The Impact of Education and Employment on the Sport-Related Drinking Motives of Professional Footballers: A Study of National Rugby League and New Zealand Super Rugby Players.

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Attestation of Authorship

I hereby declare that this submission is my own work and that, to the best of my knowledge and belief, it contains no material previously published or written by another person (except where explicitly defined in the acknowledgements), nor material which to a substantial extent has been submitted for the award of any other degree or diploma of a university or other institution of higher learning.

Signed: …….

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Abstract

The Athlete Drinking Scale (ADS) measures an athlete's sport-related motives for drinking alcohol (Martens, Watson, Royland & Beck, 2005). To date this scale has only been utilised with collegiate athletes. This study examines the validity and reliability of Martens et al.'s (2005) ADS in a professional sport context, identifies the sport-related drinking motives (SRDM) of professional rugby union players in New Zealand and rugby league players in Australia and New Zealand, identifies differences in the sport-related drinking motives of rugby union and league players, and identifies the impact of education, current non-sport employment, current education activity, age and experience on a professional athlete's sport-related drinking motives. Using an expert panel, a modified version of the ADS was developed to suit the professional sport context. This survey also included questions that asked participants about their education history, current activity, current employment activity, year of birth and their debut year in their respective competitions. A sample of professional rugby union and league players (n = 193) were recruited from the National Rugby League or one of the five New Zealand Super Rugby franchises. Confirmatory factor analysis (CFA) was used to examine the reliability and validity of the ADS in this setting. Two further rounds of CFA, along with a thorough examination of the theoretical background of the ADS, produced a three factor, nine-item scale. Mean difference testing identified only three statistically significant results. Compared to rugby league players, rugby union players reported higher levels of both positive reinforcement and team/group motives. The other statistically significant result was that players who were currently not involved in education reported higher positive reinforcement scores than players involved currently in education.

The revised ADS was proven to be an effective measurement tool for measuring the SRDM of professional rugby league and union players. After the analysis, the respondents of this study were found to have identified SRDM consistent with previous uses of the scale in

different settings. Whilst rugby union players cited positive reinforcement and team/group motives significantly higher than their rugby league counterparts, little evidence has emerged from this research project that links respondent's education history, along with their education and employment activity to their SRDM.

Chapter 1 – Introduction

As two of the most popular Australasian winter sports in terms of match attendance (ABS, 2012), television viewership (OzTam, 2012) and junior participation (ABS, 2011), rugby union and rugby league are high profile sports, generating revenue sufficient to sustain full-time professional athletes. With such a profile comes an increased level of attention, both from the news media and the general public. In recent years, both rugby codes and athletes have experienced relentless public and media scrutiny especially with regard to alcohol consumption (Kilgallon, 2009; Lawton, 2007; Smith, 2009).

Very little previous research has explored the sport-related drinking motives (SRDM) of professional athletes. Most of what is known about SRDM for athletes is based on studies of National Collegiate Athletic Association (NCAA) athletes (Martens et al., 2005; Martens, Labrie, Hummer, & Pederson, 2008; Martens & Martin, 2009). NCAA athletes are technically amateur, because they are not paid a salary. Within the existing sport-related drinking motives research, the influence of education, non-sport related employment, athletic tenure and age has not been investigated. This is not surprising given the student samples in the NCAA research, in which the sample questioned were generally young, amateur collegiate level athletes.

The Athlete Drinking Scale (ADS) (Martens et al., 2005) comprises three motive subscales. Positive reinforcement refers to athletes drinking alcohol as a 'reward' or to enhance positive feelings. Team/Group refers to athletes using alcohol as a tool to strengthen or enhance their standing in a team or group setting. Sport related coping refers to athletes using alcohol as a coping mechanism when results or performance were less than ideal. The internal consistency and validity of the ADS is good, based on previous examinations of the scale (Martens et al., 2008; Martens & Martin, 2009). The ADS has also accounted for a

significant amount of variance in athlete's reported drinking behaviours (Martens et al., 2008). However, the psychometric properties of the ADS in the context of professional sport remain unexplored. Given the relative shortage of research in this context, a tremendous opportunity presents itself to extend the existing knowledge on this topic.

1.1 Objectives

The aim of the research is to understand the SRDM of professional football players. The specific objectives of the research are to:

1) Test the validity and reliability of the Athlete Drinking Scale (ADS) in the context of professional rugby union and rugby league in Australia and New Zealand;

2) Identify the SRDM of professional rugby union and rugby league players in Australia and New Zealand;

3) Identify differences in the SRDM of rugby union and rugby league players in Australia and New Zealand; and,

4) Identify if education history and current activity, current employment activity, age and experience have any influence on the SRDM of professional rugby union and rugby league players in Australia and New Zealand.

1.2 Methods Overview

Using an expert panel, a modified version of the ADS was developed to suit the professional sport context. This survey also included questions that asked participants about their education history, current activity, current employment activity, year of birth and their debut year in their respective competitions. The survey was then submitted to the Auckland University of Technology Ethics Committee for ethical approval before being distributed to

potential respondents (refer Appendix C). Once approved, a link to an online survey was emailed to all members of the Rugby League Players Association (RLPA). A hard copy of the survey was distributed by the New Zealand Rugby Players Association (NZRPA) to its members during a regularly scheduled visit. Confirmatory factor analysis (CFA) was used to assess the psychometric properties of both the individual items (in this case, the 19 ADS items) and the latent factors that compose the scale. A variety of mean-difference techniques (ANOVA and t-test) were used to examine the relationships between the latent factors and identify statistically significant results and emergent trends.

1.3 Significance of the Research

This study is the first to utilize the ADS within the professional sport context. Developing a version of the ADS that is valid and reliable in the context of professional sport will permit practitioners and scholars to accurately and confidently assess the SRDM of professional athletes.

For the first time, the SRDM of NRL and NZRU players are examined. This has the potential to inform administrators of these two professional codes of why their athletes drink alcohol. The next objective of this project was to examine the influence education history, along with current education and employment activity has on the athlete's SRDM. This understanding may inform the variety of player welfare and player support initiatives within these organisations. Strategies could be developed and initiated to manage player activity away from the football field, for example study and work options which have a positive effect on their drinking motives and subsequent alcohol-related behavior. A desired outcome for the NRL and Super Rugby is more responsible alcohol consumption by their athletes. This research project has potential to assist that goal by firstly identifying what motivates the players to drink, and secondly, how activity away from their football-related obligations can

influence those motives. This may allow NRL and Super Rugby policy makers and strategists to develop action plans which encourage more responsible consumption of alcohol.

1.4 Study Delimitations

The delimitations of a study limit the scope of the inquiry as determined by the deliberate exclusionary and inclusionary decisions of the researcher. In essence delimitations define the boundaries of the research and reflect what is not investigated.

This study focussed only on SRDM. No attempt was made to measure non-sport-related drinking motives (Carey & Correia, 1997) or internal (coping, enhancement) and external (social, conformity) reinforcement motives (Gmel, Labhart, Fallu & Kuntsche, 2012).

This study did not assess drinking behaviours, either sport related or non-sport related. This project was more concerned with finding out why athlete's drink, not when or how much. By identifying drinking motives successfully, strategies can be put in place that can influence drinking behaviours. No data concerning what athletes drink, when they drink, how much they drink nor who they drink with was collected. There was no attempt to assess levels of hazardous drinking, alcohol misuse or anti-social behaviour associated with alcohol consumption.

The study is concerned only with professional footballers, and not the wider group of professional athletes, or any amateur athletes. The study only collected data from two types of football – Rugby League and Rugby Union. Professional footballers from the Australian Football League (AFL) and the A-League were not part of the study. The study uses professional Rugby Players from New Zealand and professional Rugby League players from

both Australia and New Zealand. The study does not include athletes from the Australian Super Rugby Franchises (i.e. Reds, Waratahs, Force, Rebels and Brumbies).

1.5 Researcher perspective

It is important to note my perspective as the researcher on this topic. At the time the research took place, I was contracted to an NRL team, in my thirteenth season as a professional rugby league player. This topic appealed to me as a research project because of the changes I have observed in my time in the game. My era was the first to be characterised by full time professionalism. Up until the mid-1990's rugby league players were semi-professional, with almost all engaged in external employment to supplement their rugby league related income. The onset of full time professionalism saw a reduced need for players to engage in education or employment outside of the game. This same period saw the media coverage of the game grow to a point where players off-field behaviour was being scrutinised as much as what occurred in the field. Repeated instances of reports of player misbehaviour associated with alcohol consumption inspired me to further investigate what motivates players' attitudes toward alcohol, and to determine if education and employment activity are in anyway associated with athletes and alcohol consumption.

1.6 Thesis Outline

The remainder of the thesis is structured in four chapters. In Chapter 2, the literature review examines previous research on the relationships between sport, athletes, education and employment and alcohol, along with the development of scales that measure athlete drinking motives. Chapter 3 provides a brief overview of methodology before a more detailed description of the methods, instrumentation and analytical procedures. Chapter 4 presents the results of the study. Finally, Chapter 5 discusses key findings, implications for practitioners and future research.

Chapter 2 - Literature Review

Initially, literature surrounding the notions of sport, alcohol and society in a general sense will be examined. This will give a general overview of studies which have researched contemporary society's attitudes toward and use of alcohol, along with the known effects of alcohol use. The second section will review previous research that deals with alcohol and how its use affects athletes specifically. This will examine literature written about why athletes use alcohol, and the effect it has on their body. The third section will examine alcohol's effect on education and employment in wider society, particularly whether one's level of education and current employment status has an effect on their alcohol use. The final section will review the development and previous uses of the ADS, discussing the scale's development from a basic Drinking Motives Measure, through to the ADS as it now exists.

2.1 Sport, Alcohol and Society

Alcohol is perhaps the most socially acceptable drug available. In many countries and cultures, alcohol is consumed for a variety of reasons in numerous contexts including sociability, cultural participation, and religious observance or as a result of peer or media influence (Sandra & Robert, 2001; Turrisi, Mallett, Mastroleo & Larimer, 2006). People may also drink for pleasure, relaxation, mood alteration, enhanced creativity, intoxication, addiction, boredom, habit and to overcome inhibitions (Australian Government, 2011). For many young people, drinking alcohol is a rite of passage that distinguishes the onset of adulthood. In western society, it is seen as 'normal' to mark the end of the working week by consuming alcohol, with many using alcohol as a tool to unwind and begin the relaxation process. In a group setting, the effect alcohol has on lowering people's inhibitions makes it a useful social lubricant and a fast way to break down barriers between people and build camaraderie. In addition to alcohol being seen as a rite of passage indicator, amongst

young people it can also be seen as an indicator of social acceptance, where to be seen as fitting in means to be seen with a drink in your hand.

Fundamentally, alcohol is a central nervous system depressant that induces feelings of relaxation, wellbeing and loss of inhibitions (Australian Government, 2011). As alcohol intake increases, these positive effects are negated by effects such as nausea, loss of balance, drowsiness and vomiting (ALAC, 2012). When consumed responsibly, alcohol can serve a positive purpose and have very few adverse effects (Roerecke & Rehm, 2012). However, when alcohol is abused, its consumption has been linked with many serious and potentially fatal diseases. Excessive alcohol consumption has been linked to serious illnesses such as cardiovascular disease, cancer (Donnelly & Gavin, 2009), diabetes, obesity and liver disease (Schrijvers, Stronks, van Dike & Mackenbach, 1999) and can negatively impact the mental health of abusers and harm unborn children of mothers who drink (Australian Government, 2011).

Alcohol is the most common drug-classed substance consumed by athletes. This may be because alcohol is widely perceived as acceptable, and, as such, may be perceived as being relatively harmless. In actual fact, the use of alcohol in any amount has been proven to have a negative effect on aerobic performance and have a causative effect in sport related injury (O'Brien & Lyons, 2000). The Sport Alcohol Nexus (Palmer, 2011) is an overarching theory which purports to explain the close relationship between sport and alcohol. The Sport Alcohol Nexus includes both the cause and effect of sport's association with alcohol. Palmer (2011) argues that any unsavoury or negative incident which relates to sport and alcohol will find its roots within this framework. This theory consists of four themes: commercial economy (i.e. sponsorship and branding), social practices (i.e. drinking as a culture, hedonism), alcohol related crime and violence in sport (i.e. crowd disorder, miscreant

athletes) and sport-related drinking and public health (i.e. sport endorsing a damaging product). Each of these is discussed next.

The commercial economy theme refers to linkages between sport organisations, alcohol companies and media organisations. The theme is observable in the context of elite Rugby League in Australia and New Zealand. The XXXX Queensland Maroons, the VB New South Wales Blues, the Jim Beam Cup and Bundaberg Rum Monday Night Footy are just some of the naming rights sponsorships reflecting the commercial economy theme of the Sport Alcohol Nexus. The commercial economy impacts player alcohol consumption. Team members or individual athletes sponsored by alcohol companies have higher rates of alcohol disorder (Babor, Higgins-Biddle, Saunders, & Monteiro, 2001). Athletes that received free or discounted drinks from sponsors are more likely to have higher drinking levels (O'Brien & Kypri, 2008).

A social practice refers to the manner in which alcohol is consumed by wider society and society's attitudes toward alcohol. Social practices will always influence the manner in which athletes view and how they use alcohol. In recent years, overall alcohol consumption has declined, but the rate of binge drinking, and in particular, youth bingeing increase dramatically (Warren, 2009). It has been suggested that with the removal of licensing restrictions and the ever increasing availability of alcohol, society has removed most of the taboos associated with drinking and made binge drinking an acceptable part of growing up (Warren, 2009). Across the world, trends of binge drinking have emerged throughout different levels of society (Ormrod, 2009; Levin, 1998), and it would be naïve to assume these trends have not penetrated the psyche of the athlete.

The third theme of the sport alcohol nexus is violence in sport and the effect alcohol has on these attitudes. Kreager (2007) found that involvement in sport does little to curb

violent male adolescent tendancies. In fact, youths who are involved in contact sport, such as wrestling and football, were more likely to be involved in physical conflict off the sporting field than those who played non-contact sports or those that played no sport at all. Additionally, involvement and success at those sports which have violent themes, for example American football, ice hockey and wrestling, are celebrated, and individuals who reach the top echelon of players in these sports are revered as heroes (Fogel, 2011). On field is not the only place where violence occurs at sports events. It has been considered a 'macho' type of behavior amongst sports players to consume large quantities of alcohol, and often participate in the antisocial behaviour which can follow such a drinking session. Similarly, the same 'macho' attitudes such as being involved in heavy collisions and fighting on the sports field are often revered. It perhaps makes sense then, that players who indulge in these types of behaviors on field, coupled with irresponsible use of alcohol, are likley to be involved in post-match, anti-social behaviour. It is not only on field where violent attitudes and acts manifest themselves.

The fourth theme of the sport alcohol nexus refers to sport-related drinking and public health. This dimension alludes to the notion of alcohol related activities that are both health damaging and health promoting (Palmer, 2011). Put more simply, this theme explores excessive alcohol consumption by sportspeople and the organised groups who support these athletes and competitions and the fact that sport is used as a tool to assist in the rehabilitation of recovering alcoholics and drug abusers. It has been proven that sport is an effective tool for recovering alcoholics in their effort to gain sobriety (Gutgesell & Canterbury, 1999). Various athletic activities have different effects on rehabilitating patients. For example body building can help decrease depression whilst aerobic training such as circuit classes help increase the patient's internal locus of control, assisting them in their battle with addiction (Gutgesell & Canterbury, 1999). This use of sport as a treatment for alcoholism is somewhat

of a contradiction to the notion of sport providing a social space for some participants to “get routinely and often spectacularly inebriated” (Palmer, 1999, p.178).

After reviewing the available literature, the acceptance of alcohol in wider contemporary society and it’s strong association with sport is apparent. Given how acceptable alcohol has become, and it’s long standing association with many sporting codes, questions can be raised about athlete’s attitudes toward alcohol, motives for drinking and their use of alcohol.

2.2 Athletes and alcohol

Much of the research on athletes and alcohol consumption has been conducted in the context of students. A common theme throughout the literature is the heavy, episodic, or binge drinking amongst student athletes (Frye, Allen, & Drinnon, 2010; Grossbard, Hummer, LaBrie, Pederson, & Neighbors, 2009; Rockafellow & Saules, 2006). The most common explanation for binge drinking is that the student athletes’ heavy schedule provides only a limited window of opportunity to drink alcohol compared to the general student population. Student-athletes seek to make the most of these opportunities.

Another recurring theme is the effect perceived norms has on college athletes drinking habits. Many college age athletes drank alcohol because it is a social norm. (Grossbard et al., 2009; Perkins & Craig, 2006; Yusko, Buckman, White, & Pandina, 2008; Zamboanga et al., 2011). Put simply, student athletes drink because everyone else is doing it. Peer-pressure is also recognised as a cause of alcohol use by adolescences and youth (Korte, Pieterse, Postel & Van Hoofa, 2012; McKay & Cole 2012; Kelly et al., 2012)

Studies have been performed to examine whether athletes use alcohol as a coping mechanism or a way of escaping the pressure of their realities. It has been found that anxiety

surrounding athletes' sporting performance can underpin their alcohol consumption (Martens, Labrie, Hummer, & Pederson, 2008; Martens, Watson II, Royland, & Beck, 2005; Yusko et al., 2008).Yusko et al. (2008) found that student athletes, when compared to non-athletes, are more likely to use alcohol as a coping device, and experience more negative consequences as a result. Similarly, Martens et al. (2008) found that students who used alcohol as a coping device are more likely to experience alcohol related problems than athletes who cited other motives for drinking. O'Brien et al. (2012) found that collegiate level sportspeople were more likely than their peers who did not engage in sporting activity to have displayed aggressive behaviour and damaged property when intoxicated.

Along similar lines is the notion that different athletes have different motivations for drinking alcohol, knowing that it is likely to result in decreased performance (O'Brien & Lyons, 2000). Athletes that are extrinsically motivated with their involvement in sport have been found to be at more risk of alcohol abuse problems than intrinsically motivated athletes (Rockafellow & Saules, 2006). Extrinsic motivations can be defined as material, or 'mentally material' rewards, whereas intrinsic motivation is characterised by someone involving themselves in an activity for its inherent satisfaction (Rockafellow & Saules, 2006). This includes items such as money, prizes, acceptance by a peer group and heightened levels of attraction to members of the opposite sex.

The 'acceptance by a peer group' notion leads to the theory that members of a team are far more likely to drink than individual sportspeople (Grossbard et al., 2009; Peretti-Watel et al., 2003; Rockafellow & Saules, 2006; Wechsler, Davenport, Dowdall, Grossman, & Zanakos, 1997). There are many examples of team related pressure being a reason that athletes drank alcohol. Grossbard et al. (2009) found the level of attraction to one's team accounted for significant variance in alcohol consumption and alcohol related consequences. A stronger attraction to the team lead to increased alcohol use and an increase in negative

alcohol related consequences. Interestingly, from the same study came the notion that the athletes who had the most favourable attitudes toward their team drank with their teammates, but managed to avoid the subsequent negative consequences, perhaps as sign of respect for the team as a whole, or to avoid and repercussions that would affect the team. Perkins and Craig (2006) best summed up the recurrent theme of most literature by inferring that along with the harm it does to the athletes themselves, their high profile status as role models within their peer group is a reason for concern about the need to seriously address the drinking problem of athletes within the collegiate system.

Major theories have developed in the study of alcohol use by athletes. In addition to the previously discussed Sport- Alcohol Nexus (Palmer, 2011), Alcohol Expectancy Theory (Jones, Corbin, & Fromme, 2001; Zamboanga et al., 2011) is generic theory which states that individuals who expect favourable outcomes from alcohol are more likely to drink than those who do not. When it comes to athlete alcohol use, the reverse is also true. Athletes who believe alcohol could impair their ability to perform at their best are far less likely to indulge in binge drinking sessions and therefore are less likely to be involved in negative incidences associated with binge drinking.

Thus far, there have been few studies performed explicitly targeting the effect of alcohol use on athletes attitudes and behaviour, the potentially negative consequences of drinking alcohol, and management strategies for these issues. Most studies undertaken in a professional setting are more concerned with alcohol's effect on the athlete's body in a purely physical context, mainly measuring its effect on performance and recovery from competition (Kingsland et al., 2011; Lundy, O'Connor, Pelly & Caterson, 2006; O'Brien & Lyons 2000).

As with many other professional sporting competitions around the world, NRL players' alcohol consumption has been studied for the physical toll it takes on their bodies. In

previous studies, it was found that generally, rugby league players' alcohol consumption was high relative to that of non-athletes (Lundy et al., 2006). This is surprising, given the high demands the game places on the body, and the intense, seven month long duration of the NRL season. This trend may develop early in the careers of rugby league players, given that in adolescence and young adulthood at an amateur or semi-professional level, excessive alcohol consumption is more prevalent among sportspeople, particularly those involved in contact sports (Kingsland et al., 2011). Professional rugby league players are well aware of the potential harm excessive alcohol use can do to their body. They are educated that the use of alcohol in the lead up to, or recovery from games, is responsible for considerable harm from either chronic illness or injury (Kingsland et al., 2011), yet many still consume alcohol at a dangerous level.

Post-game alcohol consumption appears to be an important part of rugby league culture (Lundy et al., 2006). It is part of the tradition of the game, even at an elite level, to train hard during the week, play hard on the weekend, and drink hard following the game. There are examples of harmful alcohol consumption being a problem for players and spectators alike (Warner-Smith, Wiggers, Considine, & Knight, 2000). In fact, alcohol consumption after a match was so high, that Lundy et al.'s (2006) anthropometric study found that given a screening on the day after a game, an alarming amount of NRL players' post-game energy requirements came from alcohol and fat, suggesting players reward themselves after a game with poor food choices and alcoholic drinks.

Along with the harm it does to their bodies NRL players' alcohol consumption is often the root of their questionable behaviour off the field. Previously, very little research has been done on the link between alcohol and NRL player behaviour. In one of the only recent examples of an examination of player behaviour, it was found that most problematic sexual

encounters involving NRL players were initiated when they were under the influence of drugs or alcohol (Albury, Carmody, Evers, & Lumby, 2011).

Consistent with the literature surrounding rugby league and alcohol, much of the rugby union/ alcohol literature concerns the effect of alcohol on athletic performance and post-match recovery when alcohol is introduced. Alcohol has found to have a moderate effect on performance in simulated rugby union games, even in small quantities (Barnes, Mundel, & Stannard, 2011), suggesting that any player serious about their performance would abstain from alcohol prior to and immediately following a match. Similarly, it has been found that alcohol has an effect on performance and recovery, and medical staff should educate players about the detrimental nature of alcohol abuse and addiction on their performance (Dietzen & Topping, 1999). A further study (Quarrie et al., 1996) found that many rugby players, both male and female, drank to a level considered hazardous, not only to the rugby performance, but to their overall long term health, consistent with the few studies performed on rugby league players.

Interestingly, it was found that alcohol consumption before a match had no significant impact on injuries sustained in collisions in rugby union tackles (Garraway et al., 1999). This finding is an outlier in the literature, with all other studies suggesting only poor anthropometric consequences of alcohol consumption and rugby union performance.

Athletes have been found to use alcohol as a coping mechanism or a way of escaping the pressure of their realities. Anxiety surrounding their sporting performance underpins alcohol consumption (Martens, Labrie, Hummer, & Pederson, 2008; Martens, Watson II, Royland, & Beck, 2005; Yusko et al., 2008). Yusko et al. (2008) found that student athletes, when compared to non-athletes, are more likely to use alcohol as a coping device, and experience more negative consequences as a result. Similarly, Martens et al. (2008) found

that students who used alcohol as a coping device are more likely to experience alcohol related problems than athletes who cited other motives for drinking.

Athletes use alcohol for a variety of different reasons, and in a variety of different ways. Previous studies have found peer pressure, the desire to be part of their team and coping all to be prominent, recurring motives for athlete drinking. These reasons motivate athletes to drink many different ways, ranging from complete abstinence from alcohol, to regular binge drinking. Athlete's attitudes towards alcohol in many cases reflect that of wider society.

2.3 Education, employment and alcohol

This research project is concerned with identifying if education and employment have an effect on alcohol consumption and motives for drinking, so the impact of alcohol on the wider population's drinking motives and habits should also be examined. Education and employment status almost certainly has an impact on an individual's alcohol consumption. (Baekeloo, Novik, & Bush, 2011; Bingham, Shope, & Tang, 2005; Palfai & Ralston, 2011) At a tertiary education level, there are many interesting examples of student's alcohol consumption levels and their motivations for drinking. Many students appear to reward themselves at the end of a school week with a heavy drinking session (Baekeloo et al., 2011; Palfai & Ralston, 2011). Two very different patterns of thought become apparent about students motivations for drinking. Students who placed low levels of meaning on academic goals drank more heavily and experienced more negative alcohol related consequences. Amongst the same group, the students who premeditatedly drank to get drunk were also far more likely to be involved in a negative alcohol related incident (Baekeloo et al., 2011). Conversely, students who showed a desire to maintain a high level of academic achievement

appeared to be strongly associated with lower levels of alcohol involvement (Palfai & Ralston, 2011). .

The effect of higher education on one's alcohol use later in life has been widely researched (Bingham, Shope & Tang, 2005; Marchland, 2008; Alameida, Harrington, Laplante, & Kang, 2010). Men who finish tertiary education engage in more alcohol high risk behaviour than both men who have not finished higher education or women in general (Bingham, Shope, & Tang, 2005). The same study found the second most at risk group in regards to risky alcohol behaviour were men who had not attended college at all, and if they were heavy alcohol users in high school, they were likely to continue that behaviour into adulthood. However Marchand (2008) found that individuals who were employed in the middle and upper echelons of corporate management, and thus were often the most highly educated, displayed the highest risk drinking behaviours. Evidence has been found to link higher income and a high level of education with increased levels of alcohol consumption and as more likely to be involved in a drink driving incident (Alameida et al., 2010). In younger population groups, those with the lowest education levels who are actively drinking are the most likely to develop lifetime alcohol abuse problems (van de Goor, Spijkerman, van den Eijnden & Knibbe, 2011).

Much of the existing literature examines the effect of alcohol on employment. Opinion is mixed over what effect alcohol has on the type of work individuals find, and the impact drinking has on their performance. Much of the literature portrays alcohol misuse and abuse unfavourably. Generally, alcohol use was found to be used by people in high pressure, high stress situations as a coping mechanism and by people performing low-level menial work as an escape mechanism (Martin, Blum, & Roman, 1992; Terza, 2002). Worryingly, these exact factors (stress, low education, lower levels of work responsibility) when mixed with alcohol misuse are a predictive characteristic of depression in men (Bazargan-Hejazi,

Ani, Gaines, Ahmadi & Bazargan, 2010). When taken the extreme, alcohol abuse has an extremely negative impact on employment. Alcoholics are more likely to land jobs in smaller firms with fewer benefits and with higher risk of injury. In a similar nature to sporting teams, workplace culture seems to have a large effect on drinking habits. If a place of employment has a big drinking culture, the employees who work there will generally consume more alcohol, more often (Martin et al., 1992). Greater alcohol consumption is associated with higher education and income levels (Moore et al., 2005). It is suggested that people who are highly educated and high paid people turn to alcohol as a reward for their achievements, or to fill a void in their lives.

After reviewing the literature surrounding alcohol and employment several themes become clear. An individual's education or employment status often appears to have an impact on their alcohol consumption. Certainly, it appears that the more highly educated or higher level of employment one attains, the more likely they are to drink excessive levels of alcohol. There is little existing literature, however, which examines the effect one's employment status or history has on their motives for consuming alcohol.

2.4 Sport-related Drinking Motives

Studies measuring the sport-related drinking motives (SRDM) of athletes can be traced back the 1990s, and find their roots in generic alcohol related theory. The Drinking Motives Measure (DMM) was developed for use within a wider societal group (Cooper, Russell, Skinner, & Windle, 1992). The DMM comprised three factors: Social Motives, Enhancement and Coping. Cooper et al. (1992) found that any reason their respondents had for consuming alcohol fell within these categories. The scale was developed after a research project spanning three years, which measured a random sample of respondents of varied age, gender and race in a suburban New York. The researchers found little differences in the

responses from any of the sub groups (age, gender, race), which suggests the scale was a valid, reliable measure of drinking motives. The research found that respondents who drank for social or enhancement reasons were much less likely to suffer negative effects during or after they had been drinking, whereas respondents who cited coping as a reason for drinking often drank alone and were more likely to experience negative consequences and indulge in self destructive behaviour. The research also found that respondents who drank to enhance positive experiences (social, enhancement) were the group more likely to have more frequent heavy or binge drinking episodes.

The DMM was validated by a confirmatory factor analysis a decade later, this time in a collegiate athlete setting, (Martens, Cox, Beck, & Heppner, 2003). They found that the three factor DMM structure (Cooper et al., 1992) also proved a useful tool in examining student athletes drinking habits and motives. Mathew Martens' further analysis and development of the DMM evolved into the Athlete Drinking Scale (ADS) (Martens et al., 2005).

Martens et al. (2005) identified that "intercollegiate athletes consume more alcohol and experience more alcohol-related consequences than non-athletes" (p.158). They wanted to develop a reliable and valid analysis on a measure to assess the SRDM of the student-athletes. Martens et al. (2005) felt that the DMM was a useful predictor of alcohol consumption and related problems amongst the general population, but when used in a sport specific setting, failed to measure any sport specific motives. They aimed to develop a scale that would investigate and understand drinking motives specific to athletes to identify any differences that may be apparent, in order to manage the student athletes in a more productive manner.

The ADS initially consisted of 24 questions, but five were subsequently eliminated following an exploratory factory analysis. The remaining 19-items were distributed across three factors: positive reinforcement, team/group identity and sport-related coping. Positive reinforcement (PR) refers to athletes rewarding themselves after a good performance, and included questions such as, "I drink to celebrate athletic victories" (p. 161). In the initial scale development, the PR subscale displayed the strongest unique relationship with most of the outcome variables, meaning the participants identified more strongly with the statements in the PR category than either the Team/Group or Sport Related Coping subscales.

Team/Group (TG) refers to drinking as a team activity, designed to strengthen the camaraderie and togetherness of a team. This factor included questions like, "I drink because it helps develop team cohesion" (p. 161). As the TG subscale measures a motive that is fairly specific to a team sport setting, it is not surprising that this subscale displayed no unique relationships to any previous drinking scales (Martens et al., 2005).

Sport Related Coping (SRC) refers to the use of alcohol as a coping mechanism after an unfavourable outcome or an injury. This factor was derived from the original DMM 'Coping" factor. It included questions like, "I tend to drink more when I'm not performing well athletically" (p. 161). This subscale had a strong relationship with a previously developed scale called the College Alcohol Problem Scale (CAPS) (Maddock, Laforge, Rossi, & O'Hare, 2001), which measured the alcohol related personal and social problems that college students experience. They concluded that their sample of college athlete's answers very much reflected that of the general student population, but some sport specific motives emerged that had not previously been observed, specifically how much the participants identified with the PR and SRC factors.

Since its development, the ADS has been utilised in a number of other studies. Martens, Labrie, Hummer and Pederson (2008) examined the psychometric properties of the ADS, again in a student athlete setting, and confirmed the validity and reliability if the scale. Their findings were consistent with earlier literature which found that those who drank as a coping mechanism were more likely to have negative consequences as a result of their drinking. Finally, Martens and Martin (2010) utilised the ADS, once again in a collegiate sports setting, and this time questioned the same athletes in season and during their off season. They found that all three factor's scores were increased during their competitive seasons, strengthening the reliability and validity of the ADS as a sport specific measurement tool, as it can be assumed that during the athlete's competitive season, their SRDM would be more prevalent than in their off season.

Cleary, the validity and reliability of the ADS is well-established in the context of NCAA collegiate sport. However, the psychometrics of ADS has never been tested in a professional sport setting. Given the student samples in previous research, it no surprise that the impact of education (current and previous) and non-sport employment status on SRDM has not been assessed.

The literature review has given an overview of previous literature written on alcohol in society, athlete's attitudes towards alcohol and how they use the drug, how education and employment affect alcohol use by individuals, and the development and previous use of the ADS. Previous studies have found alcohol to be socially acceptable in wider society, despite being dangerous if consumed excessively. In previous studies, athlete's attitudes toward and use of alcohol has been found to mirror wider society, in that along with it being easily accessible, the social acceptability of alcohol makes it a drug that is consumed without fear. Previous literature saw athletes drink alcohol for a number of different reasons. Peer pressure, wanting to be more a part of the team and the use of alcohol as a coping mechanism for

anxiety were justifications that frequently recur throughout previous studies. There was mixed opinion on education's impact on alcohol use, with some studies finding highly educated people were more likely to drink excessively, whilst others found individuals who were less educated had high levels of alcohol consumption. The same trend emerged through literature regarding levels of employment. Previous studies developing and using the ADS have shown it is a viable tool to assess college-level athletes SRDM. The opportunity to further develop the ADS lies within its application in a professional setting, which this study attempts to do.

Chapter 3 - Methods

This chapter outlines the methods used to gather and analyse data. There are four purposes of this research project. They are 1) to assess the reliability and validity of Martens et al.'s (2005) ADS in a professional sport context; 2) identify the SRDM of professional footballers; 3) Identify differences in the SRDM of professional rugby union players and rugby league players; 4) identify the impact of education and employment history and current employment activity on the athletes SRDM. More specifically, this chapter discusses the research design, sampling and participants, instrumentation and data analysis.

In order to most effectively explore the research questions a quantitative approach was utilised. The quantitative approach is appropriate for hypothesis testing and psychometric assessment of existing instrumentation. Most agree that quantitative research is a deductive strategy, and that operating in a quantitative paradigm is more objective than the qualitative paradigm. A quantitative method aims to quantify results in order to provide evidence that supports a hypothesis (Bryman & Bell, 2007). Typically, quantitative researchers take a positivist view by introducing a hypothesis, designing and implementing a data collection, processing and analysing data, and then discussing findings (Bryman & Bell, 2007). This differs from the qualitative approach, which relies more on interpretivism to generate theory (Bryman & Bell, 2007).

3.1 Sampling and Participants

This research project recruited players from all clubs within the National Rugby League and players from the five Super Rugby franchises in New Zealand. Access to players was facilitated by the Rugby League Professionals Association (RLPA) and the New Zealand Rugby Players Association (NZRPA) respectively.

The RLPA distributed an email to all NRL players who had supplied an email to the RLPA (n = 342). The email was not distributed to the NRL players who failed to provide an email address to the RLPA (n = 49). The email was distributed by the Chief Executive Officer of the RLPA, and included a short message from the researcher as well as the link to the online survey. The use of the RLPA ensured that the privacy of participants was retained because the researcher was never in possession of the athlete's personal email addresses. The online survey allowed the participants to complete the survey in their own time, away from people (i.e. coaches, management) that could potentially influence their answers. A participant information sheet was included on the front page of the online survey. An email reminder was sent out by the RLPA approximately 3 weeks later. The online survey was open for one month. After that month, there were 105 complete surveys from the 110 responses, providing a 32% response rate for the NRL players.

The NZRPA advised the researcher to adopt a different procedure for enlisting the support of its members. The NZRPA CEO was provided with an electronic copy of the survey. He distributed a hard copy of the survey to 150 players contracted to the five New Zealand Super Rugby franchises. The Super Rugby franchises are the Blues (Auckland), Chiefs (Waikato), Hurricanes (Wellington), Crusaders (Canterbury) and Highlanders (Otago). Participants were invited to complete the survey at team meetings with the CEO. There were 74 completed surveys from the 84 responses. This provided a response rate of 56%.

3.2 Instrumentation

The first section of the questionnaire contained questions regarding the participant's education (What is the highest level of education you achieved?), current training/education (If you are currently involved in a formal education or training program, which of the following best describes that program?) and employment status (Do you currently work

outside your NRL/ NZRU contract commitments?). Participants were asked to indicate their year of birth (What is your year of birth?) and the year in which they made their NRL or Super Rugby debut (In what year was your NRL premiership debut?)

The second section of the survey was focussed on measuring the SRDM. The original ADS were reviewed by an expert panel with expertise in scale development and professional sport. The panel recommended the alteration of five items to make the survey more relevant to the potential participants. These alterations were made to increase the football-related content of the survey. In previous applications of the ADS, a range of sports were covered, whereas in this application, it was only the football codes of rugby league and rugby union. The modified ADS items are listed in Table 3.1. A more through discussion of the ADS's dimensionality is provided in Section 2.4 of the Literature Review.

Table 3.1

ADS Questions and Modifications

Code	Original ADS Question (Martens et al. 2005)	Modification (if any)
PR1	I enjoy the feeling of getting drunk	
PR2	I drink to have a good time with my teammates	
PR3	After a game/match/meet, it is important for me to go out and celebrate with alcohol	After a game, it is important for me to go out and celebrate with alcohol
PR4	Because I work so hard at my sport, I should be able to drink to have a good time	
PR5	I drink to celebrate athletic victories	I drink to celebrate a victory
PR6	I get a rush out of becoming drunk	
PR7	If I've performed well, I feel like I can go out and drink a little more than usual	
PR8	Winning or performing well is a good reason to go out and drink	
PR9	I drink because I believe in a "work hard, play hard" lifestyle	
TG1	I drink to "fit in" with my teammates	
TG2	When drinking alcohol with teammates, it becomes a competition	
TG3	I feel pressure from my teammates to drink alcohol	
TG4	Alcohol use is an important part of the athletic culture at this institution	Alcohol is an important part of my team's culture
TG5	I drink because it's part of the culture of being an athlete	
TG6	I drink because it helps our team develop cohesion	
TG7	I drink because my teammates expect me to drink with them	
SRC1	I drink to help me deal with poor performances	
SRC2	I drink to deal with sport-related stress	I drink to deal with football related stress
SRC3	I tend to drink more when I'm not performing well athletically	I tend to drink more when I'm not performing well on the field

All ADS items utilised a six point Likert scale, ranging from strongly disagree to strongly agree. A six point Likert scale was agreed upon to give a definitive agree or disagree theme to the answer.

Both the hard copy (Rugby Union) (refer Appendix A) and online (Rugby League) (refer Appendix B) questionnaire consisted of 24 items. In both instances, the demographic data was collected first. The order of the ADS items were randomised for the online survey. Item order randomisation has been shown to significantly alter the measurement properties of surveys, particularly when using a largely homogenous sample (Bline, Lowe, Meixner & Nouri, 2003). Question randomisation reduces the effects of survey satisficing, especially in respondents who are rushing to complete the survey (Malhotra, 2008). The ADS items in the hard copy survey were not randomised. The only modifications to the Super Rugby survey were to questions 3 and 5. These were modified to suit the Rugby Union, as opposed Rugby League context. Respectively, these were modified to read, "Do you currently work outside your NZRU contract commitments?", and "In what year was your Super Rugby Debut? If yet to debut, please write 2012."

One question included in the questionnaire proved problematic to analyse, and as such, a decision was made about its future inclusion in the analysis process. In answer to the question, "Do you work apart from your NRL or NZRU contract commitments, and if yes, how many hours per week?", only 30 participants from the rugby union and league data combined indicated they did external work. Of those 30, very few gave an indication of how many hours they were working. It was decided to discard the answers from this "hours worked" option from subsequent analyses.

In terms of ethics, participation was voluntary and anonymous, with no incentives for participation, or consequences for non-participation. At the conclusion of the NRL survey, players were provided with the invitation to contact the NRLPA-endorsed counselling service, should the questions trigger any uncomfortable thoughts about their drinking behaviour. The rugby union respondents were provided with the New Zealand Alcoholics Anonymous free-call number.

3.3 Data Analysis

In order to assess the psychometrics of the ADS in the context of professional rugby in Australia and New Zealand, a decision had to be made about whether to conduct exploratory factor analysis (EFA) or confirmatory factor analysis (CFA). The purpose and merits of each are discussed next, as well as a decision and rationale for the analytic technique used in this project.

Both EFA and CFA methods are valid ways of potentially analysing the data. EFA is best used in projects that aim to generate new theory and for initial scale development (Hurley et al., 1997). Although this project does contribute to the overall development of the ADS, there is no theory-development aim of this research per se. EFA is best used when data from new items are being analysed for the first time (Hair, Black, Babin, & Anderson, 2010). In contrast, CFA is widely used to test hypotheses, in situations where measurement models have well developed underlying theory, and permits a hypothesis to be either supported or rejected (Hurley et al., 1997). A further purpose of CFA is to test hypotheses about structure and the relationships between variables (Field, 2009). For analysing this data set, CFA was chosen to assess the reliability and validity of Martens et al.'s (2005) work in an alternate setting and to identify and eliminate any items which did not strengthen the factor they represented.

When using CFA, it is very important to assess the validity and reliability of both the individual items and latent factors. Validity is the extent to which a set of measures correctly represents the concepts of a study (Hair et al., 2010). Validity ensures a concept is well represented by the measures. In this analysis, average variance extracted (AVE) is used to assess validity, as well as correlations amongst the constructs. Reliability is the extent to which a set of variables is consistent in what they are intended to measure (Hair et al., 2010).

Reliability relates to the degree to which a measure of a concept is stable. The following construct reliability formula is used to assess reliability:

Figure 3.1. Construct reliability formula

$$\text{Construct reliability} = \frac{(\sum \text{standardized loadings})^2}{(\sum \text{standardized loadings})^2 + \sum \text{measurement error}}$$

The data was initially displayed in a table showing mean, standard deviation, skewness and kurtosis (Table 4.1). For this data set, the mean is the average of the total responses in that category. Standard deviation is the average amount of variation around the mean. Skewness is a measure of symmetry of results around the centre point, and kurtosis is a measure of how close data is to normal distribution (Field, 2009).

The selection of indices to evaluate model fit is a key decision within CFA. One of the most common means of assessing fit associated with CFA models is the significance of the chi-square statistic. A non-significant chi-square statistic indicates that the model-implied covariance matrix and the observed covariance matrix are relatively similar. This similarity is a sign of good model fit (Hair et al., 2010). However, a significant chi square alone is not a powerful sign of poor model fit. Therefore it is recommended that other fit indices be considered in combination with the chi-square test and with each other (Hu & Bentler, 1999.) Two incremental fit indices, the Tucker-Lewis Index (TLI) and Comparative Fit Index (CFI) are widely used, along with two absolute fit indices; the Standardized Root Mean Square Residual (SRMR) and Root Mean Square Error of Approximation (RMSEA) (Kline, 2005). The TLI corrects for model complexity, while the CFI compares the relative fit of a model compared with a baseline model (Kline, 2005). The SRMR measures the difference between observed and predicted covariance's and RMSEA estimates the amount of error of

approximation taking into consideration sample size (Kline, 2005). Utilising this combination of fit indices provides a thorough assessment of model fit (Kline, 2005).

After selecting the fit indices, benchmarks to evaluate the magnitude of the indices' values must be identified. Multivariate normality is the occurrence of a particular variable having normal distribution of skewness and kurtosis in relation to the other variables being analysed (Kline, 2005). Multivariate normality is examined in order to inform the decision of which estimator to utilise. Maximum likelihood parameter estimates with standard errors and a mean adjusted chi-square test statistics that are robust to non-normality. For the TLI and CFI, a cut off of .95 will apply. The cut-off values for SRMR and RMSEA are .08 and .06 respectively (Hu & Bentler, 1999). This combinational approach of fit indices analysis has been found to result in lower error rates, along with being "able to retain relatively acceptable proportions of simple and complex true-population models and reject reasonable proportions of various types of misspecified models in most conditions" (Hu & Bentler, 1999, p.27).

In addition to examining fit indices, other aspects of CFA are evaluated and considered. Cross loading occurs when a variable has more factor loadings exceeding the threshold value, or cut off mark, than deemed necessary for inclusion in the factor analysis (Hair et al., 2010). Cross loading also indicates that the constructs lack discriminant validity. For the purpose of this analysis, variables with cross-loadings greater than .50 were removed from the analysis (Hu & Bentler, 1999).

In MPlus, a modification index is calculated for every possible relationship that is not estimated in a CFA model. Modification indices can be used for diagnosing error term correlations and also previously unspecified correlational relationships between constructs. These modification indices can be used in conjunction with other diagnostics and theory to

improve model structure. Modification indices of 4.0 or greater suggest that model fit could be improved by freeing the corresponding path to be estimated (Hair et al., 2010).

The potential relationship between the three independent variables (educational attainment, current employment status and current educational status) and SRDM were explored using a combination of analysis of variance (ANOVA) and t-tests. ANOVA is used for categorical independent variables with three or more categories, while t-tests are used for dichotomous and categorical independent variables. The ANOVA is a statistical comparison of ADS composite mean scores based on the education/employment categorical variables. This will determine whether samples from different groups come from populations with equal means (Hair et al., 2010). ANOVA examines one dependent measure to a sample. In this case, composite variables will be created by selecting the best performing items from each dimension in the CFA. Individual's mean scores on composite variables will be compared using education and employment items as independent variables. Effect sizes will be calculated for each analysis of mean differences. For t-tests, Cohen's d effect size will be use, where .2 is considered small, .5 is considered medium and .8 is considered large (Cohen, 1988).

To summarise, this research adapted the 19-item Martens et al (2005) ADS scale to suit the professional sport context. Surveys were administered to all members of the NRLPA and to all players within the New Zealand Super Rugby franchises. The ADS variables and the questions which were modified to suit this context serve as the dependent variables. The independent variables are the behavioural and demographic items – highest level of education previously achieved, current education activity, external employment history, age, and years since debut. The data were analysed using a combination of CFA, Chi-square and ANOVA. The research methods used in this study permit 1) specification of the psychometric properties of the ADS, 2) description of the SRDM of professional Rugby League and Rugby

Union Players 3) identification of differences in SRDM between rugby league and rugby union players and, 4) assessment of the association between education history, current education activity, current work activity, age and experience on the SRDM of professional footballers.

Chapter 4 - Results

This chapter presents the results of the data analysis. The initial section outlines the procedure that was implemented to handle missing data. Second, a profile of the sample is displayed, including a presentation of participant's highest level of education previously achieved, current education activity, external employment history, age, and years since debut. The third section displays the results of the CFA, item and factor progression. Finally, the results of the ANOVA and t-tests are presented.

4.1 Missing Data

Most online rugby league questionnaires were completed fully. However, six rugby league participants failed to provide their birth year and one also failed to provide the year of their NRL debut. Apart from these minor omissions, the respondents otherwise completed the questionnaire fully. After analysing the balance of these respondents' answers, it was decided to include their responses in the results of the study. The missing data was coded as 'no answer'.

Rugby league data was collected online, whereby the respondent could only continue to complete the survey if he had answered each question with which they were provided multiple options to choose. The only exceptions to this were the questions that asked about year of birth and year of debut, where respondents could answer in number form (Refer Appendix B). In contrast to the rugby league online administration, the rugby union data was collected using a hard copy questionnaire. Therefore, there was more missing data because respondents were able to skip questions in the absence of the mechanism previously mentioned, whereby they could only continue the survey by fully completing the previous questions. There were ten surveys that had one or more missing datum, and a decision on whether to discard questionnaires was made on a case by case basis. In all but one case it was

decided to include the data because not enough data was missing in the judgement of the research to justify throwing the case out. The one eliminated case was missing data on 12 of the 19 ADS variables. The extent of the incompleteness for that case was taken as a sign of carelessness and/or disinterest which calls into question the veracity of the other data on that questionnaire. Amongst the rugby union respondents, three players failed to indicate year of birth, three failed to indicate debut year, one failed to answer if he was currently working or not, and four failed to answer if they were currently involved in any education or training program. As was the case with the Rugby league data, the decision was to code these as 'no answer'.

In the Rugby Union ADS data, there were occasions where a respondent had failed to give a response for a question. Of the 3667 possible data points (193 respondents X 19 variables), only 13 or 0.35% of data points were missing. In the instances where a respondent failed to give an answer, an answer was substituted using the 'all-available approach' imputation method (Hair et al., 2010). In the all-available approach, the mean score of a respondent's answers on closely related items.

4.2 Descriptive statistics

The section that follows provides a demographic and behavioural profile of the sample. Tables are displayed distinguishing the rugby league data from rugby union data. This data will later be used to determine any trends which emerge when based on the ADS questions. Rugby league participants made up 56.8% (n = 109) of respondents, while rugby union participants made up the remaining 43.2% (n = 83). Collectively, the sample size is 192 participants.

Table 4.1 displays the mean, standard deviation, skewness and kurtosis for the complete data set of 192 respondents.

Table 4.1

Complete Mean, SD, Skewness and Kurtosis Table

	n	Mean	Std. Deviation	Skewness	Kurtosis
Age	183	26.08	4.21	0.16	-0.73
Years' Experience	188	4.56	3.73	0.40	-0.96
PR1	192	3.67	1.62	-0.26	-1.04
PR2	192	4.27	1.53	-0.94	-0.03
PR3	192	2.15	1.38	1.13	0.39
PR4	192	3.78	1.57	-0.27	-0.9
PR5	192	3.7	1.45	-0.25	-0.75
PR6	192	2.87	1.53	0.35	-1.00
PR7	192	3.3	1.61	0.16	-1.15
PR8	192	3.38	1.56	-0.10	-1.14
PR9	192	2.81	1.64	0.52	-0.97
TG1	192	1.85	1.10	1.18	0.59
TG2	192	2.52	1.46	0.68	-0.61
TG12	192	2.07	1.13	0.95	0.24
TG4	192	2.53	1.38	0.67	-0.41
TG5	192	2.03	1.1	1.08	0.75
TG6	192	2.8	1.47	0.36	-0.87
TG7	192	1.97	1.12	1.04	0.23
SRC1	192	1.83	1.2	1.60	2.04
SRC2	192	1.93	1.24	1.33	0.93
SRC3	192	1.69	1.00	1.72	3.05

Note. Labels of items are shown in Table 4.1. Nine respondents did not answer the current age question. Four respondents did not answer the years' experience question.

The standard deviation scores are all similar, which is acceptable. For all items except SRC3, the skewness and kurtosis scores predominately fall close to 0, which also indicates acceptability (Field, 2009). The data for current education and highest education are displayed later.

Table 4.2 displays respondent's playing experience. Respondents were instructed to indicate 2012 as year of debut, if they were yet to debut upon completion of the

questionnaire. Those who indicated 2012 on this variable are listed as having zero years of experience in Table 4.2

Table 4.2

Respondent's Playing Experience

Years' Experience	Rugby Union		Rugby League	
	n	Percent	*n*	Percent
0	22	26.5	5	4.6
1	11	13.3	10	9.2
2	8	9.6	8	7.3
3	15	18.1	11	10.1
4	9	10.8	5	4.6
5	1	1.2	5	4.6
6	4	4.8	8	7.3
7	2	2.4	7	6.4
8	2	2.4	12	11.0
9	4	4.8	17	15.6
11	1	1.2	12	11.0
12	0	.0	4	3.7
13	0	.0	2	1.8
14	0	.0	1	.9
15	1	1.2	1	.9
Total	80	96.4	108	99.1
Missing	3	3.6	1	.9
Total	83	100.0	109	100.0

Note. Rugby union respondents mean experience was 2.86 years (SD = 3.04). Rugby league respondents mean experience was 6.16 years (SD = 3.57).

Table 4.3 shows the ages of respondents from both codes. The mean age of the sample was 26.08 years (*SD* = 3.23). On average, rugby league respondents (*M* = 26.54, *SD* = 3.19) were approximately one year older than rugby union respondents (*M* = 25.48, *SD* = 3.18).

Table 4.3

Respondent's Age

Age	Rugby Union		Rugby League	
	n	Percent	*n*	Percent
20	2	2.4	1	.9
21	7	8.4	5	4.6
22	5	6.0	7	6.4
23	6	7.2	13	11.9
24	12	14.5	8	7.3
25	13	15.7	3	2.8
26	13	15.7	7	6.4
27	5	6.0	12	11.0
28	2	2.4	13	11.9
29	2	2.4	16	14.7
30	6	7.2	9	8.3
31	4	4.8	5	4.6
32	2	2.4	3	2.8
33	0	.0	0	.0
34	0	.0	1	.9
35	1	1.2	0	.0
Total	80	96.4	103	94.5
Missing	3	3.6	6	5.5
Total	83	100.0	109	100.0

Note. Rugby union respondent's mean age was 25.48 (*SD* = 3.18). Rugby league respondent's mean age was 26.45 (*SD* = 3.19).

Across both samples, 15.6% of participants indicated the highest level of education reached was year 10/ 5th form (*n* = 30). A greater proportion of participants (56.3%) finished their education in year 13/ upper 6th form (*n* = 108). 6.3% of participants gained a trade certificate (*n* = 12), 11.5% responded their highest attained education level was a diploma (*n* = 22), 9.9% had attained a degree (*n* = 19) and 0.5% had attained a post graduate degree (*n* = 1). A presentation of the complete set of rugby union and rugby league respondent's answers for their highest level of education attained is provided in Table 4.4

Table 4.4

Respondent's Highest Education Level

Highest Education	Rugby Union		Rugby League	
	n	Percent	*n*	Percent
Year10/5th Form	11	13.3	19	17.4
Year 12/ Upper 6th	45	54.2	63	57.8
Trade Certificate	6	7.2	6	5.5
Diploma	7	8.4	15	13.8
Degree	13	15.7	6	5.5
Post Graduate Degree	1	1.2	0	0
Total	83	100	109	100

Across both codes, 45.3% of participants were currently not involved in education or employment activity (*n* = 87). 19.3% were in the process of gaining a trade certificate (*n* = 37). 13% were studying for a diploma (*n* = 25), 17.7% were studying for a degree (*n* = 34), 2.6% were studying for a post graduate degree (*n* = 5) and 2.1% gave no answer to this question (*n* = 4). Table 4.5 displays respondent's current education and training activity, separated by code.

Table 4.5

Respondent's Current Education or Training Activity

Current Education or Training	Rugby Union		Rugby League	
	n	Percent	*n*	Percent
No Current Activity	45	54.2	42	38.5
Trade Certificate	7	8.4	30	27.5
Diploma	8	9.6	17	15.6
Degree	16	19.3	18	16.5
Post Graduate Degree	3	3.6	2	1.8
No Answer	4	4.8	0	0
Total	83	100	109	100

Table 4.6 displays respondent's current work activity outside of the NRL or NZRU contractual commitments, again, separated by code. 15.6% of participants indicated they were currently involved in formal work activities outside their NRL or Super Rugby contracts (*n* = 30), 83.9% answered they were currently not involved in any work activity (*n* = 161) and One individual failed to give a response to this question.

Table 4.6

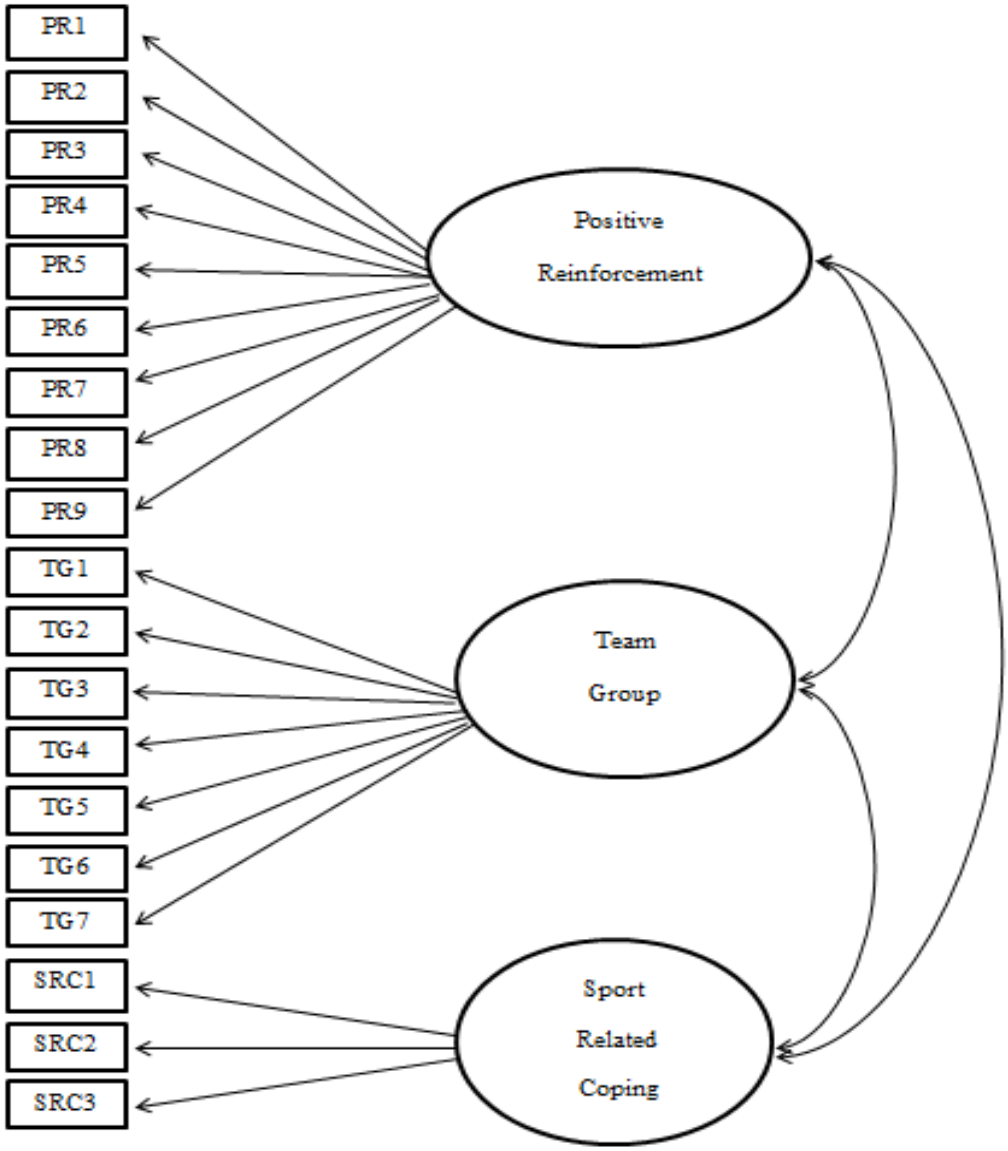
Current Employment Activity

Currently Working	Rugby Union		Rugby League	
	Frequency	Percent	Frequency	Percent
Working	14	16.9	16	14.7
Not Working	68	81.9	93	85.3
No Answer	1	1.2	0	0
Total	83	100.0	109	100.0

4.3 Confirmatory Factor Analysis

The initial CFA (Figure 4.1) was premised upon the 19 item, 3-factor structure developed in previous research (Martens et al., 2005; Martens et al., 2008). The assumption of multivariate normality was violated, with the skewness (532.37) and kurtosis (926.29) scores both significant ($p < .05$).

Figure 4.1. Initial Confirmatory Factor Analysis.



Note: Error terms are not depicted.

The data did not fit the hypothesised model well. (χ^2 = 300.99, *df* =149 p < .01). The RMSEA was high at 0.10, CFI was low at .81, TLI was low at .78, and SRMR was high at 0.09.

The next step was to examine the items individually. This step was performed in order to identify the sources of poor model fit. The items which displayed low factor loadings and cross loading through MPlus modification indices (Table 4.7) were examined and, if deemed to not affect the integrity of the factor, eliminated. Table 4.7 displays the psychometric statistics of the initial CFA. The noteworthy features of Table 4.7 are that the AVE scores are below .50 for all three factors. The CR results for the items PR and TG are acceptable, but the CR result for SRC is low. Following Table 4.7, Table 4.8 displays the correlations among latent constructs of the initial CFA.

Table 4.7

Initial AVE and CR Results

Item	Factor Loading	AVE	Construct Reliability
PR1	0.67		
PR2	0.66		
PR3	0.68		
PR4	0.84		
PR5	0.65	0.49	0.89
PR6	0.76		
PR7	0.79		
PR8	0.77		
PR9	0.42		
TG1	0.48		
TG2	0.63		
TG3	0.57		
TG4	0.74	0.41	0.83
TG5	0.69		
TG6	0.68		
TG7	0.65		
SRC1	0.70		
SRC2	0.77	0.36	0.54
SRC3	0.02		

Table 4.8

Correlations Among Latent Constructs After Initial CFA

	2	3
1. Positive Reinforcement	0.80	0.48
2. Team/Group		0.69
3. Sport Related Coping		

Note: All three correlations are statistically significant ($p < .05$).

After the initial CFA, PR and TG correlated highly at 0.80, as did TG and SRC at 0.69. This result means the PR and TG factors have items which allude to the same notion, as do the TG and SRC factors.

After the first CFA, 7 items were discarded for various reasons. Items PR9 (0.42), TG1 (0.48), TG3 (0.57) and SRC3 (0.02) were removed because of their low factor loading. Items

PR9 and TG7 were removed for cross loading on other latent factors. Items PR7 and PR2 were removed for being highly correlated with other items measuring PR motives. This was determined by examining modification indices. All items removed were carefully examined individually, and as part of the wider group of items, to ensure the meaning of the factor was not compromised by their removal.

Next, a second model without the aforementioned 7 items was estimated. The fit indices suggested an improvement (χ^2 = 65.10 df = 51, p = 0.9). The RMSEA score of .05 and the SRMR score of .06 were under their respective thresholds. CFI was .97 and TLI was .96, both providing further indication of model fit. After respecifying the model, the fit can be considered very good. Table 4.9 displays the factor loading, AVE and CR results for the second CFA.

Table 4.9

2nd Run AVE and CR results

Item	Factor Loading	AVE	Construct Reliability
PR1	0.67	0.53	0.87
PR3	0.67		
PR4	0.85		
PR5	0.64		
PR6	0.74		
PR8	0.78		
TG2	0.62	0.49	0.79
TG4	0.76		
TG5	0.72		
TG6	0.7		
SRC1	0.74	0.54	0.7
SRC2	0.73		

Compared to the initial CFA, AVE values are considerably improved, and although the TG factor AVE score is technically below the benchmark of .50, it was very close at .49.

The SRC CR result was improved with the subtraction of item SRC3, taking the value from 0.54 to 0.70. Table 4.10 displays the results for the correlations among latent constructs after the second CFA.

Table 4.10

Correlations Among Latent Constructs After 2nd Run of CFA

	2	3
1. Positive Reinforcement	0.75	0.49
2. Team/Group		0.56
3. Sport Related Coping		

Note: All three correlations are statistically significant ($p < .05$).

The two largest correlations between constructs decreased after model respecification. PR and TG went down to 0.75, while TG and SRC decreased to 0.56. This indicates increased discriminant validity from the first model to the second, meaning that respondents appear to be differentiating the three proposed motive dimensions.

After the second CFA, a further three items were removed for the specification of what turned out to be the third and final model. Items PR1 and PR6 were removed principally in the interest of creating a parsimonious scale, whilst not destroying the notion of positive reinforcement. Before removing the two PR items, a careful examination of the inherent meaning of the items and the factor as a whole took place. It was determined that the underlying meaning of the PR factor would not be compromised by removing the two items Similarly, item TG2 was removed to increase model fit whilst also preserving the notion of Team/Group. After the third CFA, the fit indices suggested further improvement in model fit ($\chi^2 = 29.95$ $df = 24$, $p = 0.19$). In addition, other fit indices including RMSEA (.05), SRMR (.05), CFI (.98) and TLI (.97) were further signs of excellent model fit.

Table 4.11 displays the AVE and CR results after the third CFA. All three AVE scores are above the 0.5 bench mark, and the CR results are all acceptable.

Table 4.11

3rd Run AVE and CR Results

Item	Factor Loading	AVE	Construct Reliability
PR3	0.66	0.55	0.83
PR4	0.83		
PR5	0.66		
PR8	0.79		
TG4	0.72	0.51	0.75
TG5	0.77		
TG6	0.64		
SRC1	0.78	0.54	0.7
SRC2	0.68		

Table 4.12 displays the correlations among latent constructs after the third CFA. The correlation between PR and TG rose slightly, as did the correlation between TG and SRC; overall, these results are a good indication of discriminant validity. The good result is due to the fact that the correlation is neither too high nor too low. The result should not be too highly correlated because the factors theoretically measure different motives, however they should not be too low because the factors taken together are meant to measure a broader, higher-order construct; sport-related reasons for drinking.

Table 4.12

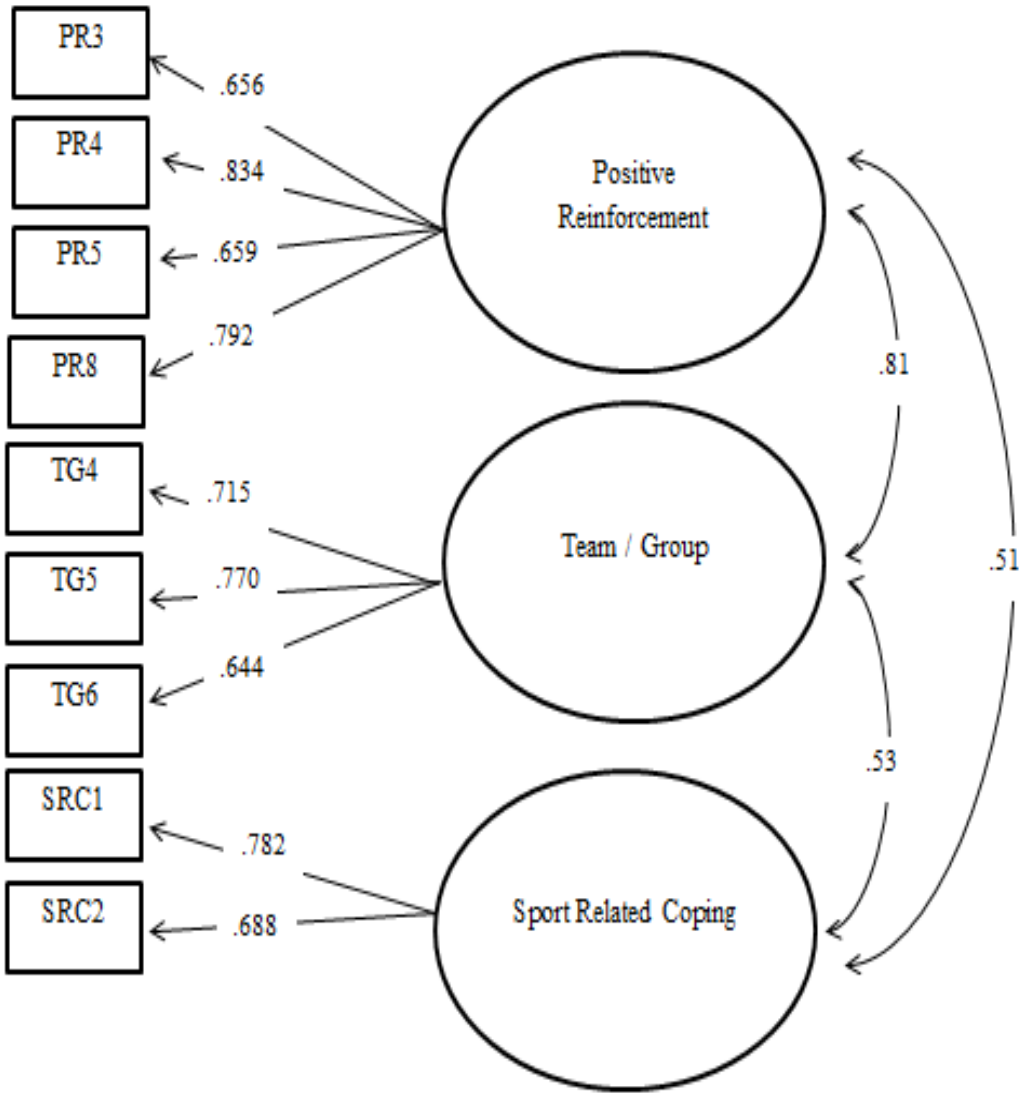
Correlations Among Latent Constructs After 3rd Run of CFA

	2	3
1. Positive Reinforcement	0.81	0.51
2. Team/Group		0.53
3. Sport Related Coping		

Note: All three correlations are statistically significant ($p < .05$).

After the third CFA, a three factor, nine-item scale was adopted for use in subsequent analyses (Refer Figure 4.2).

Figure 4.2 Final Confirmatory Factor Analysis with Final Factor Loadings



Note: Error terms are not depicted. All three correlations between factors are statistically significant ($p < .05$).

The analytical processes that lead to finalisation of this scale were based on the results of statistical testing and considered the wider meaning of the scale factors. The items which were removed were all taken away for their low loading results. However, discretion was

also exercised to ensure that their removal did not impact on the meaning of the factor – positive reinforcement, team and group pressure or sport related coping.

4.4 Mean Difference Testing

The next stage in the analytical process used the results of the CFA, discussed above, to assist in the exploration of the research questions. The initial objective of this research project was that players who were currently involved in education or employment activity away from their Super Rugby or NRL commitments would have different SRDM to those players who were not. As the project evolved a further objective emerged, which was the opportunity to compare the rugby union and league groups and examine if there were differences in the SRDM between both sports.

Composite variables were created based on the results of CFA. A mean score was calculated in SPSS from the best performing items in each factor (PR3, PR4, PR5, PR8; TG4, TG5, TG6; SRC1, SRC2).

First, *t*-tests were conducted to explore any potential differences between league and union respondents on the three ADS factors, in order to identify differences of respondents SRDM, if any, dependant on what game they played. Mean scores are presented in Table 4.13. There was a statistically significant difference between the league and union subsamples for the PR composite variable *(*$t(190) = -3.22$, $p < .01$) and the TG composite variable ($t(190) = -2.71$, $p < 01$). There was no significant difference for the SRC composite variable ($t(190) = .021$, $p = .983$). The effect size for the PR composite variable mean differences is -.46, which is close to medium. The effect size for the TG composite variable mean difference is -.39, which is also close to medium (Cohen, 1998). These results indicate that rugby league and union players had statistically significant differences in their positive reinforcement and team / group drinking motives, but not their sport related coping drinking

motives. The rugby union agreed more strongly with PR and TG motive statements than their league counterparts. In order create usable groups for mean difference testing, the smallest group based on educational attainment (i.e., post graduate degree) was combined with the adjacent group of those that earned a bachelor's degree.

Table 4.13

Mean Scores by Playing Code for ADS Composite Variables

	Playing Code	*n*	Mean	Std. Deviation
Positive Reinforcement	League	109	3.02	1.14
	Union	83	3.55	1.15
Team / Group	League	109	2.28	0.99
	Union	83	2.68	1.06
Sport Related Coping	League	109	1.88	1.13
	Union	83	1.88	1.04

For the remainder of the analysis, the participants are no longer differentiated by playing code. The next set of tests explored differences between respondents who were currently working or currently not working. These mean scores are presented in Table 4.14. No statistically significant difference for the PR composite variable ($t(189) = -1.48$, $p = .14$), the TG composite variable ($t(189) = -1.49$, $p = .14$), and for the SRC composite variable ($t(189) = -.98$, $p = .327$) were identified. This means there were no differences in respondent's sport related drinking motives based on whether they were working externally from their professional sporting contracts or not.

Table 4.14

Mean Scores for Current Work Status for ADS Composite Variables

	Current Work	*n*	Mean	Std. Deviation	Std. Error Mean
Positive Reinforcement	Currently Working	30	2.95	1.05	0.19
	Currently NOT working	161	3.29	1.19	0.09
Team / Group	Currently Working	30	2.19	0.87	0.16
	Currently NOT working	161	2.49	1.06	0.08
Sport Related Coping	Currently Working	30	1.70	0.94	0.17
	Currently NOT working	161	1.91	1.11	0.09

ANOVA was used to explore research questions involving a categorical independent variable and a continuous dependent variable. The first such analysis featured the educational achievement variable as the independent. Table 4.15 is a provision of motive composite variable mean scores based on educational achievement. No statistically significant difference for PR composite variable emerged. ($F(4,187) = .55$ $p = .70$), the TG composite variable ($F(4,187) = 2.21$, $p = .07$), and the SRC composite variable ($F(4,187) = 1.24$, $p = .29$) were evident. This means there is no significant relationship between respondent's highest education level and their SRDM.

Table 4.15

Mean Scores for Highest Education Level Achieved for ADS Composite Variables

Highest Education	*n*	Positive Reinforcement	Team / Group	Sport Related Coping
Year10/ 5th Form	30	3.15	2.12	1.62
Year12/ Upper 6th Form	108	3.22	2.44	1.97
Trade Certificate	12	3.50	2.78	2.25
Diploma	22	3.15	2.38	1.75
Degree	20	3.54	2.93	1.68
Total	192	3.25	2.45	1.88

While it was of interest to explore the motive variables based on highest educational attainment of the athletes, it was also of interest to see whether an individual's current educational involvement was a significant factor. Table 4.16 displays the mean scores for the composite variables by respondents' current education activity. No statistically significant differences for the PR composite variable ($F(5,186) = .79$, $p = .56$), the TG composite variable ($F(5,186) = .88$, $p = .49$), and the SRC composite variable ($F(5,186) = .72$, $p = .61$) were identified. The conclusion offered is that the respondent's SRDM was unaffected by their current education activity.

Table 4.16

Mean Scores for Current Education Activity for ADS Composite Variables

Current Education Activity	*n*	Positive Reinforcement	Team / Group	Sport Related Coping
No Current Activity	87	3.40	2.54	1.97
Trade Certificate	37	3.07	2.27	1.99
Diploma	25	3.06	2.17	1.62
Degree	34	3.15	2.60	1.82
Post Grad Degree	5	3.20	2.67	1.40
No Answer	4	3.75	2.50	1.63
Total	192	3.25	2.45	1.88

Table 4.17 displays the mean scores on the ADS composite variables by age. In order to test this relationship, bivariate correlations were run for each of the 3 composite variables with the age variable. The correlation between age and PR is .01, between age and TG is .05 and between age and SRC is .08. All results are insignificant. The conclusion offered is that the respondent's age has no significant relationship with their SRDM.

Table 4.17

Mean Scores for Respondent's Age for ADS Composite Variables

Age	*n*	Positive Reinforcement	Team/ Group	Sport Related Coping
20	3	2.08	1.89	1.17
21	12	3.25	2.47	1.79
22	12	3.27	2.28	1.88
23	19	3.51	2.60	1.95
24	20	3.31	2.28	1.58
25	16	2.92	2.42	1.59
26	20	3.69	2.62	2.08
27	17	3.01	2.43	2.03
28	15	3.32	2.53	1.83
29	18	3.04	2.04	1.83
30	15	3.83	2.98	2.50
31	9	2.97	2.07	1.67
32	5	3.05	3.07	1.60
34	1	3.25	2.33	2.00
35	1	2.75	3.00	2.00
Total	183	3.27	2.45	1.87

Table 4.18 displays the mean scores for the ADS composite variables by respondent's years of experience. In order to test this relationship, bivariate correlations were run for each of the 3 composite variables with the playing experience variable. The correlation between experience and PR is -.12, between experience and TG is -.04 and experience and SRC is .08. All results are insignificant. The conclusion offered is that the respondent's experience level displayed no statistically significant relationship with their SRDM.

Table 4.18

Mean Scores for Respondent's Experience for ADS Composite Variables

Playing Experience	*n*	Positive Reinforcement	Team / Group	Sport Related Coping
0	27	3.23	2.57	1.63
1	21	3.74	2.89	1.86
2	16	3.45	2.08	1.72
3	26	3.27	2.44	1.87
4	14	3.43	2.52	2.29
5	6	2.58	2.11	1.58
6	12	3.25	2.39	1.88
7	9	3.19	2.3	2.28
8	14	3.3	2.33	2.39
9	21	3.11	2.6	1.74
10	12	3.15	2.25	2.13
11	5	3.1	2.67	1.8
12	2	2.5	3	1.5
13	1	2	1.33	1
14	1	3.25	2.33	2
15	1	2.75	3	2
Total	188	3.27	2.47	1.89

In the previous analyses, none of the independent variables (current external work status, highest education level achieved, current education activity, age and experience level) appeared to have made any significant difference to respondent's answers to the ADS variables. It was therefore decided to recode the variables into relatively larger groups in an attempt to delve deeper into the hypothesised relationships. New variables were created for respondent's age, playing experience, highest education level achieved and current education or training activity. For age, the variable was recoded into under 23, 24 to 26 and 27+ categories. The mean scores for the new age group variable are displayed in Table 4.19. Again, no significant differences for the PR composite variable, ($F(2,180) = .15$, $p = .86$), the TG composite variable ($F(2,180) = .02$, $p = .98$), and the SRC composite variable ($F(2,182) =$

.69, $p = .50$) were identified. These results show that, even with the recoded age variable, age does not appear to be associated with the respondent's SRDM.

Table 4.19

Mean Scores for Recoded Age Groups for ADS Composite Variables

Age	*n*	Positive Reinforcement	Team / Group	Sport Related Coping
23 and Under	46	3.29	2.43	1.84
24 to 26	56	3.33	2.44	1.76
27+	81	3.23	2.47	1.97
Total	183	3.27	2.45	1.87

Table 4.20 displays the results of the mean scores for the experience variables. The experience variables were recoded into 0 or 1 year experience, 2 to 4 years' experience and 5+ years' experience. Again, even after recoding, the results were all statistically insignificant - PR composite variable ($F(2,185) = 1.60$, $p = .20$), TG composite variable, $F(2,185) = 1.75$, $p = .18$) and the SRC composite variable ($F(2,185) = .75$, $p = .48$). This means that there appears to be no significant relationship between player's experience and SRDM.

Table 4.20

Mean Scores for Recoded Experience Groups for ADS Composite Variables

Playing Experience	*n*	Positive Reinforcement	Team / Group	Sport Related Coping
0 or 1 year experience	48	3.45	2.71	1.73
2 to 4 years' experience	56	3.36	2.36	1.93
5+ years' experience	84	3.11	2.41	1.96
Total	188	3.27	2.47	1.89

Table 4.21 displays the mean scores for the highest education variable. The highest education variables were recoded into two categories – high school and higher education. Again, no significant differences were identified – (PR composite variable ($t(190) = -.90$, $p = .83$), TG composite variable ($t(190) = -1.84$, $p = .78$), and the SRC composite variable ($t(190) = .35$, $p = .09$). These results show that players who finished a higher level of education than those who have finished educating themselves after high school have no statistically significant differences in their SRDM.

Table 4.21

Mean Scores for Dichotomous Highest Education Variables for ADS Composite Variables

	Education	*n*	Mean	Std. Deviation
Positive Reinforcement	High School	138	3.20	1.18
	Higher Education	54	3.37	1.16
Team / Group	High School	138	2.37	1.04
	Higher Education	54	2.67	1.02
Sport Related Coping	High School	138	1.89	1.15
	Higher Education	54	1.83	0.92

Table 4.22 displays the mean scores for the current education variables. The current education variables were recoded into two categories – currently engaging in education or training activity and currently not engaging in education or training. A statistically significant difference was identified for the PR composite variable ($t(190) = 1.87$, $p < .05$). However, the differences for the TG composite variable ($t(190) = 1.08$, $p = .13$) and the SRC composite variable ($t(190) = .88$, $p = .44$) were both statistically insignificant. These results mean that players not involved in current education were more likely to drink more for positive reinforcement motives than players who were involved in current education activity.

Table 4.22

Mean Scores for Dichotomous Current Education Variables for ADS Composite Variables

	Education	*n*	Mean	Std. Deviation
Positive Reinforcement	No Current Education	91	3.41	1.30
	Currently Being Educated	101	3.10	1.03
Team / Group	No Current Education	91	2.54	1.08
	Currently Being Educated	101	2.38	1.00
Sport Related Coping	No Current Education	91	1.95	1.14
	Currently Being Educated	101	1.81	1.04

4.5 Results Summary

The ADS (Martens et al, 2005) is a three factor, 19-item scale that has been used to explore the SRDM of collegiate athletes. The preceding content was a provision of results of the current exploration of the ADS in the context of professional footballers in Australasia. After analysing NRL and NZRU player's responses from this scale, a CFA sequence refined the ADS to a three factor, nine-item scale. Seven items were removed after the first CFA. Four items (PR9, TG1, TG3 and SRC3) were removed due to low factor loadings, two items (PR9, TG7) were removed for cross loading of latent factors and two items (PR7, PR2) were removed for displaying highly correlated indicators. After the second CFA, PR1, PR6 and TG2 were removed in the interest of creating a parsimonious scale, whilst not destroying the notions of positive reinforcement and team/group as factors. Although after the second CFA

there were still significant correlations between factors (Refer Table 4.12), the correlations are not so high as to indicate that the factors are not distinct from one another. The redefined ADS was then used to measure the three notions of positive reinforcement, team or group pressure and sport-related coping for sport-related drinking reasons in the context of professional rugby sports in Australasia.

Three significant results were uncovered in the subsequent analysis of the motive variables in conjunction with the demographic and behavioural variables. Rugby union players agreed more strongly with positive reinforcement and team/ group motive statements than their rugby league counterparts. The other significant result is displayed in Table 4.22, which shows that players who were involved in current education activity cited positive reinforcement as less of a sport-related drinking motive than players who were not currently participating in education activity.

The three statistically significant results that emerged after this analysis did support the initial objectives which was to identify if players who were currently involved in education or employment activity had different sport-related drinking motives than athletes who were not currently being educated or employed away from their sports contracts. Whilst the results did satisfy the initial objectives, only after recoding respondent's answers into 'currently being educated' and 'no current education' (Refer Table 4.22) did a statistically significant result emerge. In all testing previous to this, there was very little statistical difference in the SRDM between athletes who were currently working or in education activity and those who were not.

Chapter 5 – Discussion

This chapter discusses the major findings of the research project. As previously, stated the research project focuses on the scale development work on the ADS and the impact of education and employment on the sport-related drinking motives (SRDM) of NRL and NZRU players. Then the target audience for the project outcomes and results along with implications for practitioners is covered. This will consider who will benefit from the use of the research outcomes. Following on, the implications for researchers in this field will be discussed. Alternative explanations for the results which emerged in this research project will be then examined and the chapter will conclude with recommendations for potential improvements in the research design, questions that need to be considered in order to further develop this body of research and a discussion of the limitations of this study.

5.1 Major Findings

This research project was performed with four major objectives in mind. The first was to test the validity and reliability of the ADS in the context of professional rugby league and rugby union in Australia and New Zealand. The second was to explain the SRDM of professional footballers. The third was to identify differences in the SRDM of professional rugby union players and rugby league players. The final objective was identifying the impact of education and employment history and current employment activity on the athletes SRDM. Previous use of the ADS was restricted to collegiate athletes and had not explored the association between SRDM, education and employment history and current activity.

There were a number of key findings. First, the original ADS was not well suited to the context of professional football. Five items were re-worded slightly to make the ADS more relevant to the NRL and NZRU players who were the respondents. Previously the scale had only been used in a collegiate context, as opposed to the professional environment in

which it was applied in this study. After careful re-wording, the study produced a valid and reliable scale incorporating the original three factors, but with the number of items reduced from 19 to nine (Refer Figure 4.2). Each item that was eliminated was first carefully examined to ensure its removal would not compromise the individual factor's integrity or the scale as measurement tool. For example, it was determined that the removal of item PR9 (I drink because I believe in a 'work hard, play hard' lifestyle) was theoretically justifiable because the inherent meaning of the removed item (positive reinforcement) was still present through item PR4 (Because I work so hard at my sport, I should be able to drink to have a good time). The three factors (i.e. positive reinforcement (PR), team/ group (TG) and sport related coping (SRC)) were retained. Although they correlated highly after the third and final CFA (Refer Table 4.12), the correlations are not so high as to make the factors interpretable as measuring the same notion.

The results displayed in Table 4.13 are statistically significant, and are the focus of subsequent discussion. When considered broadly, the results suggest that rugby union players are more driven to drink by team/group and positive reinforcement motives than their rugby league counterparts. Whilst statistically this seems to indicate rugby union players drink more for celebratory reasons and to feel part of their group, descriptively, the results may simply suggest that out of the three motives, the items that were given representing positive reinforcement and team/group are the items that appeal the most to the players. That is, out of the nineteen items that were the ADS questions, the players identified more strongly with the items which alluded to drinking for positive reinforcement and team/ group reasons. The respondents gave their answer on a six point Likert scale. The composite mean scores displayed above Table 4.13 for the rugby union players are 3.55 for PR and 2.68 for TG, which are around the half-way mark on the scale.

The next analytical test must also be discussed, because it exposes a possible theoretical fault in the scale as it was delivered in this study. The item in the questionnaire that examined respondents current work activity away from their rugby union or league responsibilities (Refer Table 4.14) may have supplied a skewed result. The result that saw no significant differences between groups (currently working and currently NOT working) may have been affected by the different sizes of said groups. The "currently NOT working group" is over five times larger than the group that is currently working, which may have impacted on the data. After reviewing the question posed to the respondents, a further note could be made about these results. The respondents were asked about a separate, non-sport related factor (in this case, external employment) and this was analysed against their SRDM. The two are entirely unrelated, and as such, this may be why no statistically significant result emerged. Future theorising should consider further the extent to which it is realistic to expect non-sport related employment to impact on SRDM.

The next two tests, which analysed respondent's highest level of education achieved and current education activity (Tables 4.15 and 4.16) support the writers of previous literature, who have mixed views on employment and education's effect on drinking motives. In previous studies, it has been demonstrated that striving to achieve a higher education can lead to a reduction in alcohol consumption and associated negative outcomes (Palfai & Ralston, 2011). Conversely, previous research has also found that higher levels of education, and a career that requires a high level of education can also lead to increased alcohol consumption (Bingham, Shope, & Tang, 2005; Marchland, 2008).

The next results were that no statistically significant or descriptive difference between the scores for any of the SRDM, regardless of age or experience, were identified (Refer Table 4.17 and 4.18). Descriptively, it appears the veterans and rookies cite similar scores for their positive reinforcement, team/ group and SRDM. Again, this result is a major finding in this

study. If it has been assumed in the past that players of different ages and experience have different reasons for drinking alcohol, a range of alcohol management strategies may have been administered, depending on how old a player was, or how long he had been in the game. This result supports the argument that a 'blanket' alcohol management strategy may be effective in the future, with one consistent message being administered to all players. This approach would streamline the alcohol consumption component of player welfare management, saving time and money in the process.

The final noteworthy result was that players who are currently involved in education activity cite positive reinforcement significantly less than players not involved in education (Refer Table 4.22). Simply, players who were involved in external education cited celebratory (i.e. PR) reasons significantly less than their peers who were not involved in education activity. This result suggests that education provides a degree of positive reinforcement to players who are involved in it to some extent. That the other two factors did not exhibit any difference makes this result more significant. This is the final major result of this study, and one that contradicts results previously discussed, in that is appears that current education activity appears to have an impact on SRDM. As such, this result must be carefully examined. As discussed previously, in the first analytical process (Refer Table 4.16) the effect player's current education activity had on their ADS mean scores was not statistically significant. Only after being recoded into larger groups, so approximately half the sample was in each group being analysed, did the statistically significant result emerge.

This result goes some way to support Palfai & Ralston's (2011) argument that pursuit of higher education can lead to a reduction in alcohol consumption and associate negative outcomes, but only if it is assumed that the reduced levels of the PR drinking motive leads to a decrease in alcohol consumption. Regardless, the result appears to advocate that being involved in current education activity of some kind does impact SRDM. This is counter to the

argument presented when discussing the results displayed in Tables 4.16, where it is noted that current education activity does not appear to be a major factor in the respondents SRDM, and this subsequent result may be a factor in future strategy generation by administrators from the NZRU and NRL.

5.2 Target Audience

Many organisations may be interested in the results of this research project. Professional rugby league bodies, such as Australasia's NRL and the United Kingdom's Super League may take note of the findings in order to devise a future strategy around their substance use and abuse policy, along with their education and welfare policies. Similarly, professional rugby union governing bodies such as the International Rugby Board (IRB) and its associated regional unions may also be interested in the findings discussed in this paper.

Moving away from the two rugby codes explicitly explored in this project, any professional sport governing body may find value in these results. In particular, sports played in a similar physically confrontational manner by players demographically similar to those involved in the current project. For example, American football, ice hockey and boxing may use these findings as a guide for future strategic decisions. Other groups with potential interest in these results may be high school sport programs, collegiate sport programs, amateur or semi-professional sport programs, government agencies concerned with youth substance use and abuse, and education and training providers

All of the above may find some value in the results of this research project. It may be helpful in providing answers to existing concerns, such as what motivates their athletes or students to drink alcohol and help provide direction for future strategy and policy making.

5.3 Implications for Future Research

This research provides many insights into the sport-related motives for alcohol use by professional athletes, but also leaves room for future improvements to the research design, data collection and analysis process. The sample size, whilst large enough for a thorough analytical process to take place, was limited. Increasing the size of a sample increases the likely precision of a sample and reduces sampling error (Bryman & Bell, 2007; Fowler, 1993). Put simply, the bigger the sample, the more representative of the population it is likely to be (Bryman & Bell, 2007). The research would undoubtedly be strengthened with a higher response rate from the targeted athletes. The rugby union response rate of 56% was higher than the league response rate, which was just 32%. Previous literature gives mixed views on response rate acceptability. Previous studies generally agree that response rates of 50% are considered acceptable for internet surveys, whilst a responses rate of 60% or over is considered good (Pinsonneault & Kraemer, 1993; Crawford, Couper & Lamais, 2001; Truell, Bartlett & Alexander, 2002, Babbie, 1990). This means the rugby union response rate was acceptable, whereas the rugby league response rate was low. The method of collection could help the sample size. The rugby union survey was distributed and collected by hand in a time allocated for NZRPA associated activity. This meant the rugby union players were a captive audience and they could either complete the questionnaire or sit idly whilst the rest of the group did complete the questionnaire. The rugby league players, however, were asked to complete the questionnaire in their own private time, a fact that possibly explains the lower response rate. In future studies, a higher response rate would see a higher level of precision in the subsequent analysis.

There now exists opportunities for this scale to be used in different contexts. This project was only concerned with rugby union and league players in Australia and New Zealand. Factors which could alter the results are gender, age and region. Would the same

trends emerge in an English Netball competition – different country/culture, different type of sport, different gender - as what emerged in this project? Additionally, there is opportunity for questions about alcohol consumption to be added. It would be safe to assume some respondents to this questionnaire, as high performance professional athletes, would not drink alcohol, and as such, any answer they gave could skew the data. The data may be skewed because if the athletes don't drink alcohol, and are only provided with answerable options that are concerned with their alcohol consumption, they are forced to give an answer which is, by way of their abstinence from alcohol, a lie. Even if they choose the lowest motivation option, in this case, a 1 on the Likert scale, their answer will be analysed as a player who drinks and cites the given item very low as a SRDM. Future studies might include an option in the questionnaire to state if the respondent either does or does not drink alcohol.

The analysis and scale development work performed in this research project supports the original multidimensionality conceived by Martens et al. (2005). In the context of professional rugby union and rugby league players, SRDM can be defined in one of three categories – positive reinforcement, team/ group or sport related coping. This exercise in scale development adds weight to the strength of the ADS as an effective measurement tool.

As discussed in the major findings section, this study only examined the SRDM of the participants. There were no questions which examined the non-sport-related drinking motives or consumption patterns of the players. An analysis of these factors and identifying any trends which emerge would add significantly to the knowledge base. An analysis of consumption patterns would be particularly valuable. There is a major difference in the notion of why someone drinks (drinking motives) and how someone drinks (drinking patterns). This study has analysed the answers of a player who drinks once a year in the same manner as a player who drinks multiple times a week. Additional analysis of these factors would be invaluable to both researchers and practitioners.

An additional goal of this research project was to analyse the added questions regarding education history and current education and employment activity and examine whether any significant trends emerged between these responses and the player's ADS responses. As discussed in the major findings, the significant result was players who were involved in current education activity cited positive reinforcement less as a SRDM than those who were not currently being educated. This could be interpreted as meaning the players involved in educational pursuits were gaining some degree of positive reinforcement from their study the other players were not. There is an opportunity to further develop the ADS, both in an amateur and professional context, by taking in the notion of 'dual careers' (Philp & Wheatley, 2011; Darrah, 2007). It can be argued that in the initial development of the ADS, all participants had dual careers. They were athletes, albeit amateur, and students. In this study, the questionnaire included items which asked about their sporting career and external employment, making those who answered that they were involved in some kind of external activity (Refer Table 4.14 and 4.16) holders of dual careers. In future scale development work of the ADS, literature that examines dual careers and the effect it has on those involved, may be reviewed and items that allude to the pressure involved in participating in dual careers included.

An opportunity lies in the continued development of the ADS. At this time, the ADS has been tested only in a collegiate setting in the United States, and in professional rugby union and rugby league in Australia and New Zealand. The ADS would continue to benefit from further development and refinement from testing in different competitions, both amateur and professional, in different regions of the world.

Opportunities are also present in further researching into professional rugby union and league players drinking motives. The results of this project indicate that there may not be a link between age, experience, education history and current employment activity and the

SRDM of these athletes. The only statistically significant result emerged in the current education activity area, and only once the categories had been refined into either ‘currently working’ or ‘currently not working’. There is scope to examine other variables in relation to the ADS, such as marital status, number of children, ethnicity and extended family composition to discover any discernible trends.

5.4 Implications for Practitioners

In considering the implications for practitioners, the results must be reviewed and the statistically significant results discussed. The first significant result saw rugby union players cite higher positive reinforcement and team/ group motives than league players, but were identical in their sport related coping responses (Refer Table 4.13). On the surface, this indicates rugby union players drink alcohol more for sport related reasons than rugby league players. This could simply be attributed to the fact that as the rugby union sample were younger and less experienced, they were at different developmental stages of their lives, and as such, drank more alcohol in general, regardless of their motives. As generally older men, the rugby league athletes may already have wives and children, and place more importance on other activities away from their sport than drinking. It could be representative of the fact that the rugby league sample was taken from Australia and New Zealand, whereas the rugby union data was gathered from New Zealand only, and the difference could be nationality based – different countries consume alcohol in different ways and for different reasons.

Another explanation could be the underlying drinking culture of the different sports. Rugby union may have more of a ‘drinking culture’ than rugby league. A further alternate explanation for these results is that the sample from both rugby union and league may not have been a true representation of the overall population of the code. Rugby union, in particular, had many more players who were in their first or second year of playing

professionally, and if a true cross section of the code was obtained in the data gathering process, the result may have been different.

After recoding the data, a further statistically significant result emerged, with players who were currently involved in an educational activity of some kind citing positive reinforcement motives less than those players who were not currently involved in an educational activity. Again, there are a number of possible explanations for this result. Players who were currently involved in education may feel a higher sense of purpose and fulfilment in their lives away from the sports field, and therefore place less importance on celebrating sporting success. It may be as simple as a time constraint issue, with players involved in education activity not having as much free time as their teammates who aren't in education activities, and as such use the free time they do have to perform other tasks.

After reviewing the results, rugby union and league administrators must be content that very few significant trends emerged. These results now point the administrators in other directions to understand their athletes SRDM. This research project only questioned age, experience, education and employment history. There are many other potential reasons why athletes drink alcohol, and education and employment activity can now be eliminated as a significantly influential factor.

5.5 Limitations

The limitations of a study constrain the application or interpretation of the results. This section will discuss the limitations of this research project, and possible methods of increasing the precision of future studies undertaken in this theoretical area. A limitation of this study is identifying how important SRDM's in regard to an individual's overall drinking motives and opportunity for future research projects presents itself. Athletes drink for other reasons than as a way of celebrating and coping from wins and losses in their sport, and for

the reason of attempting to strengthen their team bonds. Regardless of the level of competition the athlete is involved in, it is naïve to assume the athlete is completely focused on their sport, all day every day. Other issues that occur in everyday life are possible motivators for athletes to drink, and as such an opportunity is present to identify and analyse these issues. Additionally, the notion that the participant's motives for drinking alcohol may not be sport related must also be considered, and drinking motives other than those which are considered sport related were not measured in this study.

Another limitation of this study is the possible bias that emerged because of the ages of respondents. Although the rugby league player's age spread was fairly representative of the population, the rugby union respondents were younger and less experienced (Refer Table 4.2 and 4.3). The younger rugby union players may have felt more obliged to complete the questionnaire than the older and more experienced players, who may often be confronted with requests for their time. In the author's own experience, in professional sporting environments, the younger players are usually more willing to give their own time to agree to requests like completing this questionnaire. Older, more experienced players can often be more apathetic, given they have been asked to give up their personal time on many occasions previously. A better representation of the entire population may have provided different results, and in fact may have meant the rugby union mean scores for SRDM were more closely aligned with the league players, resulting in there being no significantly different motives between codes. For improved accuracy in this area, an ideal scenario in future studies would be to have the same amount of respondents from each age and experience category in both codes, and then determine if the significant difference still exists.

A limitation that may have affected response rates was the method in which the questionnaire was distributed. It is possible that the online and hard copy distribution of the surveys may have influenced the results, in that the rugby union players had a set time in

which to complete their hard copy survey, and they completed the survey in a group environment, where the rugby league players did not. This may have led the responses to be rushed or not completed as carefully as the online version delivered to the rugby league players. Whilst consistency of methods would have been preferred, the researcher accepted the advice of the NZRPA CEO that hard copy distribution would be the most effective way to ensure a good response rate.

5.6 Conclusion

This study served four major purposes. The first was the continued development of the Martens et al. (2005) ADS, used for the first time in a professional context. The second objective was to identify the SRDM of professional rugby union players in New Zealand and rugby league players in Australia and New Zealand. The third objective was to identify differences in the SRDM of rugby union and league players. The final objective of this research project was to identify the impact level of education, current non sport employment, current education activity, age and experience had on the athlete's SRDM.

The first objective was achieved. The ADS was proven to be an effective measurement tool in the context of professional rugby union and rugby league. The scale development work performed in this study saw a more parsimonious ADS emerge, with what began as a three-factor, nineteen-item tool finish as a three-factor, 9-item measurement scale, with the fabric of the scale, that is, the inherent meaning behind each factor, remaining intact.

The second objective was achieved by gathering a sample of rugby union and league player's responses, and the analysis of the data, displayed in chapter 4 and discussed in chapter 5. The sample of athlete's responses in this study were consistent with previous applications of the ADS (Martens et al. 2005; Martens et al. 2008; Martens & Martin, 2010), where participants identified with positive reinforcement motives most prominently for their

reasons for drinking alcohol, followed by team/ group motives, followed by sport related coping motives. This lends weight to the argument that the ADS is a valid and reliable method of measuring athlete's SRDM.

The third objective was achieved, with the results displayed in Table 4.13. Rugby union players cited positive reinforcement and team/ group motives significantly higher than their rugby league counterparts, with their responses for the sport related coping motive similar.

The final objective was also achieved. After a thorough analysis of the data, there appears to be little evidence to link rugby union and league player's education history and current education and employment activity with their SRDM. Thorough ANAOVA and t testing procedures show only three statistically significant differences in the entire data set. The first two statistically significant results indicated a difference between rugby union and league players as groups and their reasons for sport-related drinking, which was not initially sought to be discovered in this study. The other significant result indicated higher citation of positive reinforcement motives by athletes who were currently not involved in education activity.

Whilst this research project has achieved all major purposes it aimed to, it also highlights areas which need further research. The ADS would benefit from continued development, in different contexts. When questioning athletes about their drinking motives, it would be of benefit to ask about consumption patterns alongside their SRDM. Additionally, to achieve an accurate depiction about what motivates athletes to drink alcohol, motives unrelated to sport must be thoroughly examined.

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Appendix A - NZ Rugby Participant Information Sheet and Questionnaire

An Invitation

My name is Michael Luck from the Faculty of Business and Law at Auckland University of Technology. I would like to invite you to take part in a survey investigating sport-related drinking motives of professional rugby players. Your involvement in the survey is entirely voluntary. Please note that withdrawing from the survey is only possible prior to submitting the online survey. This is because once submitted, I will have no way of identifying your survey responses.

What is the purpose of this survey?

The purpose of the study is to understand the sport-related drinking motives of professional rugby players.

How was I chosen for this invitation?

I am inviting all contracted NZRU players to take part in the survey.

What will happen in this survey?

You will be asked questions about your sport related drinking motives, employment and education background and some basic demographic information.

What are the benefits?

Little is known about the sport related drinking motives of professional footballers. Previous research on sport related drinking motives has utilized athletes from the North American collegiate system. Understanding this issue will assist the stakeholders of professional sports teams to develop programs that promote responsible alcohol consumption.

What are the discomforts and risks?

The discomforts and risks associated with this study are negligible. If you do not want to answer any question(s), you have the right to decline answering any question or you may choose to withdraw from the survey. Should the need arise, you can call your NZRPA

approved counselling service, or Alcoholics Anonymous on 0800 229 6757.

How will my privacy be protected?

The questionnaire is both anonymous (i.e. I do not know who you are) and confidential (i.e. I will not share the raw data with anybody outside the immediate research team). All data from these questions will be stored in a secure location at AUT and will be destroyed six years from now.

What are the costs of participating in this research?

The only cost involved in participating in this research is that of your time. This time commitment required is approximately 5 minutes.

What opportunity do I have to consider this invitation?

The survey will remain open for two weeks, and will close on Thursday, May 17, 2012. This survey may close earlier if target numbers are reached.

How do I agree to participate in this research?

Completing the survey is your agreement to be part of the research.

Will I receive feedback on the results of this research?

If you wish to. A copy of the results will be made available to the NZRPA.

What do I do if I have concerns about this research?

Any concerns regarding the nature of this project should be notified in the first instance to the Project Supervisor, Geoff Dickson geoff.dickson@aut.ac.nz, (+649) 921 9999 ext 7851.

Concerns regarding the conduct of the research should be notified to the Executive Secretary, AUTEC, Rosemary Godbold, ethics@aut.ac.nz , +921-9999 ext 6902.

Whom do I contact for further information about this research?

Project Supervisor Contact Details:

Geoff Dickson

School of Sport and Recreation

E: geoff.dickson@aut.ac.nz

P: +64 (0)9-921-9999 ext. 7851

Clicking on the next button at the bottom of this page will take you through to the survey.

Thanks.

. What is the highest level of education you achieved?

- [ ] Year 10/ 5th Form
- [ ] Year 13/ Upper 6th Form
- [ ] Trade Certificate
- [ ] Diploma
- [ ] Degree
- [ ] Post Graduate Degree (PGDip, Masters Degree)

2. If you are currently involved in a formal education or training program, which of the following best describes that program?

- [ ] Trade Certificate
- [ ] Diploma
- [ ] Degree
- [ ] Post Graduate Degree (Post Grad Dip, Masters Degree)

3. Do you currently work outside your NZRU contract commitments?

☐ Yes

☐ No

If Yes, how many hours per week?

4. What is your year of birth?

5. In what year was your Super Rugby debut? If yet to debut, please write 2012.

6. When drinking alcohol with teammates, it becomes a competition

Strongly Disagree Strongly Agree

1 2 3 4 5 6

7. Because I work so hard at my sport, I should be able to drink to have a good time

Strongly Disagree Strongly Agree

1 2 3 4 5 6

8. I drink to celebrate a victory

Strongly Disagree Strongly Agree

1 2 3 4 5 6

9. I get a rush out of becoming drunk

Strongly Disagree Strongly Agree

1 2 3 4 5 6

10. I drink to help me deal with poor performances

Strongly Disagree Strongly Agree

1 2 3 4 5 6

11. I feel pressure from my teammates to drink alcohol

Strongly Disagree Strongly Agree

1 2 3 4 5 6

12. Alcohol is an important part of my teams culture

Strongly Disagree Strongly Agree

1 2 3 4 5 6

13. If I've performed well, I feel like I can go out and drink a little more than usual

Strongly Disagree Strongly Agree

1 2 3 4 5 6

14. Winning or performing well is a good reason to go out and drink

Strongly Disagree Strongly Agree

1 2 3 4 5 6

15. I drink because I believe in a "work hard, play hard" lifestyle

Strongly Disagree Strongly Agree

1 2 3 4 5 6

16. I drink because it's part of the culture of being an athlete

Strongly Disagree Strongly Agree

1 2 3 4 5 6

17. I drink because it helps our team develop cohesion

Strongly Disagree Strongly Agree

1 2 3 4 5 6

18. I drink because my teammates expect me to drink with them

Strongly Disagree Strongly Agree

1 2 3 4 5 6

19. I tend to drink more when I'm not performing well on the field

Strongly Disagree Strongly Agree

1 2 3 4 5 6

20. I enjoy the feeling of getting drunk

Strongly Disagree Strongly Agree

1 2 3 4 5 6

21. I drink to have a good time with my teammates

Strongly Disagree Strongly Agree

1 2 3 4 5 6

22. I drink to deal with football related stress

Strongly Disagree Strongly Agree

1 2 3 4 5 6

23. I drink to "fit in" with my teammates

Strongly Disagree Strongly Agree

1 2 3 4 5 6

24. After a game, it is important for me to go out and celebrate with alcohol

Strongly Disagree Strongly Agree

1 2 3 4 5 6

If this survey has made you question your own alcohol use and you are concerned, please contact Alcoholics Anonymous (NZ) - 0800 229 6757

Appendix B - NRL Participant Information Sheet and Questionnaire

An Invitation

My name is Michael Luck from the Faculty of Business and Law at Auckland University of Technology. I would like to invite you to take part in a survey investigating sport-related drinking motives of professional rugby league players. Your involvement in the survey is entirely voluntary. Please note that withdrawing from the survey is only possible prior to submitting the online survey. This is because once submitted, I will have no way of identifying your survey responses.

What is the purpose of this survey?

The purpose of the study is to understand the sport-related drinking motives of professional rugby league players.

How was I chosen for this invitation?

I am inviting the top 25 players from all current NRL squads to participate in the study.

What will happen in this survey?

You will be asked questions about your sport related drinking motives, employment and education background and some basic demographic information.

What are the benefits?

Little is known about the sport related drinking motives of professional footballers. Previous research on sport related drinking motives has utilized athletes from the North American collegiate system. Understanding this issue will assist the stakeholders of professional sports teams to develop programs that promote responsible alcohol consumption.

What are the discomforts and risks?

The discomforts and risks associated with this study are negligible. If you do not want to answer any question(s), you have the right to decline answering any question or you may choose to withdraw from the survey. Should the need arise, you can also call the RLPA-

endorsed counselling service on 1300 360 364.

How will my privacy be protected?

The questionnaire is both anonymous (i.e. I do not know who you are) and confidential (i.e. I will not share the raw data with anybody outside the immediate research team). All data from these questions will be stored in a secure location at AUT and will be destroyed six years from now.

What are the costs of participating in this research?

The only cost involved in participating in this research is that of your time. This time commitment required is approximately 5 minutes.

What opportunity do I have to consider this invitation?

The survey will remain open for one month, and will close on Tuesday, May 1, 2012. This survey may close earlier if target numbers are reached.

How do I agree to participate in this research?

Completing the survey is your agreement to be part of the research.

Will I receive feedback on the results of this research?

If you wish to. A copy of the results will be made available to the NRL Players Association.

What do I do if I have concerns about this research?

Any concerns regarding the nature of this project should be notified in the first instance to the Project Supervisor, Geoff Dickson geoff.dickson@aut.ac.nz, (+649) 921 9999 ext 7851.

Concerns regarding the conduct of the research should be notified to the Executive Secretary, AUTEC, Rosemary Godbold, ethics@aut.ac.nz, +921-9999 ext 6902.

Whom do I contact for further information about this research?

Project Supervisor Contact Details:

Geoff Dickson

School of Sport and Recreation

E: geoff.dickson@aut.ac.nz

P: +64 (0)9-921-9999 ext. 7851

Clicking on the next button at the bottom of this page will take you through to the survey.

Thanks.

1. What is the highest level of education you achieved?

- [ ] Year 10/ 5th Form
- [ ] Year 13/ Upper 6th Form
- [ ] Trade Certificate
- [ ] Diploma
- [ ] Degree
- [ ] Post Graduate Degree (PGDip, Masters Degree)

2. If you are currently involved in a formal education or training program, which of the following best describes that program?

- [ ] Trade Certificate
- [ ] Diploma
- [ ] Degree
- [ ] Post Graduate Degree (Post Grad Dip, Masters Degree)

3. Do you currently work outside your NRL contract commitments?

☐ Yes

☐ No

If Yes, how many hours per week?

4. What is your year of birth?

5. In what year was your NRL debut? If yet to debut, please write 2012.

6. When drinking alcohol with teammates, it becomes a competition

Strongly Disagree Strongly Agree

1 2 3 4 5 6

7. Because I work so hard at my sport, I should be able to drink to have a good time

Strongly Disagree Strongly Agree

1 2 3 4 5 6

8. I drink to celebrate a victory

Strongly Disagree Strongly Agree

1 2 3 4 5 6

9. I get a rush out of becoming drunk

Strongly Disagree Strongly Agree

1 2 3 4 5 6

10. I drink to help me deal with poor performances

Strongly Disagree Strongly Agree

1 2 3 4 5 6

11. I feel pressure from my teammates to drink alcohol

Strongly Disagree Strongly Agree

1 2 3 4 5 6

12. Alcohol is an important part of my team's culture

Strongly Disagree Strongly Agree

1 2 3 4 5 6

13. If I've performed well, I feel like I can go out and drink a little more than usual

Strongly Disagree Strongly Agree

1 2 3 4 5 6

14. Winning or performing well is a good reason to go out and drink

Strongly Disagree Strongly Agree

1 2 3 4 5 6

15. I drink because I believe in a "work hard, play hard" lifestyle

Strongly Disagree Strongly Agree

1 2 3 4 5 6

16. I drink because it's part of the culture of being an athlete

Strongly Disagree Strongly Agree

1 2 3 4 5 6

17. I drink because it helps our team develop cohesion

Strongly Disagree Strongly Agree

1 2 3 4 5 6

18. I drink because my teammates expect me to drink with them

Strongly Disagree Strongly Agree

1 2 3 4 5 6

19. I tend to drink more when I'm not performing well on the field

Strongly Disagree Strongly Agree

1 2 3 4 5 6

20. I enjoy the feeling of getting drunk

Strongly Disagree Strongly Agree

1 2 3 4 5 6

21. I drink to have a good time with my teammates

Strongly Disagree Strongly Agree

1 2 3 4 5 6

22. I drink to deal with football related stress

Strongly Disagree Strongly Agree

1 2 3 4 5 6

23. I drink to "fit in" with my teammates

Strongly Disagree Strongly Agree

1 2 3 4 5 6

24. After a game, it is important for me to go out and celebrate with alcohol

Strongly Disagree Strongly Agree

1 2 3 4 5 6

If this survey has made you question your own alcohol use and you are concerned, please contact one of the following agencies:

RLPA endorsed counselling service - 1300 360 364 www.davcorp.com.au

OR

Alcoholics Anonymous (NZ) - 0800 229 6757

Alcoholics Anonymous (Aust) - 1300 22 22 22

MEMORANDUM

Auckland University of Technology Ethics Committee (AUTEC)

To: Geoff Dickson
From: **Dr Rosemary Godbold** Executive Secretary, AUTEC
Date: 19 March 2012
Subject: Ethics Application Number 12/58 **The impact of education and employment on the sport-related drinking motives of professional footballers: A study of national rugby league players.**

Dear Geoff

I am pleased to advise that the Auckland University of Technology Ethics Committee (AUTEC) approved your ethics application at their meeting on 12 March 2012, subject to the following conditions:

1. Revision of the response to section B.7 of the application which relates to all participants, not just Maori participants;

2. Revision of the response to section E.4 of the application which reflects on the potential of the questionnaire to trigger participants to consider their alcohol intake and information for participants about appropriate agencies if required;

3. Provision of a revised response to section F.3 of the application which reflects AUTEC's standard storage requirements. AUTEC normally requires that electronic data be downloaded onto an external storage device which is stored securely on AUT premises.

I request that you provide me with a written response to the points raised in these conditions at your earliest convenience, indicating either how you have satisfied these points or proposing an alternative approach. AUTEC also requires written evidence of any altered documents, such as Information Sheets, surveys etc. Once this response and its supporting written evidence has been received and confirmed as satisfying the Committee's points, you will be notified of the full approval of your ethics application.

When approval has been given subject to conditions, full approval is not effective until *all* the concerns expressed in the conditions have been met to the satisfaction of the Committee. Data collection may not commence until full approval has been confirmed. Should these conditions not be satisfactorily met within six months, your application may be closed and you will need to submit a new application should you wish to continue with this research project.

To enable us to provide you with efficient service, we ask that you use the application number and study title in all written and verbal correspondence with us. Should you have any further enquiries regarding this matter, you are welcome to contact me by email at ethics@aut.ac.nz or by telephone on 921 9999 at extension 6902. Alternatively you may contact your AUTEC Faculty Representative (a list with contact details may be found in the Ethics Knowledge Base at http://www.aut.ac.nz/research/research-ethics/ethics).

Yours sincerely

Dr Rosemary Godbold
Executive Secretary