Adolescent Extracurricular Activity and Levels of Alcohol Use in Regional and Metropolitan Locations: The Mediational Role of Peers.

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Bachelor of Arts in Psychology with Honours

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Abstract

This study takes a bioecological approach to examine whether the association between adolescents’ extracurricular activity participation and levels of alcohol use would be moderated by gender and location; and explores the mediational role of peers’ alcohol use between adolescents’ sport participation and their levels of alcohol use. A representative sample of 1,158 year nine and 658 year eleven students from metropolitan and regional schools across Western Australia responded to a computer-administered self-report survey. Location moderated the portfolio-activity link to adolescent drinking; regional students participating in sports-only or sports-plus-activities reported significantly higher levels of alcohol use compared to students in activities-only or non-participants whereas for metropolitan students participating in sports-only reported significantly higher levels of alcohol use. Males and females reported similar experiences related to profile participation and adolescent alcohol use. Peers’ level of alcohol use significantly mediated the positive relation between sport participation and adolescent alcohol use for regional but not for metropolitan adolescents. Peers’ level of alcohol use significantly mediated the negative relation between non-sporting activities participation and lower levels of adolescent alcohol use for metropolitan but not for regional adolescents.

*Keywords*: adolescence, sport, alcohol, location, peers
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In Australia, alcohol and sport are intimately linked. Alcohol is used to celebrate a win, to commiserate a loss and to reinforce the camaraderie and mateship amongst teams (Australian Drug Foundation, 2004, pp. 1).

Sport constitutes a major leisure activity for many young Australians with almost two thirds of Australian youth involved in organised sporting activities (ABS, 2006). Despite the sporting environment providing numerous physiological and social benefits there is also a strong link between sport and alcohol both in Australian culture and globally (Duff, Scealy, & Rowland, 2005; Martens, Dams-O’Connor, & Kilmer, 2007; Snow & Munro, 2000). Adolescents are exposed to alcohol in a sporting club setting, as many clubs are licensed to serve alcohol or are sponsored by the local hotel or brewery (Snow & Munro, 2000). Sporting clubs play an integral role in the formation of social capital by contributing to community identity and cohesion, and this is particularly evident in rural and regional areas (Atherley, 2006). Considering the evidence that rural and regional adolescents are less physically active (Martin et al., 2006) and more socially isolated than their urban counterparts (Atherley, 2006), regional sporting clubs become important places where youth can participate in physical activities and socialise with their peers, coaches and other adults. However, there is also concern that the regional club environment provides a setting for adolescent drinking to occur (Duff et al., 2005; Snow & Munro, 2000).

An adolescent’s decision to participate in sport and consume alcohol can have multiple causes and is subjective. Therefore a broad investigation of the relationship between alcohol and sport needs to take into account the micro-orientations of individual athletes, including their individual characteristics and intentions, as well as the macro-orientation of the sporting culture and context. Bronfenbrenner’s bioecological perspective (Bronfenbrenner & Morris, 2006) provides a useful
framework to examine the contextual and situational factors that affect an athlete's values, beliefs, and decision-making processes regarding alcohol.

The purpose of this study is to determine if levels of alcohol use are higher for adolescents who participate in sport compared to those in non-sporting extracurricular activities or those who participate in no activities and to see whether this relationship is moderated by locality or gender, and mediated by peer characteristics. This study will add to the knowledge base through further investigation of Australian youth, their extracurricular activity choices and associated level of alcohol use.

Adolescence

Adolescence is described as a time of transition from childhood to adulthood and is marked by increased biological, cognitive, and social changes (Silbereisen & Lerner, 2007). During puberty individuals increase their personal decision-making and move from dependency on adults to a state of autonomy (Zimmer-Gembeck & Collins, 2006). Empirical accounts of adolescent experiences reveal a multitude of complex issues with many inconsistencies in research findings, particularly related to alcohol consumption. For example, Zucker (2008) reviewed six longitudinal studies examining why adolescents misuse alcohol and concluded that not only do many factors contribute to adolescents’ misuse of alcohol but certain factors sometimes operate protectively while at other times, these same factors predict increased risk. Thus the experience of adolescence may contain some elements of similarity across all youth; however, for an individual the developmental pathway is unique and dependent upon complex interactions over time between the characteristics of the individual and the features of his/her environment (Silbereisen & Lerner, 2007).

Alcohol

The choice for an adolescent to consume or abstain from drinking alcohol is likely to be influenced by multiple risk and protective processes. Any examination of
adolescent participation in alcohol use requires recognition that adolescents exist in complex systems, involving a network of overlapping and sometimes competing relationships that are affected by broader contextual factors (Lerner, 2002). Comprehensive sampling of adolescent behaviour has demonstrated that alcohol consumption is common (Australian Institute Health and Welfare [AIHW], 2007; Bonomo et al., 2001). An estimated 1.2 million Australians 12 to 19 years of age consumed alcohol in 2007 (AIHW, 2007). Further examination of age patterns of alcohol use revealed that nearly a third (30.1%) of 12-15-year-olds reported drinking alcohol; the incidence rose with age to approximately three quarters (75.6%) of 16-17-year-olds (AIHW, 2007). Research has also shown that friends of adolescent drinkers are more likely to use alcohol over time (Jaccard, Blanton, & Dodge, 2005). As well as friends influencing an adolescent’s decision to use alcohol, adolescents in regional areas of Australia are more likely to consume alcohol than are their metropolitan counterparts (Graham, Ward, Munro, Snow, & Ellis, 2006) and research suggests that adolescents use alcohol in sporting clubs (Duff et al., 2005); therefore investigation is required to identify contributors to adolescent alcohol use.

**Bioecological Theory**

When considering research into adolescents’ development and their associated risky behaviours, scholars need to draw together empirical findings and provide a carefully articulated, theoretically driven process model to describe their findings (Zucker, 2008). Bronfenbrenner’s bioecological theory provides a framework from within which the various individual and contextual factors that influence adolescent development can be reviewed (Bronfenbrenner & Morris, 2006). As research studies into adolescent participation in extracurricular activities, particularly related to sporting activities, has expanded, this developmental theory assists us to advance our
understanding of the processes that underlie adolescent participation and the emergence of adolescent alcohol use.

The bioecological theory (Bronfenbrenner & Morris, 2006) focuses on ways in which the adolescent interacts with his or her environment to affect development. Bioecological theory views the individual within a complex system of reciprocal relationships, located in a set of nested levels, ranging from more proximal settings (e.g., families and schools) to more distant and indirect settings (e.g., geographic locations; Bronfenbrenner & Morris, 2006). The mature form of Bronfenbrenner’s theory requires that the influences among the four facets of development: Process-Person-Context-Time (PPCT model) be discussed within the nested levels and interacting systems in which they are embedded (Bronfenbrenner & Morris, 2006). The bioecological perspective can assist to identify and analyse the processes that connect extracurricular activity participation and alcohol consumption at the level of the adolescent, and more broadly to examine factors related to the context in which the adolescent is embedded, as development arises from the complex interplay of these factors at the various levels.

**Extracurricular Activities**

Adolescents’ time after school represents an important context in which they can develop. Adolescents can use this time to participate in a wide variety of activities ranging from unsupervised pursuits such as watching television and “hanging out” with peers to highly organised activities where their skills are enhanced under adult direction, such as participating in sports or clubs (e.g., music, drama; Mahoney, Larson, Eccles, & Lord, 2005). Research into extracurricular activity participation shows participation significantly affects social, educational, civic, and physical development (Eccles, 2005; Durlak & Weissberg, 2007; Feldman & Matjasko, 2005; Fredricks & Eccles, 2006b; Mahoney et al., 2005). High quality structured extracurricular activities can provide
opportunities for growth and development; however, whether participation in extracurricular activities facilitates, maintains or impedes positive youth development depends on the processes that occur within the activity context (Feldman & Matjasko, 2005; Fredricks & Eccles, 2006a; 2006b; Mahoney, et al., 2005).

For adolescents, extracurricular activities represent an important setting where developmental outcomes can be advanced (Barber, Stone, Hunt, & Eccles, 2005; Eccles, Barber, Stone, & Hunt, 2003). Recent research, consistent with literature reviews (Barber, Abbott, Blomfield, & Eccles, 2009; Feldman & Matjasko, 2005; Marsh & Kleitman, 2002), suggests that participation in organised extracurricular activities is positively associated with indicators of academic achievement (Eccles & Barber, 1999; Eccles et al., 2003; Fredricks & Eccles, 2006b), psychological adjustment (Barber, Eccles, & Stone, 2001; Fredricks & Eccles, 2006b; Marsh & Kleitman, 2002) and reduction in antisocial behaviour (Durlak & Weissberg, 2007; Fredricks & Eccles, 2006b). However, an accumulating body of research provides inconsistent data on the developmental benefits of extracurricular activities for adolescents (Feldman & Matjasko, 2005, 2007; Marsh & Kleitman, 2002). Scholars have found that different developmental outcomes result from different activity types, differences in individual characteristics, and differences in the environments in which adolescents and activities are situated (Eccles & Barber, 1999; Fredricks & Eccles, 2006b).

**Sports Participation**

Sports are competitive pursuits usually characterized as being organised activities, with an individual or team orientation, requiring particular skills and competencies for effective performance. Among the range of extracurricular activities, researchers have focussed most often on sports because they are the most popular extracurricular activity for youth in Western society (Danish, Taylor, & Fazio, 2003). For Australian teenagers aged 12-14 years, 63.7% participated in sports outside of
school hours, decreasing to 54.6% for 15-17 year olds (ABS, 2006). Across the United States of America, 69% of girls and 75% of boys have been found to play organised sports (Sabo & Veliz, 2008) and sport participation usually consumes more out-of-school time than other activities (Mahoney, Harris, & Eccles, 2006). Scholars have also been interested in the complexities of sports participation, as such participation has been linked to highly positive functioning such as adolescent psychosocial and academic development, but it has also been linked to problem behaviours such as alcohol use (Eccles & Barber, 1999; Marsh & Kleitman, 2002).

For youth in Australia, sport programs have been incorporated into personal and social development strategies to reduce antisocial behaviour (Morris, Sallybanks, Willis, & Makkai, 2004). There is a common conception that the physical demands of participating in an athletic pursuit and the commitment to a successful performance should serve as a deterrent to heavy alcohol use and substance abuse, a phenomenon that has been labelled the “the deterrence hypothesis” (Eitle, Turner, & Eitle, 2003). Some studies have supported this supposition and reported that adolescents who participate in sports have lower use of alcohol (Fredricks & Eccles, 2006b). However, other studies have linked sport participation to greater use of alcohol, binge drinking and inebriation (Eccles & Barber, 1999; Garry & Morrisey, 2000; Harrison & Narayan, 2003). Harrison and Narayan (2003) classified youth into four activity profiles based on their participation; sports-only, activities-only (e.g., clubs, volunteer work, band, drama), a combination of sports-plus-activities or neither. They found that youth who participated in sports-only were more likely to use alcohol and/or binge drink than youth who participated in sports-plus-activities or youth in other non-sporting activities alone. These four types of extracurricular participation, sports-only, sports-plus-activities, activities-only and non-participation, have been consistently identified and
used in research related to adolescent development (Bartko & Eccles, 2003; Feldman & Matjasko, 2007)

Zarrett (2007) identified patterns of activity participation and found youth who engaged in sport-plus-activities spent more time under adult supervision, whereas youth who engaged in sports-only spent more time hanging out with their friends in unsupervised activities. Time spent in unsupervised activities can be associated with more negative behaviours such as alcohol use (Osgood & Anderson, 2004; Osgood, Anderson, & Shaffer, 2005). As well, the cultural link between sport and alcohol (Duff et al., 2005; Martens et al., 2007) is more likely to influence youth as they participate in sport whereas this cultural link is not a dominant aspect of other activities (e.g., drama, the arts, music). Engaging in a combination of sport and other activities is more likely to result in opportunities to integrate experiences from both profiles of organised activities, whereas sports or activities alone or non-participation afford only one dynamic (Eccles et al., 2003). The combination of sport-plus-activities is also more likely to offer individuals a variety of peers with different social and personal identities with whom youth can choose to spend their time, which results in associations with peer groups with more positive characteristics overall (Simpkins, Eccles, & Becnel, 2008).

Considering the previous findings this study aims to investigate the inconsistent findings related to sport participation and alcohol use, and examine whether adolescents participating in sports-only have the highest levels of alcohol use compared to other profiles of participation (i.e. activities-only, sports-plus-activities).

Elements of Bioecological Theory - Person and Time

The person element within the bioecological framework refers to the individual and his or her biological characteristics such as age, gender, or physical appearance as well as the individual’s attitudes, beliefs and expectations (Bronfenbrenner & Morris, 2006). The element of time within the PPCT model incorporates several temporal
aspects: the historical period in which interactions reside and the passage of time during which development occurs (Bronfenbrenner & Morris, 2006). Developmental trajectories depend upon individuals’ characteristics and how they relate to their environments during their lifespans (Lerner, 2002). Participation in sport typically occurs on a regular basis, and includes training sessions and scheduled competitions; within this context, adolescents can develop over time, and longitudinal designs best capture this development (Feldman & Matjasko, 2005; Fredricks & Eccles, 2006b), however, cross-sectional designs are still an important research tool to examine the forces that produce change across successive generations (Bronfenbrenner & Morris, 2006), and will be used in this study.

Feldman and Matjasko (2005), in their literature review on the effects of extracurricular activities and adolescent development, highlighted the importance of considering the person element of gender as a moderator. Gender can be examined as a source of variation in adolescents’ susceptibility to the developmental effects of the environmental conditions surrounding their extracurricular choices. According to the bioecological perspective an adolescent’s gender can act as a stimulus for peers or others, influencing initial interactions and so affecting the adolescent’s own development. Thus, being male or female and participating in sport may result in an immediate formation of an expectation surrounding the use of alcohol within the adolescent’s social environment which may then influence their own attitudes and behaviours.

Eccles and Barber (1999) determined that participation in team sports was significantly associated with an increase in inebriation among males between 10th and 12th grade, and follow-up studies of the same students by Barber et al. (2001) found 10th grade female athletes increased their frequency of drinking at a faster rate than nonathlete females whereas male athletes increased their drinking at a lower rate than
nonathlete males. Crosnoe (2002), as well as finding that boys were more involved in athletics than girls, also found that gender moderated alcohol use; initially athletic participation for both genders was protective in regard to alcohol use but over time female athletes increased their alcohol use to a rate similar to that found in boys (among both athletes and non-athletes). Conversely, Fredricks, and Eccles (2006b) found that for boys, participating in sports predicted lower alcohol use; however for girls, participating in sports during high school predicted higher alcohol use post-high school. The inconsistent findings for males may be because these studies examined sports participation without examining the distinctions between males who participate in sport as their only constructive activity compared to males who combine their participation with other activities. Therefore an aim of this study will be to examine whether gender moderates the relationship between the type of extracurricular participation and adolescent alcohol use. The focus will be to compare the alcohol use of males and females who participate in sports as their only organised activity with those who combine sport with other activities and see if alcohol use for males is higher when sport is the only activity they engage in and lower for males when they engage in sports combined with other activities.

For males and females, most studies have found frequency of alcohol use by adolescent sport participants to increase with age (Barber et al., 2001; Crosnoe, 2002). There is a need to consider a range of ages when surveying adolescents, as both alcohol use and sporting activity change greatly over the course of adolescence; adolescent alcohol use increases with age (AIHW, 2007; Windle et al., 2008) and sports participation decreases with age (ABS, 2006; Denault & Poulin, 2009). When considering adolescent alcohol use within the sports context, researchers need to be aware of the need to control for age (Peretti-Watel, Beck, & Legleye, 2002). Controlling
for age in all our analyses allows us to explore the differences in alcohol use for the activity portfolio.

*Elements of Bioecological Theory - Processes*

In bioecological theory, *process* plays a crucial role in development and refers to the reciprocal interactions between the person and the environment in which development occurs (Bronfenbrenner & Morris, 2006). Bronfenbrenner made this construct increasingly explicit with the term *proximal processes*, meaning the primary, driving mechanisms in development, composed of the everyday dynamic interactions that occur regularly between the developing persons and the symbols, objects and people in their immediate environment, over time (Lerner, 2002). Applying Bronfenbrenner’s constructs to this study, we observe that participating in sporting activities represents an everyday context in which adolescents involve themselves in an activity, where they react and interact with those around them (peers, teammates, coaches, community members, club officials), and where they interact with objects and symbols (sporting equipment, rules of the game, alcohol, cigarettes), within a particular environment (school, community, regional or metropolitan locations). Therefore the developmental consequences of participating in sport depend on proximal processes, for example peer-to-peer interactions, within the sporting context. Whether or not participation in extracurricular sport impedes the healthy development of the adolescent by leading to underage drinking may depend upon the content of the interchanges between the individuals and their peers within this context.

*Peer Influence Processes.* Adolescents strive to become more independent from their families and in doing so spend more time outside of home with their peers. This individuation process is often associated with experimentation related to increased use of alcohol (Chassin et al., 2004). Although increased alcohol use is a normal part of growing up in many cultures, its use by youth is often earlier than is legally or socially
accepted, and early use can damage adolescent health both in the short term (e.g., car accidents, violence), as well as cause long-term health problems (e.g., dependence; Masten, Faden, Zucker, & Spear, 2008). The developmental shift of influence from parents to peers during adolescence is also a normal part of growing up (Brown, 2004; Kerr, Stattin, Biesecker, & Ferrer-Wreder 2003), with one’s friends influencing many aspects of development such as the choice to participate in sports (Patrick et al., 1999) or to use alcohol (Borsari & Carey, 2001). As adolescents spend time together in the sporting environment it is likely that they will draw from teammates to form friendships, and the attitudes and behaviours of the group may influence their behaviour (Brown, 2004; Eccles et al., 2003).

The drinking culture surrounding adolescents has been of particular interest to researchers searching for appropriate intervention programs to increase the positive outcomes for youth (Duff et al., 2005; Durlak & Weissberg, 2007). Of the variables found to be related to adolescent alcohol use, peer alcohol use is consistently one of the strongest predictors (Hawkins, Catalano, & Miller, 1992). Adolescents, as they participate in sports and interact in sporting-associated social situations, can simultaneously be the recipients and producers of peer influence pertaining to alcohol use (Curren, Stice, Chassin, 1997). The social interactions of peers are difficult to track. However, Dishion and colleagues (Dishion, McCord, & Poulin, 1999; Dishion & Owen, 2002; Dishion, Spracklen, Andrews, & Patterson, 1996) were able to study a group of youth for over 10 years, examining their social interactions by recording information from video-taped sessions on the momentary action-reaction patterns that occurred within specific friendship groups. The investigators found that as their sample group (at-risk adolescents in the Oregon Youth Study) interacted with their friends, subtle peer influences occurred; friends of the delinquent youth gave positive reactions (smiling, laughing more) when the conversation focussed on deviant behaviour, resulting in
deviance-training. They showed that the strongest proximal correlate of adolescent alcohol use was gathering in peer groups that use alcohol; specifically alcohol use increased in particular months when contact with alcohol-using peers also increased and prior alcohol use influenced the selection of friends in late adolescence. (Dishion & Medici Skaggs, 2000). Dishion and colleagues recognized the limiting factors in their research as being the small (but stable) sample size and the selection bias, as the youth were labelled as being at risk of deviance.

Perceived Peer Alcohol Use in Sporting Participation

If adolescents use alcohol they tend to select a peer group who are more likely to use alcohol, similar to themselves, but if they do not use alcohol, they are also susceptible to pressures of conformity from their peer group (Borsari & Carey, 2001). Therefore adolescents may use alcohol because they believe it will help them “fit in” with their peers (Coleman & Cater, 2005). Perceived peer alcohol use can be examined as a proximal process which drives subsequent adolescent alcohol use, as adolescents who seek out and affiliate with alcohol-using friends are more likely to use alcohol themselves (Hawkins et al., 1992). Although previous studies have advanced our knowledge about the processes of peer influence on increased alcohol use during adolescence (Curren et al., 1997; Hawkins et al., 1992; Dishion, McCord, et al., 1996; Dishion, Spracklen, et al., 1999; Dishion & Medici Skaggs, 2000; Dishion & Owen, 2002), questions remain concerning the interplay between sport participation and the social forces that contribute to increased alcohol use.

Alcohol use is a prominent part of sports culture; alcoholic drinks are present at most social functions in the sporting environment where they form a part of many peer interactions (Duff et al., 2005). The occurrence of alcohol-based social opportunities in sporting clubs can be examined in terms of the strength of peer influence on attitudes and behaviours of adolescent sport participants. Adolescents gather together for
extended periods of time on a regular basis because they participate in particular sporting activities and this can influence adolescents’ selection of friends (Patrick et al., 1999). Most research on peer gatherings and their mediating effects related to alcohol use have focussed on samples of college students (Verkooijen, de Vries, & Nielsen, 2007; for review see Borsari & Carey, 2001). Eccles and Barber (1999) examined the “jock” crowd and suggested that the link between team sports participation and alcohol use might be explained by peers also being involved in sporting activities. Thus peers may actively shape drinking behaviour because of the perceived normative behaviours and attitudes of the peer group related to alcohol use; however mediation was not tested. Medialional analysis by Blomfield (2006), using an urban Australian sample of 98 adolescents, found adolescent alcohol use was mediated by peer alcohol use for students participating in team sports.

The current study is unable to fully examine the development of alcohol use by adolescents as a process over time because of its cross-sectional nature. However, associations between involvement in sporting activities and the various contextual influences at a particular time can be determined. This research seeks to understand whether, and to what extent, adolescents’ sporting participation predicts their alcohol use, and using mediation analysis examines a process that may account for such a link (Preacher & Hayes, 2008). Using bioecologically guided research methodology, rigorous between-group studies can determine the relative salience of the peer influences related to adolescents’ sporting activities and the development of alcohol use; these influences are both proximal and constant in the adolescents’ life. Specifically, the concern of the current study is to examine the association between sports participation and adolescent alcohol use and to determine if this association is mediated by their friends’ drinking behaviour.

*Elements of Bioecological Theory - Context*
Peers are not the only socializing influence on adolescents as they participate in sports. Bronfenbrenner suggested that proximal processes are embedded within contexts, and the integration between the active person and his or her active environments also contributes to adolescent development (Bronfenbrenner & Morris, 2006). From a bioecological perspective, developmental differences would be expected between metropolitan and regional youth, because metropolitan settings differ from regional settings in important ways, creating distinct contexts for development. Yet few studies have examined the distinctive features of geographic location and their implications for adolescent development.

Major studies on adolescent development can include large national samples of adolescents from rural and urban areas so the results can be generalized (Masten et al., 2008); however, because such studies can be prohibitively expensive, research is often focussed on a local area. Other studies have primarily focussed on urban youth development as these localities are associated with higher rates of delinquency (Hawkins et al., 1992). The bulk of the research has taken place in America and found that non-urban adolescents were engaging in alcohol-related risk behaviours at levels equivalent to the level of use among their urban counterparts (Levine & Coupey, 2003; Vazsonyi, Trejos-Castillo, & Young, 2008). However, Atav and Spencer (2002) identified rural youth of New York State as being at greater risk for alcohol abuse compared to non-rural youth. Although these studies investigated the environmental influences on youth and their associated alcohol use they did not explore possible differences that may occur related to activity participation. In addition the previous studies relate to American youth and may not generalize to young Australians. One Australian study, using focus group discussions, concluded that teenagers in rural areas engage in more alcohol use than do their urban counterparts (Quine et al., 2003) with
boredom based on limited extracurricular opportunities cited to account for the elevated underage drinking of rural adolescents.

Boredom is of particular concern for adolescents in regional Australia if they are not interested in playing sport. Recreational opportunities related to performing arts are limited in regional areas as there is an absence of cultural facilities such as theatres and galleries, as well as limited adult expertise in these areas (Australian Council for the Arts, 2000). Sport, however, enjoys high status in regional Australia, with regional communities building, financing, and maintaining many sporting venues (e.g., football and cricket ovals, netball courts and golf clubs), as well as having trained coaches in a variety of sports, so sport in regional areas attracts higher rates of participation compared to non-sporting activities (Tonts, 2005). Sport in metropolitan areas is financed, maintained, and resourced equally as well as it is in regional areas; however, cultural facilities and expertise surrounding the arts are more readily available for metropolitan students than for their regional counterparts (Australian Council for the Arts, 2000).

Sport in regional areas of Australia provides a key mechanism for the establishment and maintenance of social capital for communities (Tonts, 2005). Social capital can be described as the social relationships and connections between people that provide resources and support for individuals within communities (Crockett, Shanahan, & Jackson-Newsom, 2000). Sport is an integral component of regional Australian culture, providing a sense of community and identity for individuals whilst shaping the social network for many adolescents (Atherley, 2006). Regional areas are defined by their reduced population density; therefore regional adolescents are likely to have a reduced number of peers from whom to form a social network (Crockett et al., 2000). If regional adolescents choose to participate in sport they will spend time in close proximity with other sports participants, socialize with them and develop peer
affiliations. As the adolescents train and play sport together they are likely to share
common experiences related to their sport and so form friendships with members of the
sporting group. As a consequence of the reduced number of peers in regional areas,
compared to metropolitan areas, their time outside of sport will most probably be spent
with the same peer group.

Considering the choice of extracurricular activities for metropolitan students and
the inherent increased population density in metropolitan areas, it may be plausible that
metropolitan students will have greater opportunities to select friendship groups from a
wider pool of adolescents. Simpkins et al. (2008) found students who participated in a
wide variety of activities, including sports and non-sporting activities such as
performing arts, community and religious groups, were likely to have more friends with
positive characteristics which significantly mediated the relations between the wider
variety of activities and adolescent alcohol use. This finding is also not surprising as
non-sporting activities are not widely associated with the drinking culture that is often
linked with sports (Duff, et al., 2005; Martens et al., 2007; Snow & Munro, 2000).

Participating in a sport linked to a regional sporting club may provide a time and
place where adolescents interact with both their peers and with alcohol. Sporting clubs
in Australia are often associated with alcohol through sponsorship or liquor sales; over
60% of sporting clubs in regional South Australia have liquor permits (Duff et al.,
2005). Participating in licensed sporting clubs increases alcohol availability for
adolescents, and increases opportunities for contact with alcohol-using peers. Snow and
Munro (2000) investigated alcohol consumption in amateur Australian Rules football
clubs in rural regions; 58% of respondents indicated that under-age drinking occurs at
their clubs. Research into the attitudes of rural parents and adolescents toward underage
drinking found that parents perceived alcohol to be less harmful than drugs and
acceptable as a ‘social lubricant’; adolescents saw consumption of alcohol as a normal
activity that required little thought or planning (Graham et al., 2006; Stritzke & Butt, 2001).

The reduced number of adolescents in regional areas also presents the problem of fielding teams of similar age groupings. Regional adolescents therefore play on teams which have a wider age range compared to their metropolitan counterparts (Townsend, Moore, & Mahoney, 2002). It is therefore plausible that adolescents in regional areas will be playing in teams with older and younger participants and so will interact with a peer group more varied in age than adolescents playing in sporting teams in the metropolitan area. Thus the environmental context of geographic location may affect adolescents’ alcohol use as in regional locations there are likely to be older sports participants who are more likely to be drinking peers. No empirical studies could be located which specifically addressed whether contextual effects of locality moderate developmental processes related to leisure activities such as sporting participation and adolescent alcohol use. To further understand adolescent alcohol use in sports and to address the lack of literature related to adolescent alcohol use by regional and metropolitan Australian youth in sport, this study will examine the interaction between sports participation and locality type (metropolitan versus regional), because the locality of the sport may have different influences on an adolescent’s experience related to sport participation and use of alcohol.

**The Present Study**

The present study had two major aims. First, to investigate the association between Australian adolescents’ extracurricular activity participation and levels of alcohol use, and whether, this relation was moderated by gender and location. Second, if the sport-alcohol association was found to be significant, to explore the mediational role of peers’ alcohol use between adolescents’ sport participation and their alcohol use.
To achieve the first aim, this study examined the relation between alcohol use and participants’ extracurricular activity involvement portfolio (sports-only, activities-only, sports-plus-activities, non-participation) by testing three hypotheses. As previous research has identified a strong cultural link between sport and alcohol (Duff et al., 2005; Martens et al., 2007) it was hypothesised that adolescents’ participation exclusively in sport, as their only organised activity, would be a positive predictor of higher levels of alcohol use when compared with other profiles of participation. To address the lack of research as to whether the locality of the participants moderates the association between sport participation and alcohol use, it was hypothesised that adolescents in regional areas who participated in sport-only or sport-plus-activities would have higher levels of alcohol use than their metropolitan counterparts and the difference for levels of alcohol use between sports participants and non-participants would be greatest in regional areas. Considering previous research, indicating that gender can impact on the relation between sport participation and alcohol use (Crosnoe, 2002; Eccles & Barber, 1999), it was hypothesised that gender would moderate the participation-alcohol link, such that males who engaged in sports-only would have higher alcohol use than female sports-only participants, whereas males and females who combined sport-plus-activities would have similar alcohol use.

The second aim of this study was to examine whether the composition of one’s peer group is an explanatory process mechanism in the association of sports and alcohol use. To achieve this aim a potential mediational pathway was tested by examining the associations between sport participation, perceived peer alcohol use, and adolescent alcohol use. If a significant association between sports participation and alcohol use was established in the analyses for Aim 1, then it was hypothesised that perceived peer alcohol use would mediate the relation between sports participation and adolescent alcohol use. (see Figure 1).
Figure 1. Mediational model of sport participation, perceived peer alcohol use, and adolescent alcohol use.

**Method**

**Participants**

Participants included 1,816 students from thirty-four high schools within Western Australia including 1,158 year nine students (633 female, 506 male), and 658 year eleven students (343 female, 302 male; 32 students, 19 year nine, and 13 year eleven students did not respond to the gender question). The mean age of the participants was 14 years and 8 months ($SD = 1.10$ years) and ranged from 13 to 18 years. Participants were located in 4 metropolitan districts (68%) and 9 regional districts (32%) with boundaries designated by the Western Australian Department of Education and Training. Seventy-five schools were invited by letter to participate in the survey with 34 responding positively. The student response rate cannot be determined due to individualised school recruitment logistics. All participants provided their written consent as well as their parents’ written consent prior to the survey.

**Materials**
The data were derived from the Youth Activity Participation Study of Western Australia (YAPS-WA; see Appendix 1), as part of a larger study of adolescent extracurricular activity choice and developmental outcomes. The self-report survey was based on previous measures of activity participation (Barber, Stone, & Eccles, 2005) and was updated to reflect Australian youth activity participation (Blomfield & Barber, 2009). The survey design included a checklist format, with a list of 25 sports (e.g., cricket, netball) and 15 non-sporting activities (e.g., art, band, chess; subsequently activities refers to non-sporting activities). During a 45-minute session participants entered responses onto laptops, or alternatively completed a paper and pencil version of the survey.

Demographic Background. Demographic information included gender, age and the grade participants were completing. The male students were coded 1 = male and female students were coded 0 = female. The students in schools within the four metropolitan school districts were coded 1 = metro and students in the schools outside these four districts were coded 0 = regional.

Extracurricular Sport and Non-Sporting Activity Participation. Participants were provided with a detailed list of extracurricular activities and sports from which they were asked to enter all of the activities and sports in which they were currently involved or had been involved during the past year. Participants were told to state their sport or activity in ‘other’ if it was not present in the list.

Using the Statistical Package for the Social Sciences (SPSS, version 14), data were coded for each participant, using a dichotomous yes or no measure, initially reflecting participation in sport or non-sporting activities, creating two variables labelled sport-participation (0 = no, 1 = yes) and activities-participation (0 = no, 1 = yes). A variable was created labelled extracurricular-activity-composite, whereby
participation in sport and/or non-sporting activities was coded as a ‘yes’ with non-participation being coded as a ‘no’ (0 = no, 1 = yes).

To create the portfolio of participation type (subsequently referred to as portfolio), four categories were initially created based on patterns previously identified in relevant literature (Bartko & Eccles, 2003; Feldman & Matjasko, 2007). The students who participated in only sports were allocated to a category labelled sports-only; the students who participated in only activities were allocated to a category labelled activities-only; the students who participated in activities and sports were allocated to a category labelled sports-plus-activities; and a category labelled non-participation was created (reverse coding for extracurricular activity composite). The portfolio variable was created by collapsing the four categories (sports-only, activities-only, sports-plus-activities, non-participation) into one variable and this variable was labelled portfolio (0 = Non-participation, 1 = Sports-only, 2 = Activities-only, 3 = Sports-plus-Activities).

Alcohol Use. Alcohol use was measured with three items asking the participants how many times over the last six months they had: drunk alcohol, had more than five alcoholic drinks on the one occasion, and been drunk. All items were assessed with the frequency response scale containing seven options (1 = none, 2 = once, 3 = 2-3 times, 4 = 4-6 times, 5 = 7-10 times, 6 = 11-20 times, 7 = 21-30 times, 8 = 31 or more times), and was adapted from the Fredricks and Eccles (2005) alcohol use scale (a third item; had more than five alcoholic drinks on the one occasion was included in the alcohol scale). A continuous variable labelled alcohol use was created as a mean of these three items. Scale reliability for alcohol use was tested using Cronbach’s alpha (α = .90).

Peer Activities. Participants assessed, with a five-item frequency response scale previously used by Eccles and Barber (1999), the proportion of their friends who regularly drank alcohol. Students answered the question related to perceived peer alcohol use if they were completing the section about their sport and/or the section
about their non-sporting activities. If students were non-participants, they completed a separate section about the proportion of their friends who regularly drank alcohol. The 5-point Likert scale included labels for 1: none, 3: about half, and 5: all. A variable labelled *peer-alcohol-all* was created which reflected the mean for the proportion of friends who drank alcohol if the students were active in both sport and non-sporting activities and the score for the proportion of friends who drank alcohol if students participated in sports-only or activities-only or did not participate.

**Procedure**

Ethical clearance and approval to conduct research was obtained from the university human research committee prior to data collection. Data were collected from 34 schools recruited to participate in the YAPS-WA survey, by letter of invitation through the school principal (see Appendix 2). On acceptance, an information package was sent to the school and in-person discussions followed to organise data collection. To minimise disruption at the school level, recruitment of participants was left to the school personnel with the main suggestion being to send out consent letters to all students in years 9 and 11 within the school. This occurred in the majority of cases; however, a small number of principals decided to target certain groups within each year (e.g., a particular class). A prerequisite for survey participation was the return of parent and student consent forms (see Appendices 3 and 4). Participants were informed that in return for their participation they would be entered into an immediate small prize draw (e.g., posters, vouchers, sporting memorabilia) at the school level and would also be included in a final prize draw (e.g., guitar, iPod).

The survey was administered using 20 wireless-laptop computers, connected to a Web server, over a 45-minute session. The computer-assisted self-interview format had been successfully used in national longitudinal studies of adolescent health in the United States (Larson, Hansen, & Moneta, 2006). Participants found the delivery format
engaging and data errors were reduced as participants entered their responses directly into computers, eliminating the need for post-survey data coding and entry. An alternative paper survey was provided if requested. Participants were told that the survey was confidential, that participation was entirely voluntary, and that completed surveys would not be available to their teachers, school, or parents.

Surveying of the participants was conducted during term 4 of the previous year and throughout terms 1, 2 and 3 of the present school year. School personnel organised the day, the time, and the room for data collection. On the day of administration, researchers set up the mobile computer laboratory and then liaised with school personnel to collect the designated participants. Twenty participants at a time rotated through the survey; they were given instructions on how to proceed (see Appendix 5), and were supervised by researchers. Participants were provided with an individual information sheet, and a separate identification number to enter at the beginning of the survey. Identification numbers were allocated to participants to allow their data to be matched to those collected in the previous year. Participant consent forms were collected separately from the survey. On completion participants were offered a sporting poster and were thanked for their assistance. A similar procedure occurred if the school elected to use a paper survey, with written surveys replacing the computers.

Results

Analysis Plan

Firstly, a series of Crosstabs were performed to view the participation patterns for the students’ location and gender. Secondly, univariate analysis of covariance (ANCOVA), controlling for age, was performed to explore the association between adolescent activity participation and alcohol use, and to examine moderation effects for gender and location. Thirdly, if location or gender effects were found, the associations between activity participation, alcohol use and friends’ alcohol use were examined as two
separate samples (metropolitan and regional; male and female) using bivariate correlations. Finally, regression analyses were used to test for any mediator relationships, using the guidelines by Baron and Kenny (1986). In the models where mediation was established the significance of the mediated effect was investigated using the Sobel (1982) test based on the guidelines from Preacher and Leonardelli (2003). The percentage of total effect for the mediator was also determined using Holmbeck’s (2002) equation.

**Missing data.** Data relating to specific items within the survey were missing for less than 5% of the sample. Missing data were attributed to lack of knowledge by students (e.g., unknown postcodes for location), misinterpreting the need to attend to a question, reluctance to disclose personal information (particularly related to risky behaviours) and time constraints related to the school’s time allocation to complete the survey.

**Descriptive data on student activity participation**

A series of Crosstabs using the chi-squared statistic were performed to describe the attributes of those who participated in each portfolio type, including the non-participants.

**Portfolio**

As previously described, the students were assigned to one of the following categories dependent upon their extracurricular activity involvement: *sports-only*, *sports-plus-activities*, *activities-only*, or *non-participation*. The majority of students (89%, \( n = 1621 \)) reported participating in at least one extracurricular activity (sports-only, 36%, \( n = 650 \); sports-plus-activities, 41%, \( n = 756 \); activities-only, 12%, \( n = 215 \); and, non-participants, 11%, \( n = 195 \)).

**Gender.** A Crosstab was used to investigate whether the distribution across genders differed for type of activity portfolio. The portfolio distributions for male and
female students are presented in Figure 2. Thirty-two students failed to provide information related to gender, so their data were excluded from gender analyses. To determine which cells contributed to the overall association that the chi-squared statistic measures, the standardised residuals were examined to see if the $z$-score values were outside of ± 1.96, indicating significance (Field, 2009). Males and females were significantly different in their distribution as to which portfolio activity type they participated in, $\chi^2 (3, n = 1784) = 63.11, p < .001$.

![Bar chart showing participation rates of female and male students for the portfolio.](image)

*Figure 2.* Participation rates of female and male students for the portfolio.

When students participated in sports-only, the standardised residual was significant for both females ($z = -4.1$) and males ($z = 4.5$) indicating that when gender was considered, significantly more males than expected participated in sports-only and significantly fewer females than expected participated in sports-only. When gender was considered for students who participated in activities-only, significantly more females than
expected \((z = 2.7)\) participated in activities-only and significantly fewer males than expected \((z = -2.9)\) participated in activities-only. When gender was considered for students who participated in sports-plus-activities, significantly more females than expected \((z = 2.1)\) participated in sports-plus-activities and significantly fewer males than expected \((z = -2.3)\) participated in sports-plus-activities. For non-participation the standardised residual was non-significant for both males \((z = -0.6)\) and females \((z = 0.5)\), indicating that males and females were not distributed differently than expected.

*Location.* A Crosstab was used to investigate whether the distribution across the locations differed for the types of extracurricular activity portfolios. The activity portfolio distributions for regional and metropolitan students are presented in Figure 3. Regional and metropolitan students were distributed significantly differently among activity types, \(\chi^2 (3, n = 1816) = 36.59, p < .001\).

*Figure 3.* Participation rates of regional and metropolitan students for the portfolio.
When students participated in sports-only, the standardised residual was significant for regional students ($z = 2.3$) but not for metropolitan students ($z = -1.6$) indicating that when location was considered, significantly more regional students than expected participated in sports-only. When location was considered for students who participated in sports-plus-activities, significantly more metropolitan students than expected ($z = 2.3$) and significantly fewer regional students than expected ($z = -3.3$) participated in sports-plus-activities. When location was considered for students who did not participate in any extracurricular activities, significantly more regional students than expected ($z = 2.9$) and significantly fewer metropolitan students than expected ($z = -2.0$) were non-participants. For students who participated in activities-only the standardised residual was not significant for either metropolitan ($z = 0.4$) or regional students ($z = -0.5$).

**Alcohol Use**

Examination of alcohol use indicated that 59% of regional students and 58% of metropolitan students had used alcohol in the last 6 months. A 2 (gender) x 2 (location) x 4 (portfolio) ANCOVA, controlling for age, was used to test for significant differences in alcohol consumption. If significant portfolio differences were found, Fisher’s Least Significant Difference (LSD) post hoc test was used to determine which groups were significantly different from each other. If location or gender interacted with participation, then the samples were examined separately to determine the nature of the significant interaction.

**Portfolio, Gender, and Location.** Adolescent alcohol use was compared for the extracurricular activity portfolio type (sport-only, activities-only, sports-plus-activities, or non-participation), location of the adolescents (regional or metropolitan), and gender (male or female) using a three-way between-subjects ANCOVA, controlling for age.
The alpha level was 0.05. The covariate, age, was significantly related to adolescent alcohol use, $F(1, 1729) = 191.27, p < .001$.

There was a significant main effect of the type of participation portfolio on adolescent alcohol use, $F(3, 1729) = 5.91, p < .01$. Follow-up tests were conducted to evaluate pairwise differences among the means using the LSD post hoc test. The results of these tests as well as the adjusted means, controlling for age, are reported in Table 1. Alcohol use was significantly higher for adolescents who participated in sports-only compared to those who participated in activities-only or those who were non-participants. Alcohol use was significantly lower for the group that participated in activities-only compared to adolescents who combined their activities with a sport.

There was a non-significant main effect of gender on adolescent alcohol use, $F(1, 1729) = 0.02, p > .05$. The interaction effect between the type of participation in the portfolio and gender was non-significant, $F(3, 1729) = 0.92, p > .05$. The sample was, therefore, not separated for gender effects. The three-way interaction effect between gender, location and portfolio was non-significant, $F(3, 1729) = 0.34, p > .05$.

Table 1

<table>
<thead>
<tr>
<th>Portfolio</th>
<th>Non-Participation</th>
<th>Sports Only</th>
<th>Activities Only</th>
<th>Sports plus Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$n = 191$</td>
<td>$n = 633$</td>
<td>$n = 208$</td>
<td>$n = 714$</td>
</tr>
<tr>
<td>Adjusted $M$</td>
<td>1.87$^a$</td>
<td>2.10$^{ab}$</td>
<td>1.62$^{bc}$</td>
<td>1.94$^c$</td>
</tr>
<tr>
<td>$SD$</td>
<td>1.59</td>
<td>1.45</td>
<td>1.15</td>
<td>1.28</td>
</tr>
</tbody>
</table>

*Note.* Adjusted means in the same row that share superscripts differ at $p < .05$ for the LSD comparisons. Adjusted mean with covariate of age = 14.84 years.
There was a non-significant main effect of location $F(1, 1729) = 1.65, p > .05$. There was a significant interaction between the portfolio type and location for alcohol use, $F(3, 1767) = 3.46, p < .05$ with the interaction shown in Figure 4. This significant interaction indicated that portfolio differences in alcohol use varied between metropolitan and regional locations in particular, the non-participants in regional areas had significantly lower alcohol use than the non-participants in the metropolitan area. To further probe the nature of the interaction the sample was separated into two groups, metropolitan and regional.

![Figure 4](image-url)  
*Figure 4.* Interaction effects of location and portfolio on adolescent alcohol use reporting adjusted means. Error bars represent standard errors.

*Location effects.* One-way ANCOVAs, controlling for age, tested for significant differences in alcohol consumption by portfolio type, separately for the metropolitan and regional groups. There was a significant effect of participation portfolio on alcohol use for the regional sample, $F(3, 577) = 5.47, p < .01$, and a significant effect of
participation portfolio on alcohol use for the metropolitan sample, $F(3, 1189) = 4.87, p < .01$. Follow-up tests were conducted to evaluate pairwise differences among the means using the LSD post hoc test. The results of these tests as well as the adjusted means and standard deviations, are reported in Table 2. For adolescents in regional areas sports-only participants and sports-plus-activities participants consumed alcohol significantly more often than activities-only participants and non-participants. Metropolitan-dwelling adolescents who were sports only participants and non-participants consumed alcohol at significantly higher levels than activities-only participants and sports plus activities.

Table 2

<table>
<thead>
<tr>
<th>Portfolio</th>
<th>Non-Participation</th>
<th>Sports Only</th>
<th>Activities Only</th>
<th>Sports plus Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regional</td>
<td>Adj. $M$</td>
<td>1.68$^{ab}$</td>
<td>2.20$^{ac}$</td>
<td>1.64$^{cd}$</td>
</tr>
<tr>
<td></td>
<td>$SD$</td>
<td>1.16</td>
<td>1.53</td>
<td>0.99</td>
</tr>
<tr>
<td>Metropolitan</td>
<td>Adj. $M$</td>
<td>2.17$^{ab}$</td>
<td>2.04$^{cd}$</td>
<td>1.65$^{ac}$</td>
</tr>
<tr>
<td></td>
<td>$SD$</td>
<td>1.86</td>
<td>1.40</td>
<td>1.20</td>
</tr>
</tbody>
</table>

*Note.* Adjusted means in the same row that share superscripts differ at $p < .05$ for the LSD comparisons. Adjusted mean with covariate of age = 14.84 years.

**Bivariate Relations among Variables for Mediation Model**

**Rationale.** As previous results indicated that the location of participants moderated the portfolio link to adolescent alcohol use, subsequent analyses examined portfolio effects separately for regional and metropolitan students. In addition, results from the ANCOVA, specifically related to the alcohol use for the types of activity in the portfolio, indicated that the levels of alcohol use by students who engage in sport may
be affected by non-sporting activity participation. Therefore all participants were allocated, using a dichotomous yes or no measure, to a new category to reflect participation in sport; *sports-participation*, (0 = no, 1 = yes), and similarly all participants were allocated, to a new category to reflect participation in non-sporting activities; *activities-participation*, (0 = no, 1 = yes). To determine whether or not participating in sports had some unique effects related to adolescent alcohol use, there was a need to control for non-sporting activity participation for the regression analyses.

**Correlations.** Bivariate correlations were used to test the association between participation types, adolescent alcohol use and perceived peer alcohol use before multivariate testing for potential mediational pathways. Group-specific, (*regional, metropolitan*) correlations among all variables included in the analyses are presented in Table 3. As noted earlier, the theoretical literature on adolescent alcohol use and age suggest that these two constructs are related. As expected, significant positive relations between measures of age and adolescent alcohol use were found for both locations.

There was a significant negative relationship between sports participation and age for metropolitan students, indicating that older youth were less likely to participate in sport; however, this relationship was not significant for regional students. For metropolitan students, non-sporting activities participation had a significant negative correlation with adolescent alcohol use and perceived peer alcohol use; however, for regional students these relationships were non-significant. For regional students, sports participation was significantly positively related to alcohol use and to perceived peer alcohol use. However, for metropolitan youth these relationships were non-significant. For both metropolitan and regional students, adolescent alcohol use was significantly positively correlated with perceived peer alcohol use.
### Table 3

Adolescent Reports of Participation, with Age, Adolescent Alcohol Use, and Perceived Peer Alcohol Use: Correlations for Regional\(^a\) and Metropolitan\(^b\) Locations and Descriptive Statistics

<table>
<thead>
<tr>
<th>Variables</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Age</td>
<td>–</td>
<td>-.13***</td>
<td>-.08**</td>
<td>.33***</td>
<td>.41***</td>
</tr>
<tr>
<td>2. Sports participation(^c)</td>
<td>.00</td>
<td>–</td>
<td>-.01</td>
<td>-.01</td>
<td>-.05</td>
</tr>
<tr>
<td>3. Activities participation(^d)</td>
<td>-.04</td>
<td>.01</td>
<td>–</td>
<td>-.11***</td>
<td>-.14***</td>
</tr>
<tr>
<td>4. Alcohol use</td>
<td>.32***</td>
<td>.14**</td>
<td>-.06</td>
<td>–</td>
<td>.58***</td>
</tr>
<tr>
<td>5. Peer alcohol use</td>
<td>.35***</td>
<td>.12**</td>
<td>-.05</td>
<td>.59***</td>
<td>–</td>
</tr>
</tbody>
</table>

Note. Items below the diagonal relate to regional students, items above the diagonal relate to metropolitan students.  
\(^a\)Listwise \(N = 573\); \(^b\) Listwise \(N = 1168\); \(^c\)Sports participation: 0 = no, 1 = yes; \(^d\)Non-sporting activity participation: 0 = no, 1 = yes.  
*p < .05. **p < .01. ***p < .001.

### Mediation Analyses

**Overview.** The correlations were examined to assess the utility of a mediational model for each sample group. Multiple regression analyses were used to test for peer activity as a mediator for the relations shown in Figure 1 using guidelines by Baron and Kenny (1986). To determine whether there were mediational pathways, four conditions were required to be met (Baron & Kenny, 1986; Holmbeck, 2002): (1) the independent variable (IV; sports participation) must be significantly associated with adolescent alcohol use (the dependent variable; DV); (2) there must be a significant relationship between the IV and perceived peer alcohol use (the mediator); (3) the mediator must be significantly associated with the DV; (4) the relationships between the IV and DV will no longer be significant or will be substantially reduced in the presence of the mediator.
The regression analyses controlled for age and non-sporting activity participation. To determine whether the total effect of sports participation on adolescent alcohol use was reduced significantly upon introduction of the mediator, the Sobel (1982) significance test was used with guidelines and Sobel macros from the Preacher and Leonardelli (2003) website. The Sobel test significance is determined for the $z$ value $\pm 1.96$ (Sobel, 1982). The percentage of the total effect that was mediated was also computed according to Holmbeck (2002).

**Predicting adolescent alcohol use.** Potential mediational pathways were isolated by examining the significant findings across Tables 4-6. The correlational associations between participation and adolescent alcohol use in Table 3 were also examined. To be included as a potential mediational pathway, the criteria for Conditions 1-3, as described above, had to be met.

**Sporting participation.** For regional students the relationship of sports participation (the predictor) to adolescent alcohol use (the outcome) was established by regressing adolescent alcohol use on sports participation while controlling for age and non-sporting activity participation (Condition 1). Sports participation was a significant positive predictor of adolescent alcohol use; see Table 4, and Figure 5. Thus, Path $c$ was significant, and the requirement for mediation in Condition 1 was met. To establish that sports participation was related to perceived peer alcohol use (the hypothesised mediator), perceived peer alcohol use was regressed on the sports participation variable while controlling for age and non-sporting activity participation (Condition 2). Sports participation was significantly positively associated with perceived alcohol use, and thus the requirement for Condition 2 was met (Path $a$ was significant); see Table 5, and Figure 5. To test whether perceived peer alcohol use was associated with adolescent alcohol use, adolescent alcohol use was regressed simultaneously on both perceived peer alcohol use and sports participation while controlling for age and non-sporting
activity participation (Condition 3). Perceived peer alcohol use was a significant positive predictor for adolescent alcohol use; see Table 4, and Figure 5. Thus, the requirement for Condition 3 was met (Path b was significant). For Condition 4, the total effect of sports participation on adolescent alcohol use was reduced upon introduction of the mediator. However, Holmbeck (2002) has recommended examining this finding with the Sobel test. The Sobel (1982) $z$-test revealed that the indirect path of sports participation to adolescent alcohol use via perceived peer alcohol use was significant, $z = 2.92, p < .01$.

![Figure 5. Mediation model for associations between sports participation and adolescent alcohol use, as mediated by perceived peer alcohol use, for regional students. Note. Values on paths are path coefficients (standardised $\beta$s). Path coefficients inside parentheses are correlations.

*p < .05, **p < .01, ***p < .001.*]
Table 4

*Regression Results for Prediction of Adolescent Alcohol Use from Participation for Regional Students (n = 573)*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Model 1</th>
<th></th>
<th></th>
<th>Model 2</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>SE</td>
<td>β</td>
<td>B</td>
<td>SE</td>
<td>β</td>
</tr>
<tr>
<td>Constant</td>
<td>-4.49</td>
<td>0.77</td>
<td>-.205</td>
<td>-2.05</td>
<td>0.68</td>
<td>.13***</td>
</tr>
<tr>
<td>Age</td>
<td>0.42</td>
<td>0.05</td>
<td>.32***</td>
<td>0.17</td>
<td>0.05</td>
<td>.13***</td>
</tr>
<tr>
<td>Activity participation&lt;sup&gt;a&lt;/sup&gt;&lt;sup&gt;b&lt;/sup&gt;</td>
<td>-0.13</td>
<td>0.11</td>
<td>-.05</td>
<td>-0.07</td>
<td>0.09</td>
<td>-.03</td>
</tr>
<tr>
<td>Sports participation&lt;sup&gt;a&lt;/sup&gt;</td>
<td>0.45</td>
<td>0.12</td>
<td>.14***</td>
<td>0.26</td>
<td>0.11</td>
<td>0.08*</td>
</tr>
<tr>
<td>Peer alcohol use</td>
<td></td>
<td></td>
<td></td>
<td>0.66</td>
<td>0.05</td>
<td>.53***</td>
</tr>
<tr>
<td>$R^2$</td>
<td></td>
<td></td>
<td>.13</td>
<td></td>
<td></td>
<td>.37</td>
</tr>
<tr>
<td>$F$ for change in $R^2$</td>
<td></td>
<td></td>
<td>27.41***</td>
<td>217.75***</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note.*<sup>a</sup> 0 = no, 1 = yes;<sup>b</sup> non-sporting activity participation.

*p < .05, **p < .01, ***p < .001.*
Table 5

*Regression Results for Prediction of Perceived Peer Alcohol Use from Participation*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Regional ((n = 576))</th>
<th>Metropolitan ((n = 1203))</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(B)</td>
<td>(SE B)</td>
</tr>
<tr>
<td>Constant</td>
<td>-3.70</td>
<td>0.61</td>
</tr>
<tr>
<td>Age</td>
<td>0.37</td>
<td>0.41</td>
</tr>
<tr>
<td>Activity participation(^a)^</td>
<td>-0.09</td>
<td>0.09</td>
</tr>
<tr>
<td>Sports participation(^a)</td>
<td>0.29</td>
<td>0.10</td>
</tr>
<tr>
<td>(R^2)</td>
<td>.14</td>
<td></td>
</tr>
<tr>
<td>(F)</td>
<td>31.42***</td>
<td></td>
</tr>
</tbody>
</table>

*Note.* \(^a\)0 = no, 1 = yes; \(^b\)non-sporting activity participation.

*p < .05. **p < .01, ***p < .001.*
In addition, according to Holmbeck (2002), full mediation (100%) in social sciences is unlikely. To determine the percentage to account for partial mediational effects he suggests using the following mathematical relationship with the unstandardised regression coefficients: Indirect effect = Total effect (path c; 0.45) – Direct effect (path c’; 0.26) equalling 0.19 followed by: again using the unstandardised regression coefficients, Indirect effect / Total effect = the percentage of the x → y path accounted for by the mediator or 0.19 / 0.45 = 0.42. Using this model, roughly 42% of the path from sports participation to adolescent alcohol use was accounted for by the mediator, perceived peer alcohol use (Holmbeck, 2002).

For metropolitan students there was not a significant relationship between sports participation and levels of adolescent alcohol use (Table 3). Therefore, because the first condition for mediation was not satisfied, mediation was discontinued (Baron & Kenny, 1986). However, as this study controlled for non-sporting activity participation, this variable was included in the bivariate correlations, and a significant negative relationship between non-sporting activity participation and levels of adolescent alcohol use was identified for the metropolitan students (Table 3). From this result it was considered that a potential mediational pathway could be tested, controlling for sports participation, and age, to determine if associations between non-sporting activity participation and lower levels of adolescent alcohol use were mediated by lower levels of perceived peer alcohol use. Again, a potential mediational pathway had to meet the criteria for Conditions 1-3, as described above.

*Non-sporting activity participation.* For metropolitan students, the relationship of non-sporting activity participation (the predictor) to adolescent alcohol use (the outcome) was established by regressing adolescent alcohol use on the non-sporting activity participation variable while controlling for age and sports participation (Condition 1). Non-sporting activity participation had a significant negative relation
with adolescent alcohol use; see Table 6, and Figure 6. To establish whether or not non-sporting activity participation was related to perceived peer alcohol use (the hypothesised mediator), perceived peer alcohol use was regressed on non-sporting activity participation, while controlling for age, and sports participation (Condition 2). Non-sporting activity participation was significantly negatively associated with perceived alcohol use; see Table 5, and Figure 6. To test whether perceived peer alcohol use was associated with adolescent alcohol use, adolescent alcohol use was regressed simultaneously on both perceived peer alcohol use and non-sporting activity participation while controlling for age and sports participation (Condition 3). Perceived peer alcohol use was a significant positive predictor for adolescent alcohol use; see Figure 6, and Table 6.

Figure 6. Mediational model for associations between non-sporting activities participation and adolescent alcohol use, as mediated by perceived peer alcohol use, for metropolitan students.

Note. Values on paths are path coefficients (standardised βs). Path coefficients inside parentheses are correlations.

*p < .05, **p < .01, ***p < .001.
Table 6

*Regression Results for Prediction of Adolescent Alcohol Use from Participation for Metropolitan Students (n = 1203)*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Model 1</th>
<th></th>
<th>Model 2</th>
<th></th>
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</thead>
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<tr>
<td></td>
<td>B</td>
<td>SE B</td>
<td>β</td>
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<tr>
<td>Constant</td>
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<td>Sports participation</td>
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<td>0.10</td>
<td>0.08</td>
</tr>
<tr>
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<td>0.65</td>
<td>0.03</td>
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<td>.35</td>
<td></td>
</tr>
<tr>
<td>$F$ for change in $R^2$</td>
<td>49.72***</td>
<td></td>
<td>425.87***</td>
<td></td>
</tr>
</tbody>
</table>

*Note.  *0 = no, 1 = yes;  *a*non-sporting activity participation.

*p < .05.  **p < .01, ***p < .001.*
For Condition 4, following the addition of perceived peer alcohol use, the negative relation between non-sporting activity participation and adolescent alcohol use dropped to non-significance. The Sobel (1982) $z$-test revealed that the indirect path of non-sporting activity participation to adolescent alcohol use via perceived peer alcohol use was significant, $z = -4.03, p < .001$. According to Holmbeck’s (2002) calculations roughly 70% of the path from non-sporting activities participation to adolescent alcohol use was accounted for by the mediator, perceived peer alcohol use (Holmbeck, 2002).

**Discussion**

The first aim of this study was to extend previous research on extracurricular activity participation, specifically by distinguishing youth who spend their time predominantly in sport from youth who combine sport with other activities and their associated alcohol use, and then to examine whether gender and location might moderate this association for a sample of Australian adolescents. The results of this study indicate that adolescent alcohol consumption differed depending on whether the adolescents participated in sports exclusively (as their only organised activity) or combined sports with other non-sporting organised activities. The relation between extracurricular activity participation and alcohol consumption also depended on whether or not the adolescent was located in a regional or metropolitan area.

The first hypothesis was partially supported because levels of alcohol use were significantly higher for sports-only participants than for those students who participated in activities-only or were non-participants; however, levels of alcohol consumption were not significantly higher for students who combined sport with other non-sporting activities. The second hypothesis was supported with location moderating the activity portfolio link to adolescent drinking. For regional students, participating in sports-only or sports-plus-
activities predicted significantly higher levels of alcohol use than other activity portfolios, whereas for metropolitan students participating in sports-only or no activities predicted significantly higher levels of alcohol use than portfolios that included non-sport activities. The third hypothesis was not supported, as gender did not have an impact on the link between sports participation and levels of alcohol consumption for this group of Australian students.

The second aim of this study was to determine if perceived peer use of alcohol mediated the relation between sports participation and alcohol use. The results suggest that, for regional sports participants, friends’ drinking mediates students’ own alcohol use, but this was not found for metropolitan sports participants. It should be kept in mind that because these findings come from self-report data of an Australian student population, global generalizations are limited; also, because the study is cross-sectional in nature, cause-and-effect cannot be determined. These are important limitations that will be discussed following more detailed consideration of the main findings.

Adolescent Alcohol Use and Participation in Extracurricular Activities

The first purpose of the study was to gain an insight into levels of adolescent alcohol consumption for metropolitan and regional Australian students who participate in extracurricular activities. Before examining adolescents’ level of alcohol use, the patterns of participation were examined to observe whether participation in extracurricular activities was as expected or whether differences were observed for gender or location. The data from this study support the trend within Australia toward high participation rates in organised sporting activities for youth; in fact, these students’ sport participation rate was at higher levels than the Australian average for similar age groupings (ABS, 2006). This high rate may be due, in part, to self-selection bias, because the information letter sent to
students and parents to recruit for this survey was about activity participation. Therefore, the survey was more likely to be of interest to those students who participated in activities, and those students not involved in extracurricular activities would be less motivated to respond.

The main gender-related findings for participation patterns were that males participated in sports-only more than was expected and females participated in non-sporting activities or combined sport with other activities more than expected. These results, as well as previous research, suggest that males participate in sports as their dominant form of organised activity at greater rates than females (Crosnoe, 2002; Harrison & Narayan, 2003). The gender difference pertaining to girls’ having greater breadth in their participation portfolio has also been reported previously, but not for Australian youth (Eccles & Barber, 1999; Simpkins et al., 2008).

Students in regional areas were participating in sports-only more than expected, with their metropolitan counterparts combining sport with other activities at higher levels than was expected. Regional students were overrepresented among non-participants relative to metropolitan students. As previously suggested, adolescents in regional Australia have restricted access to facilities and expert personnel related to the arts (Australian Council for the Arts, 2000; Tonts, 2005). Research has also suggested that rural youth have limited extracurricular activity opportunities (Quine et al., 2003), so it is not surprising that the participation rates in non-sporting activities are lower than expected. Regional towns in Australia maintain and finance sporting facilities, and trained coaches are readily available (Tonts & Atherley, 2005), so it is also not surprising that participation rates in regional sports are higher than expected. Levels of adolescent alcohol use for this study were within
the range found for a sample of Australian adolescents of similar age and as predicted age was significantly, positively associated with alcohol use (AIHW, 2007).

Taking into consideration these participation rates for extracurricular activities and alcohol use, initial examination of the levels of alcohol use among the activity portfolios indicated that students who participated in sports-only had higher levels of alcohol use than those students who were non-participants or who participated in activities-only. These results concur with previous research related to sports participation (Eccles & Barber, 1999; Garry & Morrissey, 2000; Harrison & Narayan, 2003); however, the first hypothesis that sports-only participants would have higher levels of alcohol use when compared to other portfolios of participation, was not fully supported. In particular, this study predicted a difference in levels of alcohol use between sports-only and sports-plus-activities participants because of three underlying premises: first, youth who engage exclusively in playing sports may have more time than youth with more eclectic portfolios to engage in unsupervised leisure, which has been linked with higher levels of alcohol use (Osgood & Anderson, 2004; Osgood et al., 2005); second, combining sport with other activities was thought to be associated with having a wider pool of friends with whom to interact, creating opportunities to have more friends with positive characteristics (Simpkins et al., 2008); and third, previous research has found non-sporting activities to be protective with respect to substance abuse (including alcohol use; Fredricks & Eccles, 2006b; Mahoney et al., 2006).

However, contrary to these predictions and the previous research of Harrison and Narayan (2003), on examination of the findings from the full sample of students there were no significant differences between the alcohol consumption for sports-only participants compared to those who combined sport with other activities. Therefore at this stage of the research it could not be concluded that, higher alcohol consumption is linked to sports
participation for youth who primarily participate in sport as their only organised activity. Further investigations of the data were carried out using guidance from the bioecological framework.

Using a bioecologically guided conceptual framework and research methodology; examination of the data related to the *person* factor of gender indicated that the findings were not significant. Gender did not interact with the students’ activity portfolio and their level of alcohol use. However, examination of *contextual* factors indicated that adolescents’ alcohol use differed depending on the type of activity participation, and whether they were located in regional or metropolitan settings.

*Regional versus Metropolitan Developmental Context*

The regional environment stood out as a setting for high levels of alcohol use for students when they participated in sport, whether sport was their dominant form of organised activity participation or was combined with other activities. If they participated in activities-only or were non-participants, students’ levels of alcohol use were significantly lower. Metropolitan students, however, had significantly higher levels of alcohol use when they participated in sports-only when compared to students who participated in sports-plus-activities or activities-only. By splitting the sample into two subgroups of metropolitan and regional students, this study found that for metropolitan students, but not for regional students, these results replicate Harrison and Narayan’s (2003) results, whereby alcohol use among the sports-only group was comparable to that of the non-participants, and this sports-only group had significantly higher levels of alcohol use than the sports-plus-activities and activities-only groups. Hence for the metropolitan students, the hypothesis that sports-only participants would have higher levels of alcohol use than those with other types of activity participation was supported.
These findings address the gaps in the literature concerning the influence of location, which can affect the relationship between sports participation and levels of alcohol use among adolescents. Although researchers have investigated levels of alcohol use in metropolitan and regional environments (Atav & Spencer, 2002; Levine & Coupey, 2003; Vazsonyi, Trejos-Castillo, & Young, 2008), no research to date has examined the interaction between location and sports participation. The findings of this study coupled with the literature suggesting that within these venues, the majority of members of sporting clubs in regional Australia drink alcohol (Duff, et al., 2005; Martens et al., 2007; Snow & Munro, 2000), indicate that participation in sport presents opportunities for regional adolescents to spend time in sporting clubs where they may interact with other members of their sporting organization in the presence of alcohol.

It is also important to note that for regional students, choosing not to participate in any activities was least risky for alcohol use; however, for metropolitan students, choosing not to participate at all was associated with the highest level of alcohol use (although not significantly different from the sports-only participants). Therefore, previous research (Osgood & Anderson, 2004) that suggested that some unsupervised, unstructured after-school leisure activities were linked with higher levels of alcohol use may be true primarily for youth in metropolitan areas but perhaps not for regional youth. Considering that the rates of non-participation were higher than expected among regional students, coupled with the data showing that these students had the lowest rate of alcohol use, it is not unreasonable to consider factors related to geographic isolation as an explanation for the data.

High schools in regional Australia are set in large centers that on average service towns located within a 50-100 km radius; therefore, for some students a large part of their
time after school would be spent being transported home from school (except for a small percentage of regional students who board at metropolitan schools). Thus, time to participate in extracurricular activities becomes limited and geographic isolation means less proximity to a variety of peers. This would suggest that these students may have fewer opportunities to associate with peers who are using alcohol, resulting in less alcohol use.

As found in previous research (Osgood & Anderson, 2004), consumption of alcohol among youth is partly a function of opportunity, therefore when adolescents are unsupervised and in the company of peers they may have more chances to consume alcohol. These results seem to suggest that these opportunities are present for metropolitan non-participants but may be less available for regional non-participants. According to the bioecological perspective, for regional youth who do not participate in any activity, proximal processes related to peer interactions surrounding alcohol use may be less salient than for their metropolitan counterparts. However, as our research suggests, though these regional non-participants are using alcohol significantly less often than their metropolitan counterparts, further investigation into their time use is necessary to ascertain their well-being in other areas of youth development. Do regional non-participants receive support from caring adults and peers in places other than the extracurricular activity setting, so that they can develop and practice social, physical, and cognitive skills that are necessary for positive youth development (Eccles et al., 2003; Lerner, 2002), or are they socially isolated by factors present in their environment?

**Peer Mediation**

The second aim of this study was to determine if perceived peer alcohol use mediated the relation between sports participation and adolescent alcohol use. For both the metropolitan and regional sample of students, perceived peer alcohol use was significantly
positively associated with adolescent alcohol use as suggested by previous research (Jaccard et al., 2005). For regional students, sports participation was significantly positively associated with adolescent alcohol use and with peer alcohol use; however, for metropolitan youth there was no association between sports participation and alcohol use or perceived peer alcohol use. Interestingly, for metropolitan students there were significant negative associations between non-sporting activity participation and adolescent alcohol use and perceived peer alcohol use. These correlational findings supported further analyses and were tested for mediational pathways involving participation types, perceived peer alcohol use and adolescent alcohol use.

As adolescents spent time in sport, they are likely to form friendships with their teammates, which would result in adolescents spending time socialising with their sporting peers (Barber et al., 2005; Eccles & Barber, 1999). Because there is a strong link between alcohol consumption and sport, particularly in regional areas (Duff, et al., 2005; Martens et al., 2007; Snow & Munro, 2000), it was expected that the socialising environment around sport to include the use of alcohol. It was therefore predicted that the perceived alcohol use of sports participants would mediate relations between sports participation and adolescent alcohol use as was found in previous research for metropolitan team sport participants, by Blomfield (2006). This prediction was confirmed, but only for students living in regional areas. This mediational model finding indicates that after controlling for non-sporting activity participation, alcohol use by sports participants in regional areas was mediated by perceived peer alcohol use. As the current research also suggests that sport is the dominant activity for regional adolescents and because of the cultural sport-alcohol link, athletes’ peer networks may be more likely to be biased toward drinking, which can affect their own drinking behaviour. Previous research has suggested that the influence of peers is thought
to occur through peer pressure, or association with alcohol-using peers (Borsari & Carey, 2001) and the current results suggest that peer effects are present for sporting participants in a regional setting. The association between sports participation and higher alcohol availability in the sporting club environment in regional areas (Duff, et al., 2005; Martens et al., 2007; Snow & Munro, 2000), could intensify the effects of peer alcohol use. Further studies need to clarify how physical and social availability of alcohol for sporting participants varies in regional and metropolitan sporting clubs.

The finding that perception of peer drinking did not mediate the relationship between sports participation and alcohol use for metropolitan students was also of interest. This finding suggests that metropolitan students may have friendship networks that are distributed differently than regional students; they may have friends who drink alcohol in sports similar to regional sport participants however, as they also participate in activities at higher than expected levels they may have a wider pool of different peers from which to form their social networks, including peers with different characteristics (positive and negative; Simpkins et al., 2008). It is therefore plausible that although metropolitan students participate in sport, they may not rely solely on their peers within their sporting environment for their social interactions; they may choose their friends from other non-sporting activities in which they participate. These speculations led to testing for other mediational pathways. Further analyses indicated that for metropolitan students, lower levels of perceived peer alcohol use partially mediated the effects between non-sporting activity participation and lower levels of adolescent alcohol use.

For metropolitan students there are more opportunities to choose from a wide variety of activities other than sport (Australian Council for the Arts, 2000). It is not surprising that in these metropolitan neighbourhood contexts, athletes interact with a wider
variety of peers who might influence their behaviours. The results of the current study for metropolitan students are consistent with the finding of Simpkins et al., (2008) that students with a wider breadth of participation have friends who tend to drink less and that this in turn predicts their alcohol use. It is possible that the lower level of alcohol use for metropolitan students who participate in sport and non-sporting activities is attributable to lower perceived peer alcohol use when students spend part of their after-school-time engaged in non-sporting activities.

Consequently both mediational analyses involving peer behaviours revealed information about underlying mechanisms that may explain group differences between activity participation profiles in adolescent alcohol use (Eccles & Barber, 1999). It must be noted that the cross-sectional nature of this study precludes definitive statements about the direction of influence for these results. Nevertheless these results provide support for the suggestion that organised extracurricular activities provide an everyday setting where youth can interact with their peers and that this setting, combined with contextual effects, may play a role in youths’ development (Bronfenbrenner & Morris, 2006).

**Limitations**

These findings should be considered within their limitations. First, the constructs were all assessed at one point in time within a cross-sectional study; therefore it is difficult to ascertain directionality among relationships postulated in the proposed mediational models. For example, the indirect association between sports participation and students’ alcohol use may operate in reverse, such that adolescents’ affiliations with peers using alcohol may influence them to choose to join sporting organizations that provide access to a drinking culture. To overcome these limitations, longitudinal research is favoured, as previous research using longitudinal data suggests that the development of adolescent
alcohol use can be tracked over time and associates differentially with particular types of activity participation (Eccles & Barber, 1999; Barber et al., 2001; Barber et al., 2005). Therefore, to enable stronger tests of the hypotheses, longitudinal research is required, preferably with an Australian sample of students, to determine the causal order of the relationships between activity participation and adolescent alcohol use.

Second, self-selection factors can limit the utility of the findings, as it is difficult to separate the influences of the person and context characteristics that lead them to participate, from the influences of participating in the extracurricular activity itself (for full review, see Feldman & Matjasko, 2005). In an effort to address problems associated with the characteristics of individuals who may self-select into a certain type of participation, or those characteristics known to be associated with youth alcohol use, this study controlled for age in the ANCOVA’s and investigated gender as a moderator. Gender was not found to be significant. Age was a significant covariate in the ANCOVA’s and was found to be significant in the regression. For the mediational analyses, to determine the effects of sports participation aside from the effects of non-sporting activities participation for students who combined sport with non-sporting activities, this study controlled for the non-sporting participation category, which meant that for the sports-plus-activities group, perceived peer alcohol use could be examined independently of their non-sporting activity participation.

Third, these findings may be subject to reporter bias whereby the associations between an adolescent’s own behaviours and perceived peer characteristics may have been falsely inflated because correlations for all the measures were from the same respondent. Adolescents can project their own behaviour onto their friends, thus inflating the association between adolescent alcohol use and peer characteristics; this may lead to biased estimates of peer effects (Page, Hammermeister, & Roland, 2002). However, Borsari and
Carey (2001) noted in their review that if research specified that students comment on their best friend’s drinking habits, these adolescents did not appear to overestimate this figure compared to their estimates of group behaviours. This study did not ask about best friends, it asked about friends in the particular activity group; it is unknown if these friends constituted the adolescents’ best friends or formed a wider network of friends. Borsari and Carey (2001) also noted that descriptive norms, described as the adolescents’ perception of their friends drinking, rather than the true amount of friend drinking, will influence adolescent drinking rates. Whether or not, peer alcohol use is inflated through self-report on peers it is the perception that is important. From the point of view of the adolescent it is the perception that is likely to influence their own attitudes and behaviours therefore self-report is preferable for this study.

Self-report has also been consistently used to collect data on adolescent development and has been found to provide valid and reliable measures of adolescent alcohol use and information on activity participation (Eccles & Barber, 1999; Barber et al., 2001; Feldman & Matjasko, 2005; Fredricks & Eccles, 2006a; 2006b). Finally, the current study was also limited by a relatively broad examination of the context of sports participation and would benefit from an examination of the particular codes played, as some high status sports in Australia have particularly strong drinking cultures (Black, Lawson, & Fleishman, 1999; Snow & Munro 2000).

Future Directions

These findings call for further investigation into the risk and protective factors that relate to extracurricular activity participation and adolescent alcohol use. Longitudinal studies will procure more information about causality. Also, further investigation into whether or not increasing non-sporting activities for regional students improves their
developmental outcomes related to alcohol use, as well as examining the well-being of regional non-participants, will aid and guide policy-makers in their decisions about regional development. The initiative by the Australian Government to implement the ‘Good Sports Club’ program (Duff et al., 2005) to improve the responsible serving of alcohol in sporting clubs may have an impact over time on the norms that affect particular behaviours related to the alcohol culture that surrounds sport; thus the effects of this initiative could be considered when interpreting data in the future. From a bioecological perspective historical changes need to be considered when interpreting findings related to the effects of alcohol use on youth development.

Conclusion

This study adds to the literature documenting the importance of examining extracurricular activity participation and its associated developmental outcomes, particularly as related to adolescent alcohol use, using the bioecological framework. Using this framework has enabled us to uncover how distal effects related to the locality of students can influence the adolescents’ participation in certain types of extracurricular activities, and result in different developmental outcomes related to Australian adolescents’ use of alcohol. Adolescents are affected by their peers and by the community in which they live; but conversely their own behaviour could have a reciprocal effect on their peers. Our results seem to suggest that peers may play a mediational role to maintain the drinking culture associated with participating in sport among regional students or help to reduce drinking rates among metropolitan students who combine sport with non-sporting activities. Identifying the proximal process of peer interaction, by examining the underlying mechanism of peer effects on adolescent alcohol use, could help policymakers to identify more specific ways to target intervention/prevention programs to reduce adolescent
drinking, especially when it is related to participation in sport. The present findings support
the initiatives of the Australian Government to continue to implement and monitor the
‘Good Sports Program’ which aims to develop structural changes and promote new norms
and behaviours to reduce alcohol-related problems surrounding sports clubs, particularly
adolescent drinking in regional sports clubs.
References


Blomfield, C. J. & Barber, B. L. (2009). Performing on the stage, the field, or both? 


[www.drugslibrary.stir.ac.uk/documents/riskydrinking.pdf](http://www.drugslibrary.stir.ac.uk/documents/riskydrinking.pdf)


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Appendix 1
Youth Activity Participation Survey
Western Australia
2009

Thank you for choosing to participate in this survey. As the survey is completely confidential please try and answer all the questions as openly and honestly as you can. If you do not feel comfortable answering any of the questions please feel free to leave them blank.

ID Number _______________________

Date of Birth (dd/mm/yy) _______ / _______ / _______

What year are you in at school? □ Year 9 □ Year 10 □ Year 11 □ Year 12

If you are in Year 12, how many T.E.E. subjects are you doing? _______

Do you board (live) at your school? □ Yes □ No

What is your gender? □ Male □ Female

What suburb/town do you live in? __________________________ Post Code: _______

What education have your parents completed?
(Please tick all boxes that apply for each parent.)

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<th>Father</th>
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<tr>
<td>□</td>
<td>□</td>
<td>Finished University</td>
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</table>
Q1) Have you participated in any organised school sports/teams outside of physical education classes in this school year? (Please circle all the sports you do and indicate how many hours per week you participate in each of the sports you have selected).

If you don’t participate in any school-based sports please go onto the next page.

Example:

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School-Based Sports (not Phys Ed)

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<td></td>
<td>Rugby</td>
<td></td>
</tr>
<tr>
<td>Basketball</td>
<td></td>
<td>Soccer</td>
<td></td>
</tr>
<tr>
<td>Cricket</td>
<td></td>
<td>Softball</td>
<td></td>
</tr>
<tr>
<td>Cycling</td>
<td></td>
<td>Swimming/Diving</td>
<td></td>
</tr>
<tr>
<td>Football (AFL)</td>
<td></td>
<td>Tennis</td>
<td></td>
</tr>
<tr>
<td>Hockey</td>
<td></td>
<td>Touch Rugby</td>
<td></td>
</tr>
<tr>
<td>Netball</td>
<td></td>
<td>Volleyball</td>
<td></td>
</tr>
<tr>
<td><strong>Other</strong> (please specify)</td>
<td></td>
<td><strong>Other</strong> (please specify)</td>
<td></td>
</tr>
</tbody>
</table>
Q2) Have you participated in any of the following organised sports outside of school in this school year? (Please circle all the activities you do and indicate how many hours per week you participate in each of the activities you have selected).

If you don’t participate in any out-of-school-based sports please go onto the next page.

Example:

<table>
<thead>
<tr>
<th>Activity</th>
<th>Approx hrs/week</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soccer</td>
<td>1.5 hrs per week</td>
</tr>
</tbody>
</table>

**Out-of-School Sports**

<table>
<thead>
<tr>
<th>Activity</th>
<th>Approx hrs/wk</th>
<th>Activity</th>
<th>Approx hrs/wk</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SPORTS</strong></td>
<td></td>
<td><strong>SPORTS</strong></td>
<td></td>
</tr>
<tr>
<td>Athletics</td>
<td></td>
<td>Horse riding/Pony club</td>
<td></td>
</tr>
<tr>
<td>Baseball</td>
<td></td>
<td>Karate/Taekwondo</td>
<td></td>
</tr>
<tr>
<td>Basketball</td>
<td></td>
<td>Netball</td>
<td></td>
</tr>
<tr>
<td>BMX</td>
<td></td>
<td>Rugby</td>
<td></td>
</tr>
<tr>
<td>Body Boarding</td>
<td></td>
<td>Soccer</td>
<td></td>
</tr>
<tr>
<td>Boxing</td>
<td></td>
<td>Squash</td>
<td></td>
</tr>
<tr>
<td>Cricket</td>
<td></td>
<td>Surfing</td>
<td></td>
</tr>
<tr>
<td>Cycling</td>
<td></td>
<td>Swimming/Diving</td>
<td></td>
</tr>
<tr>
<td>Football (AFL)</td>
<td></td>
<td>Tennis</td>
<td></td>
</tr>
<tr>
<td>Golf</td>
<td></td>
<td>Touch Rugby</td>
<td></td>
</tr>
<tr>
<td>Gymnastics</td>
<td></td>
<td>Volleyball</td>
<td></td>
</tr>
<tr>
<td>Hockey</td>
<td></td>
<td>Other (please specify)</td>
<td></td>
</tr>
<tr>
<td>Other (please specify)</td>
<td></td>
<td>Other (please specify)</td>
<td></td>
</tr>
</tbody>
</table>
Q3) Please specify which sporting activity you spend the most time in
(If you do not participate in any sporting activities please go to section B on page 10)

 Q

Q4) Is this a school-based activity? (e.g. school team)

☐ Yes  ☐ No

Q5) How many hours per week (not including school time) do you spend in this activity?

☒ Hours

☐ Not currently active (not participating right now, for example the sport is out of season)

Q6) How many months/years have you been participating in this activity?

☒ Years  ☒ Months

Q7) Do you participate in this activity on your own or with a group of other people around your age?

☐ On my own

☐ In a group

Q8) Other participants in this activity are

☐ The same sex as me

☐ A mixture of boys and girls

Q9) How much time do you spend interacting with an adult during this activity?

(Circle one)

None of  ☐ a little of  ☐ all

of the
The following questions are related to the sporting activity you chose in question 3.

**Q10)** Based on your involvement in this activity please rate whether you have had the following experiences by ticking the appropriate box.

<table>
<thead>
<tr>
<th>Experience</th>
<th>1 Not At All</th>
<th>2 A Little</th>
<th>3 Quite A Bit</th>
<th>4 Yes, Definitely</th>
</tr>
</thead>
<tbody>
<tr>
<td>Was able to experience the challenges of being a leader</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>This activity got me thinking about who I am</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tried doing new things</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Learned I had a lot in common with youth from different backgrounds</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tried a new way of acting around people</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I do things in this activity I don’t get to do anywhere else</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Started thinking more about my future because of this activity</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I felt like what I did made a difference</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Experienced feeling liked by others in this activity</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Others in this activity counted on me</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>This activity has stressed me out</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I learned to control my temper</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>This activity has been a positive turning point in my life</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Became better at dealing with fear and worry</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Had an opportunity to be in charge of a group of peers</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I set goals for myself in this activity</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>When I start something in this activity I always try my best to finish it</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Item</td>
<td>1 Not At All</td>
<td>2 A Little</td>
<td>3 Quite A Bit</td>
<td>4 Yes, Definitely</td>
</tr>
<tr>
<td>---------------------------------------------------------------------</td>
<td>--------------</td>
<td>------------</td>
<td>---------------</td>
<td>-------------------</td>
</tr>
<tr>
<td>Had to consider possible obstacles when making plans</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Got to know people in the community</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I made friends with someone new</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I put all my energy into this activity</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Had the chance to push myself</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Had to focus my attention</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Became better at handling stress</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Worked with other people my own age on a common goal</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Had experiences with organizing time and not procrastinating (not putting things off)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Learned about setting priorities</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Practiced self discipline</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Made friends with someone from a different ethnic or cultural group</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Had to find ways to achieve my goals</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I have been successful in this activity</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Felt like I didn’t belong in this activity</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Came to feel more supported by the community</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>In this activity I saw that hard work pays off</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>When this activity is difficult I keep trying anyway</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Learned to get along with others</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Made friends with someone from a different social class (someone from a family who were more or less well off than my family)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I regularly achieve what I aim to in this activity</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>This activity has given me many opportunities to improve my abilities</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Came to feel more a part of my community</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I felt like what I did mattered</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Q11) The following questions are about the adult leader in your sport; if your sport does not involve an adult leader please go onto question 12.

<table>
<thead>
<tr>
<th>The adult leader in this activity.....</th>
<th>1 Not At All</th>
<th>2 A Little</th>
<th>3 Quite A Bit</th>
<th>4 Yes, Definitely</th>
</tr>
</thead>
<tbody>
<tr>
<td>Encourages me to always try my best</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Supports me when I am having difficulties</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Puts too much pressure on me during this activity</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Makes me feel like I can succeed in this activity</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Listens to my point of view</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Puts me down in front of others in this activity</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Creates a strong positive environment</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Q12) How true for you are the following statements about your parents, when participating in your sport?

I worry about letting my parents down when I play this sport.

Not at all  true  Very
true for me    for
me         1 2 3 4 5

My parents and I have fun going to my games/competitions.

Not at all  true  Very
true for me    for
me         1 2 3 4 5

No matter how well I do in my sport, my parents don’t think its good enough.

Not at all  true  Very
true for me    for
me         1 2 3 4 5
This sport has improved my relationship with my parents.

Not at all 1 2 3 4 5
Yes, definitely

My parents get upset with me when I don’t do well in this sport.

Not at all 1 2 3 4 5
Very true
ture for me

This sport interfered with doing things with my family.

Not at all 1 2 3 4 5
Very true
ture for me

My parents support or help me with this sport.

Not at all 1 2 3 4 5
Very true
ture for me

How pleased do you think your parents are with how well you are doing in your sport this year?

Not at all 1 2 3 4 5
Extremely pleased

Q 13) Please read the following statements about your sport and respond by circling one number.

How important is it to you to be good at this sport?

not at all very important
important
How much do you enjoy participating in this sport?

1 2 3 4 5 6

Compared to other kids your age, how good do you feel you are at this sport?

One of the
Worst
Best

1 2 3 4 5 6

Participating in this sport gives me a strong feeling that this is who I am

Never
Always

1 2 3 4 5 6

During this sport I feel so involved that nothing seems to matter

Never
Always

1 2 3 4 5 6

During this sport I have a very high level of concentration

Never
Always

1 2 3 4 5 6

I become so involved in this sport that I lose track of time

Never
Always

1 2 3 4 5 6

I concentrate so intensely that I can’t think about anything else

Never
Always

1 2 3 4 5 6
Q14) What proportion of your friends participating in this sporting activity are...

Planning to go to university? (*Circle one number*)

<table>
<thead>
<tr>
<th>none</th>
<th>half</th>
<th>all</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>4</td>
<td>5</td>
<td></td>
</tr>
</tbody>
</table>

Doing very well in school?

<table>
<thead>
<tr>
<th>none</th>
<th>half</th>
<th>all</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>4</td>
<td>5</td>
<td></td>
</tr>
</tbody>
</table>

Encourage you to do your best in school?

<table>
<thead>
<tr>
<th>none</th>
<th>half</th>
<th>all</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>4</td>
<td>5</td>
<td></td>
</tr>
</tbody>
</table>

Regularly drink alcohol?

<table>
<thead>
<tr>
<th>none</th>
<th>half</th>
<th>all</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>4</td>
<td>5</td>
<td></td>
</tr>
</tbody>
</table>

Regularly use illegal drugs?

<table>
<thead>
<tr>
<th>none</th>
<th>half</th>
<th>all</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>4</td>
<td>5</td>
<td></td>
</tr>
</tbody>
</table>

Likely to skip class?

<table>
<thead>
<tr>
<th>none</th>
<th>half</th>
<th>all</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>4</td>
<td>5</td>
<td></td>
</tr>
</tbody>
</table>

More than one year older than you?

<table>
<thead>
<tr>
<th>none</th>
<th>half</th>
<th>all</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>4</td>
<td>5</td>
<td></td>
</tr>
</tbody>
</table>
Section B – Activity Participation

Q15) Which of the following activities or clubs at school have you participated in this school year outside of school classes? (Please circle all the activities you do and indicate how many hours per week you participate in each of the activities you have selected).

If you don’t participate in any school-based activities go to the next page.

Example:

<table>
<thead>
<tr>
<th>Activity</th>
<th>Approx hrs/week</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drama</td>
<td>4 hrs per week</td>
</tr>
</tbody>
</table>

School-Based Activities & Clubs

<table>
<thead>
<tr>
<th>Activity</th>
<th>Approx hrs/wk</th>
<th>Activity</th>
<th>Approx hrs/wk</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Arts and Performing Arts</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Art</td>
<td></td>
<td>Youth and health festival</td>
<td></td>
</tr>
<tr>
<td>Band or Orchestra</td>
<td></td>
<td>Modeling</td>
<td></td>
</tr>
<tr>
<td>Choir</td>
<td></td>
<td>Music lessons (please specify)</td>
<td></td>
</tr>
<tr>
<td>Dance</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Drama</td>
<td></td>
<td>Other (please specify)</td>
<td></td>
</tr>
<tr>
<td>Rock – Eisteddfod</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Clubs</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chess club</td>
<td></td>
<td>School committee</td>
<td></td>
</tr>
<tr>
<td>Service clubs</td>
<td></td>
<td>School council</td>
<td></td>
</tr>
<tr>
<td>Computer game club</td>
<td></td>
<td>Debate club/Public speaking</td>
<td></td>
</tr>
<tr>
<td>Other (please specify)</td>
<td></td>
<td>Other (please specify)</td>
<td></td>
</tr>
</tbody>
</table>
Q16) Have you participated in any of the following activities or clubs outside of school in this school year? (Please circle all the activities you do and indicate how many hours per week you participate in each of the activities you have selected).

If you don’t participate in any out-of-school activities go onto the next page.

Example:

<table>
<thead>
<tr>
<th>Activity</th>
<th>Approx hrs/week</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cadets</strong></td>
<td>2.5 hrs per week</td>
</tr>
</tbody>
</table>

### Out-of-School Activities & Clubs

<table>
<thead>
<tr>
<th>Activity</th>
<th>Approx hrs/wk</th>
<th>Activity</th>
<th>Approx hrs/wk</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Arts and Performing Arts</strong></td>
<td></td>
<td><strong>Community band</strong></td>
<td></td>
</tr>
<tr>
<td>Community band</td>
<td></td>
<td><strong>Dance club/competitions</strong></td>
<td></td>
</tr>
<tr>
<td>Private band</td>
<td></td>
<td><strong>Music lessons</strong> (Please specify)</td>
<td></td>
</tr>
<tr>
<td>Drama club</td>
<td></td>
<td><strong>Other</strong> (Please Specify)</td>
<td></td>
</tr>
<tr>
<td><strong>Recreational Clubs</strong></td>
<td></td>
<td><strong>Computer gaming/networking</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Other</strong> (Please specify)</td>
<td></td>
<td><strong>Surf life saving</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Service Clubs</strong></td>
<td></td>
<td><strong>Church/Youth groups</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Other</strong> (Please Specify)</td>
<td></td>
<td><strong>Volunteer/service work</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Scouts/Girls, Boys Clubs</strong></td>
<td></td>
<td><strong>Other</strong> (Please Specify)</td>
<td></td>
</tr>
</tbody>
</table>
Q17) If you have circled any non-sporting activities please tell us which one you spend the most time in. (If you do not participate in any non-sporting activities please go to Section C on page 18)

Q18) Is this a school-based activity? (e.g. school team)

☐ Yes  ☐ No

Q19) How many hours per week (not including school time) do you spend in this activity?

☐ __________ Hours

☐ Not currently active (not participating at this time)

Q20) How many months/years have you been participating in this activity?

☐ __________ Years  ☐ ________ Months

Q21) Do you participate in this activity on your own or with a group of other people around your age?

☐ On my own

☐ In a group

Q22) Other participants in this activity are

☐ The same sex as me

☐ A mixture of boys and girls

Q23) How much time do you spend interacting with an adult during this activity?

(Circle one)

None of the  ☐ a little of  ☐ all
The following questions are related to the non-sporting activity you chose in question 17.

Q24) Based on your involvement in this activity please rate whether you have had the following experiences by ticking the appropriate box.

<table>
<thead>
<tr>
<th>Experience</th>
<th>1 Not At All</th>
<th>2 A Little</th>
<th>3 Quite A Bit</th>
<th>4 Yes, Definitely</th>
</tr>
</thead>
<tbody>
<tr>
<td>Was able to experience the challenges of being a leader</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>This activity got me thinking about who I am</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tried doing new things</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Learned I had a lot in common with youth from different backgrounds</td>
<td></td>
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</tr>
<tr>
<td>Tried a new way of acting around people</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>I do things in this activity I don’t get to do anywhere else</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Started thinking more about my future because of this activity</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I felt like what I did made a difference</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Experienced feeling liked by others in this activity</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Others in this activity counted on me</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>This activity has stressed me out</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I learned to control my temper</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>This activity has been a positive turning point in my life</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Became better at dealing with fear and worry</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Had an opportunity to be in charge of a group of peers</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>I set goals for myself in this activity</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>When I start something in this activity I always try my best to finish it</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Had to consider possible obstacles when making plans</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1 Not At All</td>
<td>2 A Little</td>
<td>3 Quite A Bit</td>
<td>4 Yes, Definitely</td>
</tr>
<tr>
<td>--------------------------------</td>
<td>--------------</td>
<td>------------</td>
<td>---------------</td>
<td>-------------------</td>
</tr>
<tr>
<td>Got to know people in the community</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I made friends with someone new</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I put all my energy into this activity</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Had the chance to push myself</td>
<td></td>
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<tr>
<td>Had to focus my attention</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Became better at handling stress</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Worked with other people my own age on a common goal</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Had experiences with organizing time and not procrastinating (not putting things off)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Learned about setting priorities</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Practiced self discipline</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Made friends with someone from a different ethnic or cultural group</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Had to find ways to achieve my goals</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I have been successful in this activity</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Felt like I didn’t belong in this activity</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Came to feel more supported by the community</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>In this activity I saw that hard work pays off</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>When this activity is difficult I keep trying anyway</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Learned to get along with others</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Made friends with someone from a different social class (someone from a family who were more or less well off than my family)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I regularly achieve what I aim to in this activity</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>This activity has given me many opportunities to improve my abilities</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Came to feel more a part of my community</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I felt like what I did mattered</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**Q25) The following questions are about the adult leader in your activity; if your activity does not involve an adult leader please go onto question 26.**

<table>
<thead>
<tr>
<th>The adult leader in this activity.....</th>
<th>1 Not At All</th>
<th>2 A Little</th>
<th>3 Quite A Bit</th>
<th>4 Yes, Definitely</th>
</tr>
</thead>
<tbody>
<tr>
<td>Encourages me to always try my best</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Supports me when I am having difficulties</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Puts too much pressure on me during this activity</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Makes me feel like I can succeed in this activity</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Listens to my point of view</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Puts me down in front of others in this activity</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Creates a strong positive environment</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Q26) How true for you are the following statements about your parents, when participating in your activity?**

I worry about letting my parents down when I play this activity.

Not at all true for me | Very true for me
1 2 3 4 5

My parents and I have fun going to my performances/ club activities.

Not at all true for me | Very true for me
1 2 3 4 5

No matter how well I do in my activity, my parents don’t think its good enough.

Not at all true for me | Very true for me
1 2 3 4 5

This activity has improved my relationship with my parents.

Not at all | Yes, definitely
1 2 3 4 5
My parents get upset with me when I don’t do well in this activity.

Not at all       Very true
true for me      for me
1               2               3               4               5

This activity interfered with doing things with my family.

Not at all       Very true
true for me      for me
1               2               3               4               5

My parents support or help me with this activity.

Not at all       Very true
true for me      for me
1               2               3               4               5

How pleased do you think your parents are with how well you are doing in your activity this year?

Not at all       Extremely
pleased          pleased
1                2                3                4                5

Q27) Please read the following statements about your non-sporting activity and respond by circling one number.

How important is it to you to be good at this activity?

not at all       very important
important
1                2                3                4                5                6

How much do you enjoy participating in this activity?

a little         a lot
1                2                3                4                5                6

Compared to other kids your age, how good do you feel you are at this activity?

One of the       One of the
Worst           Best
1                2                3                4                5                6
Participating in this activity gives me a strong feeling that this is who I am

Never 1 2 3 4 5 Always 6

During this activity I feel so involved that nothing seems to matter

Never 1 2 3 4 5 Always 6

During this activity I have a very high level of concentration

Never 1 2 3 4 5 Always 6

I become so involved in this activity that I lose track of time

Never 1 2 3 4 5 Always 6

I concentrate so intensely that I can’t think about anything else

Never 1 2 3 4 5 Always 6
Q28) What proportion of your friends participating in this activity are...

Planning to go to university? (Circle one number)

<table>
<thead>
<tr>
<th>none</th>
<th>half</th>
<th>all</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>4</td>
<td>5</td>
<td></td>
</tr>
</tbody>
</table>

Doing very well in school?

<table>
<thead>
<tr>
<th>none</th>
<th>half</th>
<th>all</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>4</td>
<td>5</td>
<td></td>
</tr>
</tbody>
</table>

Encourage you to do your best in school?

<table>
<thead>
<tr>
<th>none</th>
<th>half</th>
<th>all</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>4</td>
<td>5</td>
<td></td>
</tr>
</tbody>
</table>

Regularly drink alcohol?

<table>
<thead>
<tr>
<th>none</th>
<th>half</th>
<th>all</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>4</td>
<td>5</td>
<td></td>
</tr>
</tbody>
</table>

Regularly use illegal drugs?

<table>
<thead>
<tr>
<th>none</th>
<th>half</th>
<th>all</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>4</td>
<td>5</td>
<td></td>
</tr>
</tbody>
</table>

Likely to skip class?

<table>
<thead>
<tr>
<th>none</th>
<th>half</th>
<th>all</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>4</td>
<td>5</td>
<td></td>
</tr>
</tbody>
</table>

More than one year older than you?

<table>
<thead>
<tr>
<th>none</th>
<th>half</th>
<th>all</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>4</td>
<td>5</td>
<td></td>
</tr>
</tbody>
</table>

Please go on to Section D on Page 19
Q29) What proportion of your friends are...

Planning to go to university? (Circle one number)

none 1 2 half 3 all 4 5

Doing very well in school?

none 1 2 half 3 all 4 5

Encourage you to do your best in school?

none 1 2 half 3 all 4 5

Regularly drink alcohol?

none 1 2 half 3 all 4 5

Regularly use illegal drugs?

none 1 2 half 3 all 4 5

Likely to skip class?

none 1 2 half 3 all 4 5

More than one year older than you?

none 1 2 half 3 all 4 5
### Section D

**Q30)** If you participate in any of the following activities outside of school hours please tell us how many hours per week you spend in each activity?

<table>
<thead>
<tr>
<th>How many hours per week do you spend in each of these activities?</th>
<th>Hours per week</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Paid Work</strong> (part time/casual job, not including work from parents)</td>
<td></td>
</tr>
<tr>
<td><strong>Doing homework or studying</strong> (outside of school)</td>
<td></td>
</tr>
<tr>
<td><strong>Home chores</strong> (doing dishes, cleaning)</td>
<td></td>
</tr>
<tr>
<td><strong>Taking care of younger siblings</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Practicing or playing a musical instrument</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Watching Television</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Working out or physical activity</strong> (on your own or at the gym, not as a part of an organised sports activity)</td>
<td></td>
</tr>
<tr>
<td>Please Specify</td>
<td></td>
</tr>
<tr>
<td><strong>Computer Console Gaming</strong> (Playstation, X-Box etc)</td>
<td></td>
</tr>
<tr>
<td>Which game do you play the most?</td>
<td></td>
</tr>
<tr>
<td><strong>Internet Gaming</strong> (online games)</td>
<td></td>
</tr>
<tr>
<td>Which one do you play the most?</td>
<td></td>
</tr>
<tr>
<td><strong>Internet Usage – Social Networking</strong> (webchat, MySpace)</td>
<td></td>
</tr>
<tr>
<td>Which one do you use the most?</td>
<td></td>
</tr>
<tr>
<td><strong>Internet Usage – Other</strong> (downloading music, ebay)</td>
<td></td>
</tr>
<tr>
<td>Please specify</td>
<td></td>
</tr>
</tbody>
</table>
**Hobbies** (model making, scrapbooking etc)

What hobbies do you do the most?

| 1 | 2 | 3 | 4 | 5 |

---

**Section E – About You**

Q31) Please read the following statements and rate how true each statement is for you. *(Circle one number)*

I feel really good about the way I look

Not at all | Very true | true for me | for me

| 1 | 2 | 3 | 4 | 5 |

Overall I am satisfied with my physical abilities

Not at all | Very true | true for me | for me

| 1 | 2 | 3 | 4 | 5 |

I feel really good about what I can do physically

Not at all | Very true | true for me | for me

| 1 | 2 | 3 | 4 | 5 |

I am very happy with the appearance of my body

Not at all | Very true | true for me | for me

| 1 | 2 | 3 | 4 | 5 |
Overall I am satisfied with my appearance

Not at all  Very true
true  for me
true for me
for me

I am very happy with my performance in physical activities

Not at all  Very true
true  for me
true for me
for me

Section F

Q32) Please read the following statements and rate how true each statement is for you. (Circle one number)

I am very good at making friends

Not at all  Very true
true  for me
true for me
for me

If I don’t understand something in class I know I am capable of learning it

Not at all  Very true
true  for me
true for me
for me

I am able to do most things very well

Not at all  Very true
true  for me
true for me
for me

If I work really hard I could be one of the best students in my school year

Not at all  Very true
true  for me
true for me
for me
I am always comfortable talking to other people my age

<table>
<thead>
<tr>
<th>Not at all true for me</th>
<th>Very true for me</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>5</td>
<td>6</td>
</tr>
</tbody>
</table>

A lot of things about me are good

<table>
<thead>
<tr>
<th>Not at all true for me</th>
<th>Very true for me</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>4</td>
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<tr>
<td>5</td>
<td>6</td>
</tr>
</tbody>
</table>

I have the ability to be good at most school subjects if I try

<table>
<thead>
<tr>
<th>Not at all true for me</th>
<th>Very true for me</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
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<tr>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>5</td>
<td>6</td>
</tr>
</tbody>
</table>

If I really try I can be good at almost anything I want to

<table>
<thead>
<tr>
<th>Not at all true for me</th>
<th>Very true for me</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
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<tr>
<td>3</td>
<td>4</td>
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<tr>
<td>5</td>
<td>6</td>
</tr>
</tbody>
</table>

It is important to me to do well in school

<table>
<thead>
<tr>
<th>Not at all true for me</th>
<th>Very true for me</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
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<tr>
<td>3</td>
<td>4</td>
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<tr>
<td>5</td>
<td>6</td>
</tr>
</tbody>
</table>

I have a lot to be proud of

<table>
<thead>
<tr>
<th>Not at all true for me</th>
<th>Very true for me</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
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<tr>
<td>3</td>
<td>4</td>
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<tr>
<td>5</td>
<td>6</td>
</tr>
</tbody>
</table>

I always feel like I am part of a group of friends

<table>
<thead>
<tr>
<th>Not at all true for me</th>
<th>Very true for me</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>5</td>
<td>6</td>
</tr>
</tbody>
</table>

Q33) How often are the following statements true for you?
I like the way things are going for me.

<table>
<thead>
<tr>
<th>Never</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>Almost always</th>
<th>6</th>
</tr>
</thead>
</table>

My life is going well.

<table>
<thead>
<tr>
<th>Never</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>Almost always</th>
<th>6</th>
</tr>
</thead>
</table>

I would like to change many things about my life.

<table>
<thead>
<tr>
<th>Never</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>Almost always</th>
<th>6</th>
</tr>
</thead>
</table>

I have a good life.

<table>
<thead>
<tr>
<th>Never</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>Almost always</th>
<th>6</th>
</tr>
</thead>
</table>

I feel good about what’s happening to me.

<table>
<thead>
<tr>
<th>Never</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>Almost always</th>
<th>6</th>
</tr>
</thead>
</table>

**Q33) How often do you.....**

Feel good about yourself? *(Circle one number)*

<table>
<thead>
<tr>
<th>never</th>
<th>daily</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

Lose your appetite or eat a lot when you get upset?

<table>
<thead>
<tr>
<th>never</th>
<th>daily</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

Feel that difficulties are piling up so high that you can’t overcome them?

<table>
<thead>
<tr>
<th>never</th>
<th>daily</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

Feel satisfied with who you are?

<table>
<thead>
<tr>
<th>never</th>
<th>daily</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>
Feel that you are capable of coping with most of your problems?

never
1  2  3  4  5  6
daily

Feel lonely?

never
1  2  3  4  5  6
daily

Keep a cool head in emergencies?

never
1  2  3  4  5  6
daily

Feel sure about yourself?

never
1  2  3  4  5  6
daily

Feel unhappy, sad or depressed?

never
1  2  3  4  5  6
daily

Feel there is nothing nice you can look forward to?

never
1  2  3  4  5  6
daily

Section G – You and School

Q34) Please rate how true the following statements are for you. (Circle one number)

How much do you like school?

Not at all
A lot

1  2  3  4  5  6

I feel like I really belong in my school
Not at all    Very
true for me for
true for me for
true for me for
true for me for
true for me for
1  2  3  4  5
1  2  3  4  5
1  2  3  4  5
1  2  3  4  5
1  2  3  4  5

School is interesting

I feel that working hard at school is a waste of my time

I enjoy school activities

I would like to leave school as soon as I can

I believe that succeeding at school is important

I look forward to going to school
I know that school can be boring but I try hard anyway because it will lead to better opportunities for me in the future.

Q35) How likely is it that you will go to university after high school?

Section H – About Your Friends

Q36) Please answer the following questions about your friends (circle one number)

My friends treat me well

I wish I had different friends

My friends are great.
My friends are nice to me.

Not at all
true
true for me
for me
1 2 3 4 5

Compared to other teenagers in your school, how popular are you?

Least
Most
Popular
Popular
1 2 3 4 5

Section I – About Your Family

Q37) Please answer the following questions about your family. (Circle one number)

I enjoy being at home with my family.

Not at all
true
true for me
for me
1 2 3 4 5

My family gets along well together.

Not at all
true
true for me
for me
1 2 3 4 5

I like spending time with my parents.
Not at all       Very
true for me     for
true for me
me
1    2    3    4    5

My parents and I do fun things together.

Not at all       Very
true for me     for
true for me
me
1    2    3    4    5

Section J

Q38) Have you ever created your own profile online that others can see, like on a social networking site like Myspace, Bebo, or Facebook (This does not include MSN/Yahoo)?

☐ No  skip questions below; go to Section K, Page 30
☐ Yes  answer the questions below.

What is the profile you use, or update most often?  
__________________________

How long have you had your profile?  
__________________________

Answer the following questions about the profile (Myspace/Bebo/Facebook) you use the most often. Please tick the applicable answer.

Q39) Is your profile set to public or private?
☐ Public  ☐ Private

Q40) About how often do you visit your profile?
☐ Never
☐ Less than once a month
☐ Every few weeks
☐ 1-2 days a week
☐ 3-5 days a week
Q41) How often do you change your profile (e.g. change status, change personal information, add photos)?
- Never
- Less than once a month
- Every few weeks
- 1-2 days a week
- 3-5 days a week
- About once a day
- Several times a day

Q42) Is any of the personal information (e.g. interests, etc) you have on your profile not true?
- Yes
- No

How often do you use Myspace/Bebo/Facebook etc to:

Make new friends (*please select one*)
- Never
- Less than once a month
- Every few weeks
- 1-2 days a week
- 3-5 days a week
- About once a day
- Several times a day

Stay in touch with friends you rarely see in person (*please select one*)
- Never
- Less than once a month
- Every few weeks
- 1-2 days a week
- 3-5 days a week
- About once a day
- Several times a day

Make plans with your friends (*please select one*)
- Never
- Less than once a month
- Every few weeks
- 1-2 days a week
- 3-5 days a week
About once a day
Several times a day

Flirt with someone (please select one)
Never
Less than once a month
Every few weeks
1-2 days a week
3-5 days a week
About once a day
Several times a day

Q43) How important is it to you to have a lot of friends on your network?
Not at all
Very
important
important

1  2  3  4  5

Q44) How many friends do you have on your profile? ____________________

Q45) Compared to other people your age with a profile, how many friends on
do you have?
A lot less than others
A little less than others
About the same as others
A bit more than others
A lot more than others

Q46) Have you ever deleted a friend? (Do not include ‘Tom’ from MySpace)
Yes
No

Q47) How often do you usually communicate online with friends you met on
the internet, who you didn’t know from before?
Never
Less than once a month
Every few weeks
1-2 days a week
3-5 days a week
About once a day
Several times a day
Q48) How much do you agree/disagree with the following statements?

Myspace/Bebo/Facebook has become part of my daily routine.

Completely disagree                      
Completely agree                      

I feel out of touch when I haven’t logged on to Myspace/Bebo/Facebook.

Completely disagree                      
Completely agree                      

Section K

Q49) The following questions ask you about behaviors that may be considered risky, if you are uncomfortable answering any of the questions feel free to leave them blank.

About how often in the last 6 months have you drunk alcohol? (Tick one box for each question)

<table>
<thead>
<tr>
<th>none</th>
<th>once</th>
<th>2-3 times</th>
<th>4-6 times</th>
<th>7-10 times</th>
<th>11-20 times</th>
<th>21-30 times</th>
<th>31 or more times</th>
</tr>
</thead>
</table>

About how often in the last 6 months have you had more than 5 alcoholic drinks on one occasion?

<table>
<thead>
<tr>
<th>none</th>
<th>once</th>
<th>2-3 times</th>
<th>4-6 times</th>
<th>7-10 times</th>
<th>11-20 times</th>
<th>21-30 times</th>
<th>31 or more times</th>
</tr>
</thead>
</table>

About how often in the last 6 months have you been drunk?

<table>
<thead>
<tr>
<th>none</th>
<th>once</th>
<th>2-3 times</th>
<th>4-6 times</th>
<th>7-10 times</th>
<th>11-20 times</th>
<th>21-30 times</th>
<th>31 or more times</th>
</tr>
</thead>
</table>

About how often in the last 6 months have you used illegal drugs?

<table>
<thead>
<tr>
<th>none</th>
<th>once</th>
<th>2-3 times</th>
<th>4-6 times</th>
<th>7-10 times</th>
<th>11-20 times</th>
<th>21-30 times</th>
<th>31 or more times</th>
</tr>
</thead>
</table>
none | once | 2-3 times | 4-6 times | 7-10 times | 11-20 times | 21-30 times | 31 or more times
---|---|---|---|---|---|---|---

About how often in the last 6 months have you **skipped school without parent permission**?

About how often in the last 6 months have you **done something you knew was dangerous just for the thrill of it**?

About how often in the last 6 months have you **damaged public property**?

About how often in the last 6 months have you **had contact with police for something you did or something they thought you did**? *(Tick one box for each question)*

About how often in the last 6 months have you **gotten suspended from school**?

About how often in the last 6 months have you **done some pretty risky things because you thought it was a kick**?

About how often in the last 6 months have you **gotten in a physical fight with another person**?
About how often in the last 6 months have you **cheated on an exam, or copied someone else’s homework?**

<table>
<thead>
<tr>
<th>none</th>
<th>once</th>
<th>2-3 times</th>
<th>4-6 times</th>
<th>7-10 times</th>
<th>11-20 times</th>
<th>21-30 times</th>
<th>31 or more times</th>
</tr>
</thead>
</table>

About how often in the last 6 months have you **taken something from a store without paying for it?**

<table>
<thead>
<tr>
<th>none</th>
<th>once</th>
<th>2-3 times</th>
<th>4-6 times</th>
<th>7-10 times</th>
<th>11-20 times</th>
<th>21-30 times</th>
<th>31 or more times</th>
</tr>
</thead>
</table>

About how often in the last 6 months have you **taken money from home that was not your own without asking?**

<table>
<thead>
<tr>
<th>none</th>
<th>once</th>
<th>2-3 times</th>
<th>4-6 times</th>
<th>7-10 times</th>
<th>11-20 times</th>
<th>21-30 times</th>
<th>31 or more times</th>
</tr>
</thead>
</table>

About how often in the last 6 months have you **not used your seatbelt in a car?**

<table>
<thead>
<tr>
<th>none</th>
<th>once</th>
<th>2-3 times</th>
<th>4-6 times</th>
<th>7-10 times</th>
<th>11-20 times</th>
<th>21-30 times</th>
<th>31 or more times</th>
</tr>
</thead>
</table>

---

**Section L**

**Q50) How would you describe your family background? (Tick all that apply)**

- ☐ Caucasian (Anglo-Australian, European or American)
- ☐ Aboriginal/Torres Strait Islander
- ☐ Asian
- ☐ Middle Eastern
- ☐ African
- ☐ Other (please specify) ☐ ________________________________

**In what country were you born? ☐ ________________________________**
If born outside Australia how old were you when you moved here? ☐ __________

In what country was your father born? ☐ ______________

In what country was your mother born? ☐ ______________

Q51) Are your parents?

☐ Married and living together all the time ☐ Divorced

☐ Married and living together but one works away a lot of the time (fly in-fly out)

☐ Living together in a marriage-like relationship ☐ Widowed/widower (parent(s) passed away)

☐ Separated

Does your father work for pay? ☐ Yes ☐ No

If your father is currently employed, what does he do in his job? ☐ ______________ ______

Does your mother work for pay? ☐ Yes ☐ No

If your mother is currently employed, what does she do in her job? ☐ ______________ ______

Q52) How much do you weigh? ☐ ______ What is your height? ☐ ______

Section M

Q54) Please read each item carefully and circle the answer that best corresponds to your agreement or disagreement:

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>I lose my temper easily.</td>
<td>SD</td>
<td>D</td>
<td>N</td>
<td>A</td>
</tr>
<tr>
<td>Statement</td>
<td>SD</td>
<td>D</td>
<td>N</td>
<td>A</td>
</tr>
<tr>
<td>--------------------------------------------------------------------------</td>
<td>----</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>I often get involved in things I later wish I could get out of.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I often act without stopping to think.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I have sometimes done things just for “kicks” or “thrills”.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I like to be where the action is.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>It takes a lot to get me angry.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I often crave excitement.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I try to do jobs carefully, so they won’t have to be done again.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>When a project gets too difficult, I’m inclined to start a new one.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I usually work quickly without bothering to check</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sometimes I’m not as dependable or reliable as I should be.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I’d have to be really sick before I’d miss a day of school.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I work hard to accomplish my goals.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I often get angry at the way people treat me</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I waste a lot of time before settling down to work.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I don’t feel like I’m driven to get ahead.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I strive for excellence in everything I do.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I have trouble making myself do what I should.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I often get into arguments.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Once I start a project, I almost always finish it.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

😊 End of Survey - Thank you for your participation😊
Appendix 2

Sample
Sample Street
Sample 6000

Dear Mr. Sample,

I am writing to ask you to consider the participation of School in the research project: Youth Activity Participation Study Western Australia (YAPS-WA) directed by myself, Professor Bonnie Barber (Murdoch University) and Professor Jacquelynne Eccles.

The research project, as noted in the attached press release by the Hon Julie Bishop (11-10-06), is being funded by a grant from the Australian Research Council, and will seek to investigate how youths’ involvement in extracurricular activities contributes to positive development. More specifically, we will examine whether involvement in extracurricular activities predicts improved academic performance and school attachment, less risk behaviour and better psychological adjustment among youths. Our previous research in the US points to the important role of voluntary extracurricular activities in positive youth development, and we have received funding to consider this connection here in WA. This important research has already received in principle support from the Department of Education and Training and the Catholic Education Office of Western Australia (letters of approvals attached).

I have selected your prestigious school for participation in YAPS-WA for numerous reasons. **promotes an achievement of excellence that fully develops one’s intellectual, moral, spiritual, social and physical capabilities. Through exceptional teaching facilities, such as the state of-the-art ***, in addition to high quality teaching, I strongly believe that your school offers an opportunity that is second to none. This is further evidenced by the extensive range of co-curricular activities, sporting programs, clubs and societies that *** presents. Thus, this high quality academic institution can provide a rich source of information on the benefits of extracurricular activity participation.

The research project consists of a survey, administered to students via wireless laptop computers (we provide), and will ask students about their experiences with their peers, school and other adults. Please note that the actual running of the survey (including all setting up etc) would be entirely conducted by the research team. Contained in the survey are questions about student’s participation in various extracurricular activities. Students will also be asked questions relating to their academic achievement, identity development, leadership experiences, risk behaviour (including drug and alcohol use) and psychological adjustment. Students will be informed that if they feel uncomfortable answering any of the questions that they may skip those questions.

All students in years 9 and 11 will be given the opportunity to participate, with the research aiming to recruit approximately 50 students from each year level. In order to study long-term benefits, the project is longitudinal in nature, with students being surveyed once a year for three years. Therefore, at the completion of the project, students initially in year 9 will be in year 11, and students initially in year 10 will be in year 12. All students in the two year groups will be provided with an information and consent form for their parent and for themselves. In order to participate, students and their parents must give written consent. Student participation in the research project would be voluntary and confidential. As the project will be collecting longitudinal data, identifying information will be collected in order to match data across different points in time. However, the
students will be assigned an identification number to ensure that their responses will not be directly stored with any personal identification information. No information about individuals or the school would ever be released – all publications will include only aggregated data.

In an effort to thank students for their interest in the research, all students who return their parental consent form, whether they have agreed to participate or not, will be entered into a raffle. It is anticipated that two raffles will be held, one for year 9’s and one for year 11’s, with a prize given out after the data collection has been completed each year. In an additional effort to show our appreciation, all students returning a parent consent form will be entered into a major prize-draw, where one student across all of the participating schools will win a major prize.

We will also supply your school with feedback from the study, providing interesting and useful information on how activity participation relates to positive outcomes such as school engagement. This feedback will consist of a report which provides an executive summary of the research findings, or if you would like, the research team will present the findings at your school.

There are a range of benefits that will result from the completion of this research project. First, the data will make a valuable contribution to the academic literature on activity participation and positive development. It is anticipated that the results of the project will be published in a range of high quality journals of the developmental literature. A list of some of our publications on activity participation from our US longitudinal study is attached as an indication of our track record in disseminating our research.

Second, this study will address crucial issues facing today’s youth such as school connectedness and wellbeing. Research on these issues is of great importance as findings have the potential to be of great benefit to policy makers, schools and most importantly to young people. With the help of your school, we will provide data which will be of national benefit, improving the health and wellbeing of Australian youth.

All members of the research team have obtained National Police Clearances and Working with Children Checks, with copies available upon request. The study has been given ethical approval by the Murdoch University Human Research Ethics Committee (letter of approval attached).

If you have any questions regarding any part of the study please do not hesitate to contact me on ********** or b.barber@murdoch.edu.au. I will be in contact with you next week to discuss the participation of your school in this study.

Kind Regards

Professor Bonnie Barber
Professor of Psychology
Murdoch University
Selected relevant publications


The Hon Julie Bishop MP
Minister for Education, Science and Training
Minister Assisting the Prime Minister for Women's Issues

MEDIA RELEASE

11 October 2006

Australians to prosper from $365 million in research projects

The Minister for Education, Science and Training, the Hon Julie Bishop MP, today announced $365,069,342 in Australian Research Council grants.

The 1,154 grants were awarded in the latest Australian Research Council funding round for its two major schemes - Discovery Projects and Linkage Projects - and three smaller schemes, Discovery Indigenous Researchers Development; Linkage Infrastructure, Equipment and Facilities; and Linkage International.

"The projects funded today affect the whole community. Issues that are important in the lives of all Australians such as our health and wellbeing, the environment, and national security are all represented in the successful research projects."

Among the many successful projects are research programs that will:

- study the role that participation in organised extracurricular activities may play in the healthy development of Australia’s youth (Murdoch University)
- develop micro-robots that will be powered to 'swim' through the vascular and digestive systems of the human body to perform medical tasks via remote control and, in many cases, avoid invasive major surgery (Monash University)
- investigate previously unmapped venom systems for divergent, bioactive proteins with practical implications for the treatment of envenomations (from sources such as snakes, spiders, mosquitoes and jellyfish), which is a recognised problem in Australia, as well as drug discovery and other commercial applications (The University of Melbourne)

1 http://www.arc.gov.au/media/releases/media_11Oct06.htm
• develop service delivery systems in the criminal justice system to better meet the needs of victims and witnesses (Monash University and Victoria Police).

Minister Bishop praised the 380 organisations partnering ARC-funded researchers in the Linkage Scheme, which have pledged a total of $105,481,215 in cash and in-kind to the successful projects, representing $1.77 for each dollar provided by the Government.

"When an independent organisation invests in an ARC-supported research program, it can be confident that it is committing its hard-earned dollars not only to a worthwhile project, but to a project undertaken by some of Australia's best researchers," Ms Bishop said.

In this round, average funding for Discovery Projects increased by 12 per cent on the previous funding round to $334,267 per project, while average Linkage Projects funding increased by 9 per cent on the previous funding round to $285,745 per project. The successful projects were selected from a record number of 4,834 applications and will begin in 2007.

The projects are funded under the ARC's National Competitive Grants Program, a component of the Government's 10-year $8.3 billion additional commitment to innovation under Backing Australia's Ability.

Media Contacts: Ms Bishop's Office: Tory Vidler 0414 228 727
Australian Research Council: Simon Sedgley 0412 623 054
Dear Parent,

The Australian Research Council has provided funding for a team directed by Professor Bonnie Barber at Murdoch University to undertake a project investigating the role that extracurricular activity participation plays on the healthy development of adolescents. The purpose of this study is to find out the range of developmental experiences that occur within different leisure activities and examine how these experiences promote positive development in today’s youth.

We are inviting students of Years 9 and 11 from ******** to participate in this important study regardless of whether or not they participate in extracurricular activities. In order to examine the long-term benefits of extracurricular activity participation, students will be surveyed once a year for three years.

With your consent, your child will complete a brief survey supplied by my research team. The survey will measure your child’s experiences with their peers, school and other adults, and his/her participation in various extracurricular activities such as music and sport. Your child will be asked questions relating to academic achievement, identity development, leadership experiences, risk behaviour (including drug and alcohol use) and psychological adjustment. Example questions include “How much do you like school?”, “What proportion of your friends are doing well in school?”, and “How often do you feel sure about yourself?”

Participation in this survey is voluntary and written consent is required from both yourself and your child before the survey is undertaken. There are no expectations held by myself or your child’s school that your child will participate. Your child is free to withdraw from the survey at any time, regardless of signed consent forms.

The survey is completely confidential – personal information and responses from individual surveys will not be made available to your child’s school and only aggregated data collected from many schools will be published. At the completion of the study an executive summary of results will be provided to your child’s school.

We plan to visit ******** to administer the survey to students on DATE****** Students with parental consent to participate will complete the survey during ************education. This survey will take approximately 40 minutes to complete.
In an effort to thank students for their interest in this study, all students who return the consent forms will be entered into two prize draws. The first draw will be a School Prize Draw, whereby two students will win a prize. We shall conduct the School Prize Draw when we are at the school.

The second draw will be a Major Prize Draw, in which students from all participating schools will select one prize from a list that they would like to win (see card attached). This draw will be made towards the end of the year. Students should note that their chance of winning a specified prize is dependent on how many students throughout the state select that particular prize, with approximately 2000 students taking part in the project. Students simply circle which prize on the card they would like to win, and return this card along with the consent forms.

There are some excellent major prizes to be won including:

If you are willing to allow your child to participate in this study, please complete the attached “Parent Consent Form” and return it to … by … If you have any questions about this project please feel free to contact me on 9360 2879, or alternatively you can contact Murdoch University's Human Research Ethics Committee on 9360 6677.

I am happy to discuss with you any concerns you may have on how this study has been conducted, or alternatively you can contact Murdoch University's Human Research Ethics Committee on 9360 6677.

Thank you for taking the time to consider your child’s involvement in this important study.

Yours sincerely,

Professor Bonnie Barber
Professor of Psychology
Murdoch University
PARENT CONSENT FORM

Project Title: Youth Activity Participation Study of Western Australia.

I ________________________________ being the parent/guardian of ________________________________
do / do not (circle one) consent to my child’s participation in the above research study. I understand the project requires my child to complete a brief survey once a year for the next 3 years during a class nominated by my child’s school.

I understand that my child’s participation is completely voluntary and confidential, and that I may withdraw consent at any time, without providing a reason.

Parent/Guardian:

Signed: ________________________________

Date:
Appendix 4

STUDENT CONSENT FORM: Student Participation in Research

School of Psychology

Project Working Title: The role of extracurricular activity participation in promoting healthy development of Australian youth

Dear Student,

The purpose of this study is to investigate your participation in extracurricular activities and the positive benefits these activities provide to you. You can help in this study by consenting to complete a survey. Should you participate it is anticipated that the time to complete the survey will be no more than 30-40 minutes. Contained in the survey are questions about your experiences during your participation in extracurricular activities and also questions about your friends, school and behaviour.

The survey is completely confidential; your survey answers will not be made available to your parents, peers or teachers. Participation in this survey is completely voluntary and written consent is required by you and your parent or guardian before you can complete the survey. As your participation is voluntary there will be no expectations held by either myself or your school that you will participate. You are free to withdraw from the survey at any time, without giving a reason, regardless of signed consent forms. You may also skip any questions that you feel uncomfortable with and would prefer not to answer.

A summary of results will be provided to your school at the completion of this research. These can be made available for all parents and students to read.

If you have any questions about this project please feel free to contact Professor Bonnie Barber, Chair of Psychology at Murdoch University, who is my supervisor for this research, on 9360 2879. My supervisor and I are happy to discuss with you any concerns you may have on how this study has been conducted, or alternatively you can contact Murdoch University's Human Research Ethics Committee on 9360 6677.

Please retain this letter for your information, and fill out and return the attached consent form if you are happy to participate in this study.

Regards

Professor Bonnie Barber

Chair of Psychology
Murdoch University
STUDENT CONSENT FORM

Project Title: Youth Activity Participation Study of Western Australia.

I__________, of Year _________ agree to participate in the above research project by completing a brief survey during class time.

I understand the information that has been provided to me about the project. Any questions I have asked have been answered to my satisfaction. I agree to take part in this project, and know that I may change my mind and stop at any time, without providing any reason. I am also aware that I may skip any questions that I do not feel comfortable answering.

I also understand that all information provided is confidential.

Student:

Signed: ____________________

Date:
Appendix 5

Notional intro script for YAPS data collection

First, all students should complete the student consent form and read the letter before we start. (Wait until they have signed before you go on.)

Good afternoon, I am ________________, from Murdoch University. We appreciate your being willing to participate in our survey today about your leisure time activities.

We want to let you know that it is completely confidential – no one here at school, nor your parents, will see your individual answers, so please be completely honest.

There are no right or wrong answers – we just want to know what YOU think about these things.

If you choose not to participate, that is up to you, as you are not required to – but we hope you will be willing to share your opinions about your leisure time activities with us.

There are two types of prize draws for those participating today. First, we will be drawing for a school prize in the next couple of weeks, after the Year 11 students have also completed the survey, so please be sure you have filled out your prize card with your contact details. Then, on the back, number in order your preference for a choice of either a Dockers or Eagles footy, or a $50 voucher for Music Gallery, which can be used towards an instrument, or for sheet music. Or, you can choose a Western Force visor and book, or Eagles stickers and player cards. So write down your first choice, second choice, and third choice on the back of your prize card for the school prize.

Example:

1. Eagles footy
2. music voucher
3. Western Force stuff

At the end of the term, we will draw for the prizes listed on the front of your card – from students across several schools in Perth. It is important you give us phone numbers where you could be reached in June – you can list two, a home phone and a mobile, if you like.

Instructions (Wait for students to complete prize cards, then continue)
The survey starts with 4 sections on sports and other activities.

The first set is about sports IN SCHOOL. If you do not play on a school team, skip this page. If you play on both a school team, and a team in your community or suburb, answer about the school team on the first section, and about the team you play on outside of school in the next section.

After you answer about your sports, please do the same for non-sports activities like music, clubs, and things like cadets. The school based ones are first, and then there is another page for the non-school ones.

FOR ALL OF THESE SPORTS AND ACTIVITIES, PLEASE THINK ABOUT THE ACTIVITIES YOU HAVE DONE IN THE PAST YEAR – SO NOT JUST THIS SCHOOL YEAR (SINCE JANUARY), BUT ALSO THOSE IN THE SECOND HALF OF THE PAST SCHOOL YEAR (SINCE LAST JULY).

Please put your hand up if you have any questions and I will come to you.