orientation were seen. This may, of course, mean that sports participation, and rugby in particular, may not have a negative effect as I initially hypothesised.

General Discussion

A multitude of theories have been developed in relation to physical activity and its effect on mental health and wellbeing. More specifically, there has been copious amounts of research on how sports participation influences the mental health and wellbeing of adolescents. It has been suggested that sports provide a positive environment for psychological enrichment, development, and wellbeing (Slater & Tiggemann, 2011). Furthermore, theories have been generated that argue sports participation may be a crucial context for the development of self-esteem, self-knowledge, and identity for some adolescents (Bowker, 2006, Hansen et al. 2003). Whilst there have been plenty of studies conducted surrounding sports participation's effect on adolescents, many of these were completed overseas. Therefore, in this thesis I investigated the effect of sports participation on wellbeing in a New Zealand adolescent sample.

Study One assessed the mental health (measured using the DASS depression and anxiety subscales) and self-esteem (measured using the RSE scale) of New Zealand adolescents. Gender differences in depression, anxiety and self-esteem were investigated, as well as the possible interaction between gender and sports participation on wellbeing. Given that Study One demonstrated sports participation may influence levels of wellbeing and self-esteem in adolescents I then conducted Study Two in which more specific groups of sports participation were investigated; no sport, individual sport, team sport (not rugby), and rugby. Study Two focussed on male adolescents in New Zealand and looked into the possible effect

of rugby culture in New Zealand, specifically if being a rugby player had detrimental effects on wellbeing (measured using the DASS-42 and RSE scale). Furthermore, conformity to masculine roles, social identity and sporting orientation were investigated (measured using the MRNI-A-r, SIQS-S, SIQS-T, and SOQ, respectively). Results from Study Two were not in line with current sports participation literature, as positive influences on wellbeing were not observed. Moreover, Study Two demonstrated results contrary to my hypothesis, as participating in rugby did not have a negative influence on wellbeing, as initially speculated.

Theoretical Implications

Mental Health and Wellbeing

Extensive research has been conducted to investigate the effects of sports participation on mental health and wellbeing. Study One results were partially in line with wellbeing and sports research (Donaldson & Ronan, 2006; Merglen et al., 2014). Belonging to a sports team was associated with lower levels of depression, as expected. However, inconsistent with past research, I found no differences in anxiety between those who did and did not play sports. Furthermore, Study Two results were also counter to previous research, as no differences were found in depression, anxiety or stress across the four sporting groups.

There are multiple possibilities as to why sporting only had effects on levels of depression in Study One. Firstly, it could be suggested that sports participation has a *stronger* influence on wellbeing related issues such as depression, compared to anxiety or stress. Adolescence is a life period filled with major changes, and many adolescents can have experiences that are challenging, leading to anxiety and stress. It may be the case that sports participation is not a strong enough protective factor for anxiety and stress for adolescents. Secondly, it could be speculated that the sporting environment itself is the root or cause of the anxiety and stress. Especially in the elite secondary school sports team, there is a lot of

pressure on athletes to perform. Therefore, the positive benefits of sports participation may be outweighed by the pressure and stress of secondary school sporting. Finally, it may also be the case that the positive benefits of sports participation may be limited to earlier adolescence. Similar to previous speculation, sports participation may not be a strong enough protective factor to those in the 'late adolescent' period. Many late adolescents are going through extremely stressful life changes, such as high school final exams, university entrance, moving out of home, starting a career etc. and participating in sports while beneficial may not be enough to have strong positive influences on wellbeing.

Several mental health campaigns in previous years have been scolded, rejected, or simply ignored by individuals due to their lack of engagement or inability to relate to individuals within their targeted demographic (Rüsch et al., 2005; Sartorius, 2007; Schomerus et al., 2012) – It is possible that mental health campaigns have had a positive impact on New Zealanders by using relatable and well-respected individuals such as Sir John Kirwan. Sir John was seen as a quintessential All Black, encompassing the 'kiwi bloke' attitude. However, by showing and discussing his own vulnerabilities it may have affected the way other men in New Zealand thought about their own vulnerabilities, and related to Sir John in a positive way, and therefore decided to seek help themselves. Whilst Sir John was a former All Blacks player, his campaign is not specific to rugby players. The campaign aims to have a more universal outreach, in the hopes to have a more holistic positive effect on New Zealanders in relation to mental health. I could speculate that this is being achieved, and that New Zealanders are relating and resonating with campaigns such as this one. New Zealand has seen a steady increase in the amount of individuals engaging with mental health services (Ministry of Health, 2021). This does not necessarily reflect an increase in mental health issues, in fact it may be related to more individuals seeking help. Therefore, more individuals may be seeking help for mental health and wellbeing related issues.

There may be disparities in support given to those in secondary school and club sports teams. Athletes who are at the top of their divisions are often put under immense levels of stress and pressure to perform. Those in secondary school sports teams are often put in positions in which they are expected to treat their sport as if they were in a professional team. Furthermore, some secondary schools have historically significant rivalries with other schools, such as the Kings College vs Auckland Boys Grammar first 15 rugby game. The stress, anxiety and pressure these athletes experience may be detrimental to their wellbeing. Those in club sports are also exposed to this type of stress and pressure, but it could be speculated that secondary school pastoral care teams are more equipped to handle this. Many secondary schools have access to support workers or counsellors in which the students can utilise. However, only very high up, or professional athletes have access to counsellors, psychologists or support workers that are accessible through their sport. Therefore, secondary school athletes may be getting more satisfactory support for anxiety and stress. This may also be reflected in the *lower* levels of depression observed in sports players in secondary school sports, but no differences in those in the university aged sample. Those at secondary school still have access to often free support services and so may be receiving better mental health and wellbeing help compared to those in club sports or university teams.

Masculinity

The effect of rugby on the mental health of young males was speculative and based on anecdotal evidence. The results gathered from Study Two were not in line with the anecdotal evidence that was provided earlier. I speculated that those who played rugby were being exposed hyper masculine ideals and behaviours, which would influence their conformity to masculine norms, and in turn have a negative influence on their mental health. However, no differences were observed across any of the four sporting groups.

Research has been conducted to investigate and understand masculine discourses and influences among the rugby game in New Zealand (Nicholls et al., 2006; Pringle, 2004; Pringle & Markula, 2005; Watson, 2007). These studies have insinuated that there is a strong masculine presence within the rugby environment and this may be detrimental to its players. However, these theories were produced over a decade ago. Since then, we have seen the movement towards mental health promotion and support, such as through campaigns mentioned earlier. It is possible that the mental health and wellbeing campaigns are working, not just by promoting help seeking behaviours, but also by changing the discourses surrounding 'toxic' masculinity among the sporting environment, and in New Zealand in general. It could be suggested that it is possible that the 'real man' or 'kiwi bloke' attitude may be becoming redundant. It may be that individuals are becoming less likely to conform to traditionally masculine norms, as barriers are being broken down, and there is less promotion of toxic masculinity. Moreover, masculine norms may be changing. The discourses surrounding what it means to be a man, and its relation to mental health may be changing, and therefore leading to more positive responses to help seeking behaviours, as well as less men conforming to the traditional gender roles that were once dominant in the sporting environment.

It has speculated the amount of exposure to the hegemonic masculinity in rugby may have an influence on mental health related challenges (Anderson & McGuire, 2010). As age increases rugby players are less likely to seek help for mental health or wellbeing struggles. There are two suggestions for these age related differences. Firstly, that those who are younger have not had as much exposure to the traditional masculine norms promoted by rugby. Among rugby players, on average they had only been a part of the sport for approximately 4 years and due to my sample being 18–20-year-olds rugby players may not have had the extended exposure to hegemonic masculinity mentioned above, and therefore

may not have the hyper masculine characteristics often associated with rugby. Secondly, as mentioned earlier, younger generations may be experiencing a change in discourses surrounding what it means to be a man, as well as more promoting more positive behaviours towards mental health and wellbeing. Due to societal changes and promotion of mental health within rugby culture, younger individuals are now being exposed to more of the positive effects sporting participation has on mental health, may be seeking out help already, or have sought out help in the past.

Self-Esteem

Theories surrounding sports and self-esteem have mostly suggested a positive influence (Bowker, 2006; Hansen et al., 2003; Slutzky & Simpkins, 2009). Results from Study One and Two are partially in line with previous literature. In Study One, males reported higher levels of self-esteem compared to females. However, not in line with Bowker (2006), Hansen et al. (2003) and Slutzky & Simpkins (2009), sports belonging did not predict higher levels of self-esteem. No differences were found in self-esteem levels between those who did and did not play sport. Furthermore, not in line with current theories, self-esteem was not found to be a mediator of the relationship between sports participation and either anxiety or depression. Study Two results were partially in line with current literature, as those who played individual sports reported higher levels of self-esteem compared to those who do not play sports. However, this was not the case for the team sports and rugby category. This may be an insight into a possible theoretical gap.

It is possible that the differences between playing an individual and team sport may be more important than previously suggested. Pluhar et al. (2019) suggested that there are marked differences in the skills, attitudes and behaviours that are promoted between individual and team sports. These differences may be an important influence on the self-

esteem of these athletes. All adolescents will have differing experiences that have effects and influences on self-esteem. It is possible that the skills and attitudes learnt in an individual sport may either harbour more positive effects on self-esteem, or, may act as a protective factor against negative self-esteem. It is also possible that the experiences that lead to positive influences on self-esteem in team sporting are not outweighing the experiences that negatively influence self-esteem.

The successes and losses of any athlete or team will be intertwined with self-esteem. However, this may present differently between those in individual and team sports. When there is a loss or win for a team, the members of that team experience that loss or win together, whereas, an individual athlete will have that success or loss on their own. It could be speculated that when an individual is successful, they are able to associate that win or success all to their own skill and abilities. Whereas, in a team sport, the whole team is successful, and a certain individual may not feel as though they were a part of that success. Therefore, I could suggest that the success of an individual win has a *stronger* influence on self-esteem, and therefore leads to more extreme boosts of self-esteem compared to those in team sports.

The breakdown of hegemonic masculine ideals and values within the sporting environment and culture may also be leading to an increase in self-esteem for young males. By dismantling the ideals and values previously promoted by the 'kiwi bloke', young males may be feeling more comfortable with their own bodies, personalities, and identities, as they may no longer feel such an intense pressure to live up to these intensely masculine standards.

Social Identity and Sporting Orientation

Study Two participants were first year university students, and so it can be assumed that many of these students would have recently left high school. This transition could have

influences on identity. Some individuals may want to ‘reinvent’ themselves and expand their identities. By engaging in new activities, classrooms, hobbies, and with new peers, some individuals may find their identity becomes more varied, and less focused on just one facet, such as being an athlete. Furthermore, when moving from high school to university, some individuals choose to no longer continue their sports participation. It could be speculated that those who play in higher division, or those who are heavily invested in their sports are the ones who continue during university. While there were no differences observed between sports groups and their strength of sports identity, the level of identity was moderately high for all groups and could be explained by this concept that those who are strongly tied with their sports are the ones who continue at university. Therefore, it is possible that those who are sporting at university are a small facet of athletes that harbour a similar strength of sport related identity. Those who participate in sports at secondary school do so in a varying level of difficulty, and therefore sports participations effect on identity may be clearer in a more varied sample.

Those that played individual sports and team sports (not rugby) showed higher levels of competitiveness compared to those who do not play sports. Competition can be seen in a varying amount of activities, of which some have no connection to sports. However, it seems that the competitiveness that is driven in the sporting environment is much *stronger* than those who are not exposed to sports. It could be speculated that winning is so important in the sporting environment, that it harbours more extreme levels of competitiveness. Results also demonstrated that rugby players had the highest levels of competitiveness, however, no significant differences were found, which is likely due to a lack of statistical power. Therefore, it could be said that rugby players were trending as the most competitive out of the sporting groups.

It is also possible that because the SOQ scale is designed specifically for sport related competitiveness, it was not measuring other ways in which individuals may express competitive behaviours. Whilst it makes sense to use sports related scales when measuring sporting orientations and norms, it is important to also compare these to non-sporting groups. By comparing to non-sporting groups a more holistic and possibly clearer picture of sporting orientations and norms may become apparent. Therefore, the development of new scales may be necessary in order to widen the knowledge surrounding sports orientation/norms and its effect on mental health and wellbeing. Moreover, this expansion may not only help to fill gaps in current theories, but may lead to the appearance of novel theories.

Applications

Many mental health services have reported struggling to implement physical activity or sports participation as a long term wellbeing intervention. Thirty percent of individuals have reported drop off before six months, and after this period, drop off can reach as high as 50% (Stathopoulou, Powers, Otto, Berry, & Smits, 2006). It seems that this form of intervention is only short term, however, considering the array of benefits constantly being promoted, it would seem advantageous to continue physical activity. The results from both studies were mixed and were not always in line with current theories surrounding sports participations positive benefits. These inconclusive findings may give insight into how sports participation may not be a viable intervention for mental health and wellbeing for all individuals. In clinical interventions, sports participation or physical activity may not be the best course of actions for everyone, and that may be why such large percentages of drop off can sometimes occur. Therefore, other avenues of interventions may need to be implemented either alongside, or in place of physical activity and sports participation in order to boost wellbeing.

While sporting institutions are struggling with the perceptions of mental health there are avenues that can be pursued in the hopes to engage more sports people in positive coping behaviours, and the use of public figures is a well-used strategy for this (Bauman, 2016; Gulliver et al., 2012). Public figures and role models can set exemplary behaviour for the individuals who are receiving these messages. In New Zealand, many boys and men see the 'All Blacks' players as role models. Whilst we have seen 'All Blacks' of the past come forward about the mental health struggles they have endured, there are few *current* 'All Blacks' who have come forward or spoken of their own struggles. It is hard to imagine that none of the current squad members struggle with mental health or wellbeing. The strong identity that comes along with being an All Black may be a hindrance on why current players are less likely to come forward. There may be a sense of not wanting to show weakness or vulnerability, as that could be translated into how they play on the field. However, it may be needed that more current and relevant public figures are heading these campaigns, as these are these individuals are the current role models in society. By using more current role models, messages about mental health may be better received and resonate better with society.

Strengths

These studies are relatively novel in the New Zealand context. While there has been a multitude of research completed surrounding sports participation and mental health, very few studies have been focused on New Zealand, and more specifically in the adolescent population. As mentioned earlier, New Zealand has one of the highest youth suicide rates in the OECD. Therefore, it is important for us to research and understand the possible influences that our youth are experiencing which is leading to this high statistic. Furthermore, I mentioned that male adolescents are often under researched and overrepresented. By researching male adolescent specific wellbeing and mental health in Study Two I am

contributing to the expansion of theory and knowledge in this area. In relation to sports participation and its effect on wellbeing, few studies have looked at how a particular sports discipline – such as rugby – may have an influence on the mental health and wellbeing of those involved in that sport, compared to others. Rugby is such an influential sport in New Zealand, and few studies have been conducted specifically about its role on the mental health and wellbeing of young New Zealanders.

Limitations

While Study One collected demographic information such as ethnicity, this was not utilised, and Study Two did not collect demographic information other than age and student type. Ethnicity may be a crucial factor when it comes to wellbeing. In 2018, 70.2% of the population identified with a European ethnicity, followed by 16.5% Māori, 15.1% Asian, 8.1% Pasifika, and 1.5% Middle Eastern/Latin American/African, and 1.2% other ethnicity. Therefore, it could be speculated that almost 30% of New Zealand's population do not practice Westernised wellbeing models. Some Māori peoples identify with the model; Te Whare Tapa Whā, a more holistic view of health in which there are four foundations; physical, social, emotional, and spiritual. Pasifika peoples may identify with the Fonofale model, which similarly promotes the importance of family, culture, and spirituality (Pulotu-Endemann, 2001). Furthermore, in some Asian cultures Confucianism and Taoism play a vital role in the ideals and beliefs surrounding health and medicine (Chen & Swartzman, 2001). I may not have been able to accurately measure wellbeing for some of our participants as I used scales and measures that are often based upon Westernised ideals and beliefs. Therefore, in future it may be advantageous to take demographic information in the hopes to control for this limitation, or furthermore have questions or measures that are related to other cultures models of health and wellbeing.

A further limitation of the study was the impact of the Covid-19 pandemic. As mentioned earlier, Covid-19 influenced the sample I was able to use. Furthermore, due to the pandemic many sports events, practices and games were cancelled for the beginning of the year. This means that during the data collection of Study Two, participants may not have been involved in their sports as normal. This may have led to changes in the levels of wellbeing in our participants. Considering theories take such a strong stance on the positive effects of sports participation, the sports players being assessed may not have been reaping these benefits, and may be why we saw few differences in those who did and did not play sports. Furthermore, I speculated that the rugby environment may have a negative influence on wellbeing, but if participants were not playing or training, they were not being exposed to this environment, and this may have had a positive influence on their wellbeing. Therefore, in future studies it would be advantageous to ensure the participants are engaging in their sports at the time of the survey administration.

A limitation of the overall thesis is that the two sample groups differed in many ways. Study One sample was secondary school students aged 13 to 17 years old, whereas Study Two were university students aged 18 to 19 years old. While both samples *can* be grouped into the adolescent category, these are two vastly different life periods. The challenges and stressors that a secondary school student faces may be varied to an individual who has recently started university. These differences in life period may have influences on the wellbeing and mental health of participants that are not related to sports participation but events going on in their life stage. It would be advantageous to account for these possible differences in life stages in future studies. This could be accomplished by investigating if there are any differences in overall wellbeing between the two age groups initially, to ensure there is not already large variances due to age. Furthermore, a secondary school only participant pool could be used, as was initially planned before the Covid-19 pandemic.

I could speculate that individuals are experiencing more of the positive effects of sports participation, therefore increasing mental health and wellbeing. However, this does not explain why New Zealand youth – especially males – are still such a high-risk group for poor mental health and suicide. It is possible that the area of sports participation and its effect on mental health in New Zealand is under theorised. Although there were possible methodological issues constricting my study, it is also possible that the theory did not fit, and that is why Study One and Two showed mixed results. Therefore, it is imperative that additional and novel research is conducted in this field.

Future Research

As mentioned earlier different cultures adopt differing views on wellbeing, such as how Māori people identify with Te Whare Tapa Whā (Rochford, 2004). In 2004, 33.8% of professional rugby players under the New Zealand Rugby Union, and 20.3% of all registered rugby players in New Zealand were of Māori decent (Te Puni Kōkiri, 2006). Furthermore, in 2017, 100% of the Junior Kiwis rugby league team were of Māori or Pasifika decent (Keung, 2018). Considering at the time Māori only made up 6.7% of the population, this demonstrates a large over representation of Māori within the rugby game. At present there is a lack of tools, practices and processes that respond appropriately to the psychological needs of Māori and Pasifika athletes (Keung, 2018), which may be having detrimental effects on their mental health. Therefore, future studies could research into how indigenous models of health, such as Te Whare Tapa Whā influence the mental health of sports and rugby players in New Zealand. Due to the experiences and exposure to mostly Westernised environments and wellbeing models, those who engage with indigenous models of health may demonstrate both positive and negative influences on their mental health and wellbeing. As their values and beliefs that come from alternative models of health may serve as a protective factor in these environments. However, athletes who follow indigenous models may also experience

negative influences due to the lack of recognition to their own beliefs and westernised cultures being forced upon them.

Future studies could engage in longitudinal research into sports participation and its effect on mental health and wellbeing. Much of the literature suggests how adolescence is such an important developmental stage. Therefore, it would be interesting to track how longer exposure to certain sporting environments and experiences may affect mental health. As suggested earlier, those who are in sporting environments that foster negative attitudes for longer, may have poorer mental health outcomes (Anderson & McGuire, 2010). By using longitudinal studies, overall changes in conformity to masculine norms, strength of identity, and overall wellbeing could be measured. This may help to give a fuller picture of the effect of sports participation on mental health and wellbeing.

While this study focused on the mental health and wellbeing of males, it would be interesting to see if the same social structures and effects would occur in the women's sporting environment. Future studies could research into how women's mental health and wellbeing are affected when in male dominated sports. Moreover, researchers could investigate the ideals, values and beliefs of female athletes in male dominated sports, and how these compare to their male counterparts, as well as other female athletes. Specifically, among rugby players, there a large disparity between the female and male teams. Females may feel like they must work harder than average just to get similar recognition to males and their success may not be as highly praised or recognised. This feeling of needing to work harder, or not being recognised may have influences on the mental health and wellbeing of these female athletes. Furthermore, research could be conducted to see if women in male dominated sports are more likely to adopt more 'masculine' like characteristics, as those are deemed to be what make a successful athlete in New Zealand.

Sports participation could also be broadened into the idea of fan participation. Many fans intertwine their identity with a team which they support. As mentioned earlier, many fans partake in the phenomena known as BIRGing and CORFing, in which the success of the team they support is often a source of their own identity and self-esteem. The cult like following of rugby in New Zealand and its interconnection with our national identity could also be having detrimental effects on wellbeing of fans. Future studies could research into if being a fan, or the level of identification with rugby for New Zealanders influences mental health and wellbeing. Studies such as this could give insight into if the rugby culture in New Zealand and the ideals and beliefs it presents are just as strongly cemented into its fans, and how that may be influencing their psyche and wellbeing.

Physical and mental health within sports cannot be seen as mutually exclusive as they are often intertwined. Future studies could investigate the impact of injury on the mental health of athletes, as well as the reciprocal relationship that better mental health may be a protective factor within injury recovery. Physical challenges in sports such as intense training and injury can lead to sometimes severe psychological consequences, including cognitive, emotional, and behavioural deficits (Schinke et al., 2018). Physical stress/injuries may also lead to a hindrance on an athlete's performance, training, career progression, and interpersonal functioning, which in turn could lead to psychological consequences such as traumatic stress, anxiety, depression, or substance use (Schinke et al., 2018). This reinforces the idea that physical and mental health are interconnected and can impede on each other.

Summary and Conclusions

This thesis was conducted to investigate the effect of sports participation on the mental health and wellbeing of adolescent New Zealanders. Consistent with previous research, in Study One, marked gender differences were found in wellbeing (Altemus et al., 2014; Derdikman-Eiron et al., 2011; McLean et al., 2011; Nolen-Hoeksema & Girgus, 1994;

Salk et al., 2017) as well as sports participation being predictive of higher wellbeing (Bowker, 2006; Hansen et al., 2003; Merglen et al., 2014). However, Study Two demonstrated results that were not consistent with both empirical and anecdotal evidence. Therefore, it is possible that the current theory surrounding sports participation (particularly rugby) is not accurate and may be why results were not consistent or in line with previous research. However, it is also possible that due to the restrictions caused by Covid-19, methodological issues occurred which may have also influenced the results of Study Two.

This study is one of the first of its kind and while results were not as expected, it brings forward questions about possible gaps in the current theory that may need to be filled. More broadly, this thesis demonstrates that sports participation has positive influences of wellbeing in secondary school students, and that if there are negative influences on adolescents, then these are not clear and require further investigation.

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Appendices

Appendix A

Depression and Anxiety Subscale from DASS-21

(Lovibond & Lovibond, 1995)

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

Rating Scale

1 = Strongly agree

2 = Agree

3 = Disagree

4 = Strongly Agree

1. I felt that life was meaningless
2. I felt that I had nothing to look forward to
3. I couldn't seem to experience any positive feeling at all
4. I was unable to become enthusiastic about anything
5. I felt that I wasn't worth much as a person
6. I left down-hearted and blue
7. I found it difficult to work up the initiative to do things
8. I was aware of the action of my heart in the absence of physical exertion
9. I experienced breathing difficulty

10. I experienced trembling (e.g., in the hands)
11. I felt I was close to panic
12. I felt scared without any good reason
13. I was worried about situations in which I might panic and make a fool of myself
14. I was aware of dryness of my mouth

Depression Subscale consists of items 1, 2, 3, 4, 5, 6, 7

Anxiety Subscale consists of items 8, 9, 10, 11, 12, 13, 14

Appendix B

Rosenberg Self-Esteem Scale

(RSE; Rosenberg, 1965)

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

Rating Scale

1 = Strongly agree

2 = Agree

3 = Disagree

4 = Strongly Agree

1. On the whole, I am satisfied with myself
2. At times I think I am no good at all (R)
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 (R)
6. I certainly feel useless at times (R)
7. I feel that I'm a person of worth
8. I wish I could have more respect for myself (R)
9. All in all, I am inclined to think that I am a failure (R)
10. I take a positive attitude toward myself

Appendix C

Depression, Anxiety, Stress Scale

(DASS-42; Lovibond & Lovibond 1995)

Please read each statement and circle a number 0, 1, 2 or 3 which indicates how much the statement applied to you *over the past week*. There are no right or wrong answers. Do not spend too much time on any statement.

Rating Scale:

0 Did not apply to me at all

1 Applied to me to some degree, or some of the time

2 Applied to me to a considerable degree, or a good part of the time

3 Applied to me very much, or most of the time

1. I found myself getting upset by quite trivial things

2. I was aware of dryness of my mouth

3. I couldn't seem to experience any positive feeling at all

4. I experienced breathing difficulty (e.g., excessively rapid breathing, breathlessness in the absence of physical exertion)

5. I just couldn't seem to get going

6. I tended to over-react to situations

7. I had a feeling of shakiness (e.g., legs going to give way)

8. I found it difficult to relax

9. I found myself in situations that made me so anxious I was most relieved when they ended.
10. I felt that I had nothing to look forward to
11. I found myself getting upset rather easily
12. I felt that I was using a lot of nervous energy
13. I felt sad and depressed
14. I found myself getting impatient when I was delayed in any way (e.g., elevators, traffic lights, being kept waiting)
15. I had a feeling of faintness
16. I felt that I had lost interest in just about everything
17. I felt I wasn't worth much as a person
18. I felt that I was rather touchy
19. I perspired noticeably (e.g., hands sweaty) in the absence of high temperatures or physical exertion
20. I felt scared without any good reason
21. I felt that life wasn't worthwhile
22. I found it hard to wind down
23. I had difficulty in swallowing
24. I couldn't seem to get any enjoyment out of the things I did
25. I was aware of the action of my heart in the absence of physical exertion (e.g., sense of heart rate increase, heart missing a beat)
26. I felt down-hearted and blue
27. I found that I was very irritable
28. I felt I was close to panic
29. I found it hard to calm down after something upset me

30. I feared that I would be "thrown" by some trivial but unfamiliar task
31. I was unable to become enthusiastic about anything
32. I found it difficult to tolerate interruptions to what I was doing
33. I was in a state of nervous tension
34. I felt I was pretty worthless
35. I was intolerant of anything that kept me from getting on with what I was doing
36. I felt terrified
37. I could see nothing in the future to be hopeful about
38. I felt that life was meaningless
39. I found myself getting agitated
40. I was worried about situations in which I might panic and make a fool of myself
41. I experienced trembling (eg, in the hands)
42. I found it difficult to work up the initiative to do things

Depression Subscale consists of items 3, 5, 10, 13, 16, 17, 21, 24, 26, 31, 34, 37, 38, 42

Anxiety Subscale consists of items, 2, 4, 7, 9, 15, 19, 20, 23, 25, 28, 30, 36, 40, 41

Stress Subscale consists of items 1, 6, 8, 11, 12, 14, 18, 22, 27, 29, 32, 33, 35, 39

Appendix D

Male Norms Inventory Adolescent—Revised

(MRNI-A-r; Levant et al., 2012)

Please Read Each Statement and Indicate How Much this Statement Applies to You from
Strongly Agree to Strongly Disagree

Rating Scale

1 = Strongly Disagree

2 = Disagree

3 = Somewhat Disagree

4 = Neither Agree nor Disagree

5 = Somewhat Agree

6 = Agree

7 = Strongly Agree

1. Guys should never tell others if they're worried or afraid.
2. Guys shouldn't ever show their feelings.
3. When in a group of guys and girls, guys should always make the final decision.
4. Guys shouldn't cry, especially in front of others
5. If a guy is in pain, it's better for him to keep it to himself rather than to let people know

6. Chores like doing the laundry or cooking aren't for guys.
7. Guys should do whatever it takes to be cool
8. Guys shouldn't show fear
9. Guys should not tell their friends they care about them
10. A guy should win at any game he plays
11. If needed, a guy should stop being friends with someone to be more popular
12. A guy should never depend on someone else to help him
13. It is not ok for a guy to ask for help fixing a flat tire on his bike
14. It's important to have the newest video game system
15. When they're sad or upset, guys should just "suck it up" and get over it
16. In a group of guys and girls, it is up to the guys to get things organised and moving ahead.
17. It's important for a guy to be able to play it cool
18. When the going gets tough, guys get tough
19. If someone else starts it, a guy should be allowed to use violence to defend himself.
20. It's important for guys to try hard to be the best
21. A guy who can't make up his mind will not be respected
22. Boys should not throw a ball "like a girl."
23. A guy with no interest in adventure is not very cool
24. Guys shouldn't carry purses
25. Please answer this question as strongly disagree
26. It is too girlish for a guy to wear make-up
27. Guys should play with trucks rather than dolls
28. Guys should not be allowed to wear skirts
29. Sports like hockey and wrestling should be only played by boys

30. A boy should prefer football to sewing

Emotionally Detached Dominance Subscale consists of items 1-16

Toughness Subscale consists of items 17-23

Avoidance of Femininity Subscale consists of items 24-29

Appendix E

Social Identity Questionnaire for Sports

(SIQS; Bruner & Benson, 2018)

The following questions are designed to reflect how you feel about being a part of your **TEAM**. Please select on the scale from strongly agree to strongly disagree, to indicate your agreement with each of the statements.

Rating Scale

1 = Strongly Disagree

2 = Disagree

3 = Somewhat Disagree

4 = Neither Agree nor Disagree

5 = Somewhat Agree

6 = Agree

7 = Strongly Agree

1. I feel strong ties to other members of this team
2. I find it easy to form a bond with other members in this team
3. I feel a sense of being “connected” with other members in this team
4. Overall, being a member of this team has a lot to do with how I feel about myself

5. In general, being a member of this team is an important part of my self-image
6. The fact that I am a member of this team often enters my mind
7. In general, I'm glad to be a member of this team
8. I feel good about being a member of this team
9. Generally, I feel good when I think about myself as a member of this team

Appendix F

Social Identity Questionnaire for Team

The following questions are designed to reflect how you feel about being a part of your **SPORT**. Please select on the scale from strongly agree to strongly disagree, to indicate your agreement with each of the statements.

Rating Scale

1 = Strongly Disagree

2 = Disagree

3 = Somewhat Disagree

4 = Neither Agree nor Disagree

5 = Somewhat Agree

6 = Agree

7 = Strongly Agree

1. I feel strong ties to other members of this sport
2. I find it easy to form a bond with other members in this sport
3. I feel a sense of being “connected” with other members in this sport
4. Overall, being a member of this sport has a lot to do with how I feel about myself
5. In general, being a member of this sport is an important part of my self-image

6. The fact that I am a member of this sport often enters my mind
7. In general, I'm glad to be a member of this sport
8. I feel good about being a member of this sport
9. Generally, I feel good when I think about myself as a member of this sport

Appendix G

Sports Orientation Questionnaire

(SOQ; Gill & Deeter 1988)

The following statements describe reactions to sport situations. We want to know how you usually feel about sports and competition (even if you don't play a sport). Read each statement and select the bubble that indicates how much you agree or disagree with each statement on the scale.

There are no right or wrong answers; simply answer as you honestly feel. Do not spend too much time on any one statement. Remember, choose the bubble that describes how you usually feel about sports and competition.

Rating Scale

1 = Strongly Agree

2 = Slightly Agree

3 = Neither Agree nor Disagree

4 = Slightly Disagree

5 = Strongly Disagree

1. I am a determined competitor.
2. Winning is important.
3. I am a competitive person.
4. I set goals for myself when I compete.

5. I try my hardest to win.
6. Scoring more points than my opponent is very important to me.
7. I look forward to competing.
8. I am most competitive when I try to achieve personal goals.
9. I enjoy competing against others.
10. I hate to lose.
11. I thrive on competition.
12. I try hardest when I have a specific goal.
13. My goal is to be the best athlete possible.
14. The only time I am satisfied is when I win.
15. I want to be successful in sports.
16. Performing to the best of my ability is very important to me.
17. I work hard to be successful in sports.
18. Losing upsets me.
19. The best test of my ability is competing against others.
20. Reaching personal performance goals is very important to me.
21. I look forward to the opportunity to test my skills in competition.
22. I have the most fun when I win.
23. I perform my best when I am competing against an opponent.
24. The best way to determine my ability is to set a goal and try to reach it.
25. I want to be the best every time I compete.

Competitiveness Subscale consists of items: 1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 21, 23, 25

Win Orientation Subscale consists of items: 2, 6, 10, 14, 18, 22

Goal Orientation Subscale consists of items: 4, 8, 12, 16, 20, 24