

# **The relevancy of ‘mates don’t let mates...’ as a key strategy for a school curriculum-based road safety program**

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## **Abstract**

### *Study objectives*

Among the leading causes of adolescent injuries are transport-related factors. School-based curriculum programs are a commonly used method to reduce such injury and these are typically focused on targeting change in known risk and protective factors particularly alcohol use. Another commonly identified risk factor for adolescent risk-taking is adolescents’ relationship with, and the influence of, their peers. The program evaluated in this paper however sought to explicate an alternative role of peers as a protective factor. The program, Skills for Preventing Injury in Youth (SPIY) was an eight lesson curriculum integrated program that has previously demonstrated its effectiveness in reducing road-related risk-taking behaviours. The aim of this paper is to provide a better understanding of some of the possible mechanisms of change for SPIY participants and in particular peer intervening behaviour.

### *Methods used & sources of data/ information*

Qualitative and quantitative methods were employed to understand adolescent perceptions of protecting and to evaluate change in motivation to protect. Focus groups with adolescents were used to provide a greater depth of understanding regarding intervening in friends’ road-related risk-taking and their motivation to do so. The quantitative component included an evaluation of the effectiveness of SPIY in increasing motivation to intervene. This component of the trial involved 230 intervention and 157 control students completing baseline and six-month follow-up surveys.

### *Results & Conclusions*

There was no significant difference between groups on motivation toward protecting their mates from road-related risk-taking. The qualitative data showed that this was a complex issue with multiple considerations affecting intervening behaviour including confidence regarding protection and the context of the risk situation. In sum, it appears that the program based on encouraging protective intervening to improve adolescent road safety can increase motivation to do so and that the issue of mates looking out for mates is a complicated yet relevant road safety strategy for adolescents.

## **Keywords**

Intervention, evaluation, adolescent, peer

## **Introduction**

Injury represents one of the most serious concerns for the health of adolescents with considerable concern reflected in national and international priorities (Department of Health & Aged Care, 2001; Krug, McGee & Peden, 2002). Many adolescents are at risk of injury as a result of lifestyle, with high morbidity and mortality rates primarily affected by engagement

in risk-taking behaviour (AIHW, 2004). Turner, McClure and Pirozzo (2004) define risk-taking behaviour as those with a potentially negative outcome whereby precautions are not taken or the danger is not recognised. It is argued that a control program for adolescents would reduce risk-taking behaviour associated with transport by identifying and changing precursors (Hawkins, Catalano, & Miller, 1992). That is, prevent injury by eliminating, reducing, mitigating the identified risk and/ or strengthening protective factors for risk-taking behaviour. The research presented in this paper examined the relevancy of adolescent friends' intervening behaviour as a protective factor for their reduced involvement in road-related risk-taking behaviour.

### **Adolescent traffic risk-taking and injury**

In 2002, 24% of injury deaths in Australia were from transport-related factors (suicide only exceeded these) (Kreisfeld, Newson, & Harrison, 2004). Australian hospitalisation data showed that among the most common external cause of injury were transport accidents among 12 to 24 year olds (AIHW, 2006). In an Australian study by Chapman and Sheehan (2005), 53% of 13 to 14 year olds sampled reported a transport-related injury in the previous six months. Further 16% of these students reported that they needed medical treatment for the transport-related injury.

Using self-report data, Chapman and Sheehan (2005) examined specific transport related injuries in a large sample of 13 to 14 year olds in South-East Queensland (n=661). The researchers found that 42.2% of students reported injuries associated with riding a bicycle and 18.1% for riding a motorcycle of these 9.5% and 16.2% required medical treatment respectively for each risk behaviour. As a passenger of a vehicle, 13.8% reported being injured and 16.9% of these required medical treatment. For the risk-taking behaviour of driving a car 5.7% were reportedly injured and 16.2% of these adolescents required medical treatment. The researchers also found that those with transport related injuries were more likely to require medical treatment and more likely to have been drinking alcohol than those with non-transport-related injuries.

A related issue is the prevalence of risk-taking behaviour associated with transport such as driving without a licence. Lam (2003) examined police records of crashes by drivers younger than the state licensing age and found that one-third of these crashes resulted in injury or death. The majority of these crashes were from male drivers (79.5%) however the odds ratio for injury as a result of a crash was twice as high for female underage drivers. A similar study was conducted in the U.S. state of Texas of 4,170 crashes of drivers aged 14 years and under (Huber, Carozza, & Gorman, 2006). The drivers were below the legal driving age. The study also found 61% of all the crashes from underage drivers were by males and 59% of these resulted in injury or death. The figures taken together highlight the serious need for strategies to promote road safety among young people.

### **The behaviour change target of adolescents' friends**

Developmental theorists suggest that as individuals move into adolescence, peer groups become an increasingly significant source of social relationship and play an integral role in shaping behaviour. Peers provide opportunities and experiences that are not available in other relationships (Hartup, 1996). Most commonly adolescent peers are considered only as a risk factor for adolescent engagement in transport risks. Firstly it is noted that adolescents who engage in road-related risk-taking are more likely to have friends who are similarly likely to report engaging in more road-related risks (Shope, Raghunathan & Patil, 2003). Secondly, research on young drivers has shown that the presence of peers in the car, particularly if they are male is associated with higher crash risk (Chen et al., 2000).

However positive peer behaviour has been shown to relate to adolescent risk-taking behaviours (e.g. Prinstein et al., 2001). While the research in this area is relatively sparse there is some support for examining friends' protective behaviour. Importantly it appears adolescents may have requisite cognitive skills, have prosocial beliefs consistent with protection and through their friendships they engage in protective behaviours.

Adolescents appear to describe prosocial behaviours that are consistent with avoiding harm of others. Bergin et al. (2003) conducted focus groups to assess young adolescents' (11-13 year olds) definition and understanding of prosocial behaviours. They found that salient prosocial behaviours included standing up for others, encouraging others, helping others develop skills, including those left out, and being humorous. Facilitating emotional regulations of others was reportedly one of the most common prosocial behaviours acknowledged. More specifically this included, containing one's own emotions, avoiding fights, displaying positive emotions (happy), avoiding hurting others feelings (apologise, laugh, include, and don't make fun of others), and actively helping peers contain their negative emotional states (e.g. calm aggression).

There is empirical research to suggest that adolescent adjustment benefits from relationships with peers and friends. During adolescence, friendships help meet many social and emotional needs and friends validate interests and offer affection and companionship (Armsden & Greenberg, 1987; Dekovic & Meeus, 1997; Furman & Buhrmester, 1985; Laible, Carlo & Raffaelli, 2000). The close relationship among friends might be linked to the potential for protection in several ways; research with college students indicated that prevention of friends' drink driving was more likely within close relationships (Adebayo, 1988). The close relationship and increased likelihood of proximity allows adolescent friends physical opportunities to be around risk-taking and thus the potential opportunities to engage in protective behaviour. Further, self-disclosure appears to strengthen friendships, particularly for females and it is said that friends share resources, give advice and support when needed (Rose & Asher, 1999). Flanagan et al. (2004) found that adolescents do report talking to friends as an intended protective behaviour.

#### *Evidence of peer intervening behaviour*

There is evidence to suggest that, particularly for young adults, friends may provide protection from risk-taking behaviour. For example, Shore and Compton (2000) examined the self-reported reasons for college students' attempting to stop someone from drink driving and the attempts of those who had experienced someone trying to stop them from driving after drinking. They found that increased likelihood of successful intervention if it took the form of a clear demand and concrete actions compared with pleas or suggestions. Adebayo (1988)

found that those who intervened did so by offering to drive or call taxi and more females took keys away from a driver who had been drinking.

There are a few adolescent studies examining friends' protection however they do not examine the effectiveness of protection strategies. In one study by Flanagan, Galley and Elek (2004) they found adolescents intended to protect their friends. From the responses to 2,697 adolescents in grades five to twelve of hypothetical vignettes found that the older group was more likely to ignore their friends' behaviour or take the keys away from a friend who had been drinking. The younger group's more common strategies included talking to the friend or an adult or ending the friendship.

Smart and Stoduto (1997) also examined adolescents' intervening behaviour in a large North American sample (n=1184). The researchers found that around one-third to one-half of students reported they had intervened in their friends' illegal drug use, smoking tobacco, drinking too much, and drink driving. Further, Patten et al (2004) found that among adolescent non-smokers (11 to 19 years old), 90% identified someone they thought should stop smoking and reported that they were willing to help that individual. The adolescents were most likely to be willing to help a same age friend or parent.

### *School-based behaviour change programs*

One of the commonly used approaches to changing adolescent behaviour has been to target them in the school setting. On many occasions and with regard to different behaviours, the school has demonstrated to be an effective medium for targeting adolescent behavioural change (Botvin et al., 1990; Sheehan et al., 1996; Shope et al., 1996; Perry, 1999). The school represents one of the more convenient targets for implementing a strategy of repeated messages. However there are challenges and considerable developmental work is needed to ensure that a school program is likely to be effective (Buckley & Sheehan, 2004). More effective school-programs involve interactive delivery methods (Tobler et al., 2000), are tailored to the developmental and cultural needs of the target group (Sussman et al., 2003), are implemented over longer periods with repeated messages (e.g. booster sessions) (Botvin & Gardner, 2004), have the support of the school and involve trained, skilled and committed facilitators (Fagan & Malic, 2003).

### *Research aims*

From the above, it is evident that schools can provide an effective setting for the behaviour change of young people. Further, although the evidence base for protection is limited, it appears that young adults and adolescents offer protection for their friends' risk-taking behaviour or would be willing to do so. This paper sought to understand whether a program that has previously demonstrated effectiveness (see Buckley, 2008) in reducing risk-taking behaviour was also able to improve young persons' motivation to protect their friends and their perceptions of this change if it occurred. The Skills for Preventing Injury in Youth (SPIY) Program was designed to bring about change in intervening behaviour as well as change individual attitudes toward reducing risk-taking.

## **Method**

### *SPIY Program*

The aims of SPIY were threefold: to decrease overall risk-taking behaviour by changing individual attitudes to risk; to increase skills in first aid; and to increase protective behaviour. The program was designed to fit with the aims of the Year 9 Health curriculum and as such required no additional class time over and above that already allocated to Health classes. The program included 8 lessons of 50 minute duration to be delivered once per week by the classroom teachers. Each lesson typically involved the presentation of a risk and injury scenario and was followed by learning about the first aid of the injury in that scenario. The remainder of the lesson involved activities designed to prevent the risk-taking that led to the injury. These activities were based on cognitive-behavioural strategies and the content was guided by the Theory of Planned Behavior (see Ajzen, 1985). The scenarios were designed to provide an opportunity to enable students to have an opportunity to practically apply skills to tangible situations. They were developed after multiple rounds of focus groups and consultation work with students and young people (see Buckley, 2005). The program demonstrated effectiveness in reducing risk-taking (Buckley, 2008).

### *Participants*

A total of 230 intervention students completed the questionnaires at both baseline and follow-up time periods with 157 students in the comparison group. All year 9s from two intervention schools were invited to participate along with all Year 9s from four comparison schools. The schools were in low socio-economic urban regions of South-east Queensland and invited through the school District Officers. Participants were mostly aged 13 or 14 years (95%), and approximately one half were male (46%). Most students were born in Australia (86%). A sub-sample of 70 intervention students (32 males) were involved in focus group discussions at the completion of the program.

### *Measures*

Demographics Students were asked to provide demographic information including age, sex, country of birth, and ethnic background.

Peer protection motivation A measure developed by Western and colleagues (2003) to look at intended protective or risky behaviour after their friends' engagement in 11 risk-taking behaviours was used. This study focused on students' intended behaviour to 'try and stop' their friends' engagement in the three road-related risk-taking behaviours.

Qualitative Prompts Participant experiences of the SPIY program and their perceived change were examined through the prompting of several open-ended questions, some example prompts include, "What did you learn last term?" and "Do you think you changed your behaviour of looking out for your friends?"

Some additional measures not relevant to this study were included.

### *Procedure*

Quantitative data collection took place at baseline, the week before intervention students began the program and again approximately six months after the conclusion of the program. The self-report questionnaire booklet was administered in approximately one class lesson of 45 minutes

The qualitative data collection with intervention students took place within a few weeks the intervention students completing the program and involved 10 groups of around 7 students from 3 randomly selected classes. The focus groups were facilitated by researchers trained in psychology and experienced in conducting focus groups. An introduction was to be read by all facilitators that reminded participants that differences of opinion were likely and were encouraged, responses were to be confidential and names should not be mentioned (also providing in writing). They were all given brief instructions about facilitating the semi-structured process. Probing questions were used to follow-up and elicit greater detail following from the first open-ended question. The procedure of the focus groups was such that the additional follow-on questions were used to enable clarification and enhancement of responses in a semi-structured format. No identifying information was collected from the participants however given the random selection of classes it is expected that they are representative of the wider group. Group discussions were audio taped and transcribed verbatim by a professional transcriber.

Transcripts were coded by thematic analysis with themes and concepts identified as those expressed with frequency, extensiveness, or intensity (Krueger, 1998). As each new theme emerged they were recoded until no new themes emerged. The first author, who moderated one of the focus groups, conducted the analysis. To improve the reliability and validity of the coding repeated consultations were held with the other author and other members of the research team. These individuals had been closely involved with the planning and design of the study and were able to bring ‘fresh eyes’ to the analysis (Lewis et al. 2007)

## Results

### *Quantitative Findings: Peer protective motivation*

To test any differences between the intervention and comparison groups on the peer protection motivation to protect a friend from road-related risk-taking the differences at baseline were first examined. The intervention group and control groups did not differ significantly from each other at baseline on motivation to try and stop friends’ road-related risk-taking [ $\chi^2=4.957(3)$ ,  $p=.187$ ]. A chi-squared test was then conducted on the follow-up data and the group differences were non-significant [ $\chi^2=1.371(3)$ ,  $p=.712$ ]. The percentage of those who indicated that they would try and stop any of road-related risk-taking behaviours for the baseline and follow-up periods are presented in table 1.

Table 1

*Percentage of Motivation to Protect for the Intervention and Control Participants at Baseline and Follow-up*

	Intervention	Control
Baseline	80%	85%
Follow-up	72%	76%

### *Qualitative Findings*

Focus group data was examined in relation to students’ motivation to protect their friends post-injury as well as in preventing injury. These are described.

Protecting Friends: Post-injury A common theme was an intention to use newly learnt first aid skills to help if a friend was injured and many different first aid skills were mentioned as ways to achieve such a goal. A number of insights were also provided with regard to helping a friend, including the potential difficulty, for example,

*"I'd be scared I'd break a rib" (female) and  
"you might end up, like, killing the fella" (male).*

As well as playing a support role if there was someone around with greater skills or training, for example,

*"if I was the only one there I would. But if there was someone older and more knowing about it, I'd leave it up to them and maybe go get help or something else" (male).*

Protecting Friends: Preventing injury Almost all participants identified the importance of protecting friends and that they were now more likely to protect, that is,

*"try and stop them from what they were going to do before (they got hurt)" (female).*

We found participants came up with a number of different ways that they would protect their friends from engaging in risk-taking behaviour. Firstly, some noted that protective behaviour could be indirect (as well as direct), for example,

*"take the peer pressure out of it" (male).*

Of the direct strategies, the most common was that they would tell their friend to stop, *"don't do it dude" (male).*

Others indicated that they could reason with their friend or explain the situation to their friends,

*"you can give them reasons not to do it... like saying about your thoughts and their thoughts and their thoughts before and their thoughts after and you can sort of say well, 'you'll be like this if you do this" (female) or  
"like try and stop your friend from doing risky stuff before it happens. Like, if they're um, if you tell them they're going too fast like that other story, a lift home, you have to (say) drive at the limit that it says on the road" (male).*

This greater discussion also involved listening to the friend,

Interviewer: *"Do you know how to help prevent your friends from getting injured in the first place?"* Male: *"Kinda. If you listen to them."*

Alternatively a common strategy raised by all groups indicated ways in which they could physically intervene such as by taking the keys or alcohol away from a potential drink driver. However others added that this was not necessarily easy, for example,

Interviewer: *"Can you physically try and stop them?"*... Male: *"you're just going to get hurt yourself."*

Preventing risk-taking generally however did not appear to be straightforward, with almost all participants indicating contextual factors need to be taken into account. In several groups it was noted that there needed to be consideration for the confidence of the friend, for example,

*"just looking after, but that's just taking their confidence down too ...but if you stop them from doing it, they'll still have to have the same confidence level"* (male).

Most participants also noted that they would be much more likely to protect their friends and the closer the friend the more likely to give protection,

*"if you don't like them you just let them go"* (male).

In related findings young people were also more likely to protect in the situations in which they felt danger was more significant or imminent, for example,

*"whether I reckon it's risky enough to warn them"* (male).

Further, some acknowledged the challenges of protecting when there were other friends around, for example,

*"Yeah sometimes (I feel like) the only one saying it"*(female).

Importantly there were still students who identified benefits or the importance of benefits to protection,

*"It is but you've got to think of the good side of it."* (female)

## **Discussion**

There was no support from the quantitative research for the suggestion that friends would increase their protective behaviour as a result of participating in the SPIY program. This finding is despite evidence of change in reduced risk-taking behaviour for the intervention group relative to the control group (Buckley, 2008). On the other hand, the qualitative findings showed that adolescents do indeed report strategies to protect their friends both in terms of prevention and in managing any injuries. The qualitative findings also highlighted the complexities of protective behaviour as well as adolescents' considerations on the circumstances in which they might try to intervene.

The findings that many adolescents (in both intervention and comparison groups) would try to stop their friends from potentially dangerous activities is consistent with the literature. Given much of the previous work had been in preventing alcohol and drug related harms (e.g. Flanagan et al., 2001; Smart & Stoduto, 1998), the additional road related risks such as unlicensed use of a motor vehicle extends the findings. It is encouraging that both groups strongly endorsed trying to stop their friends' risk-taking.

There appears to be great value in combining a quantitative and qualitative approach to data collection. The qualitative approach can provide a rich insight into the perceptions of the participant adolescents who were the recipient and targets for change with the SPIY program. The qualitative approach provided benefit in understanding the situational concerns of the adolescents. The approach helped develop an understanding of meaning that participants assigned to particular aims of the SPIY program. It is through the focus groups that information on barriers to creating change can be identified for future redesign of what was a trial of the program. For example, barriers such as the situation needing to be perceived as dangerous, needing to be sufficiently close friends and the challenges of finding a way in which to protect that maintains the friends confidence and the protector's social standing. Thus the method provided a more complete picture of the adolescents' perceptions of what was needed to be covered in the SPIY program.



One explanation for the lack of significant findings of change in the motivation to protect may be to do with issues of measurement. Previous research that has been conducted on protective behaviour among adolescent friends has sought to understand individual characteristics or specific strategies of those who report protecting. Flanagan and colleagues (2002) found younger adolescents were more likely to try and convince their friends of harm associated with risk-taking. In contrast the older adolescents in their study were more likely to ignore their friends' behaviour. The different strategies evident in the research led by Flanagan suggest the issues of specificity of measurement of friends' protective behaviour may need further consideration. The research presented in this paper provided an initial examination into protective behaviour, an area with very little previous research. Future research should explore a multi-dimensional construct of friends' protective behaviour that prompts respondents with different strategies.

There are other limitations to the research that must be considered. The assessment of intervention students is also limited to the restricted sample of two high schools and four comparison schools. Focus groups also have limitations as a data collection method with possible concerns about pressure to speak up in a group and respond positively to the program in a group setting. The research presented in this paper is intended to present piloting information regarding the SPIY program. As such, the sample is limited in generalisability however it provides sufficient size for the preliminary analyses conducted in the study. A wider implementation and evaluation of the SPIY program would increase the generalisability of results and this would be particularly needed for generalising to different ethnic populations and different geographic regions and socio-economic groups.

In conclusion, there appears to be some promise, particularly from the qualitative findings that young people could be engaged in reducing their friends' risk-taking. The participants appeared to have many useful strategies in which they might be able to intervene. The complexity of the issue was also highlighted in the qualitative findings with many adolescents highlighting the considerations in which they would protect that might have been missed in a quantitative. However, it does appear that encouraging mates to look out for their mates is perhaps an important adjunct strategy to other road safety messages.

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### **References**

- Adebayo, A. (1988). Drunk driving intervention in an urban community: An exploratory analysis. *British Journal of Addiction*, 83, 423-429.
- AIHW. (2004). Australia's Young People: Their Health & Well-being. *PHE-20*.
- Armsden, G. C., & Greenberg, M. T. (1987). The inventory of parent and peer attachment: Individual differences and their relationship to psychological wellbeing in adolescence. *Journal of Youth and Adolescence*, 16, 427-454.

Department of Health & Aged Care. (2001). *National Injury Prevention Plan: Priorities for 2001-2003. Implementation Plan*. Retrieved 15 April, 2007, from [www.nphp.gov.au/publications/sipp/imp\\_plan.pdf](http://www.nphp.gov.au/publications/sipp/imp_plan.pdf)

AIHW. (2006). *Australia's health. No. 10. AIHW Cat. no. AUS 73*. Canberra: AIHW.

Ajzen, I. (1985). From decisions to actions: A theory of planned behavior. In J. Kuhl & J. Beckmann (Eds.), *Action-control: From cognition to behavior* (pp. 11-39). New York: Springer.

Bergin, C., Talley, S., & Hamer, L. (2003). Prosocial behaviours of young adolescents: A focus group study. *Journal of Adolescence*, 26, 13-32.

Botvin, G. J., Baker, E., Dusenbury, L., Tortu, S., & Botvin, E. (1990). Preventing adolescent drug abuse through a multimodal cognitive-behavioral approach: Results of a three-year study. *Journal of Consulting & Clinical Psychology*, 58, 437-446.

Botvin, G. J., & Griffin, K. W. (2004). Life Skills Training: Empirical findings and future directions. *Journal of Primary Prevention*, 25, 211-223.

Buckley, L., & Sheehan, M. (2004). Behaviour change programs. In R. McClure, M. Stevenson & S. McEvoy (Eds.), *In The Scientific Basis of Injury Prevention and Control*. Melbourne: IP Communications.

Buckley, L. (2005). *Adolescents' perspective of transport related risk-taking and injury: Definitions, consequences, and risk and protective factors*. Paper presented at the Australasian Road Safety Research, Policing and Education Conference, Wellington, New Zealand.

Buckley, L. (2008). The design and preliminary evaluation of an intervention to reduce risk-taking behaviour among adolescents: The potential for protective behaviour toward friends. *PhD Thesis, Queensland University of Technology*.

Chapman, R., & Sheehan, M. (2005). *The adolescent injury checklist: An investigation of transport related injuries as reported by Australasian adolescents*. Paper presented at the Australasian Road Safety Research Policing Education Conference, Wellington, New Zealand.

Chen, L. Baker, S.P., Bayer, E.R. & Li, G. (2000). Carrying passengers as a risk factor for crashes fatal to 16 – 17 year-old drivers. *Journal of American Medical Association*, 283, 1578-1617.

Crystal, D. S., Watanabe, H., Weinfurt, K. P., & Wu, C. (1998). Concepts of human differences: A comparison of American, Japanese, and Chinese children and adolescents. *Developmental Psychology*, 34, 714-722.

Dekovic, M., & Meeus, W. (1997). Peer relations in adolescence: Effects of parenting and adolescents' self-concept. *Journal of Adolescence*, 20, 163-176.

- Eaton, D. K., Kann, L., Kinchen, S., Ross, J., Hawkins, J. D., Harris, W. A., et al. (2006). Youth risk behavior surveillance - United States, 2005. *MMWR. Surveillance Summaries*, *55(S S05)*, 1-108.
- Eisenberg, N., & Morris, A. (2004). Moral cognitions and prosocial responding in adolescence. In R. M. Lerner & L. Steinberg (Eds.), *Handbook of Adolescent Psychiatry*. Hoboken, NJ: John Wiley & Sons.
- Fagan, A. A., & Mihalic, S. (2003). Strategies for enhancing the adoption of school-based prevention programs: Lessons learned from the blueprints for violence prevention replications of the Life Skills Training program. *Journal of Community Psychology*, *31*, 235-253.
- Flanagan, C., Galley, L., & Elek, E. (2004). Friends don't let friends...Or do they? Developmental and gender differences in intervening in friends' ATOD use. *Journal of Drug Education*, *34*, 351-371.
- Furman, W., & Buhrmester, D. (1985). Children's perception of the personal relationships in their social network. *Developmental Psychology*, *21*, 1016-1024.
- Hartup, W. W. (1996). The company they keep: Friendships and their developmental significance. *Child Development*, *67*, 1-13.
- Hawkins, J., Catalano, R. F., & Miller, J. (1992). Risk and protective factors for alcohol and other drug problems in adolescence and early adulthood: Implications for substance abuse prevention. *Psychological Bulletin*, *112*, 64-105.
- Huber, J., Carozza, S., & Gorman, D. (2006). Underage driving as an indicator of risky behavior in children and adolescents. *Journal of Adolescent Health*, *38*, 612-616.
- Jaffee, S., & Hyde, J. S. (2000). Gender differences in moral orientation: A meta-analysis. *Psychological Bulletin*, *126*, 703-726.
- Keating, D. P. (2004). Cognitive and brain development. In R. M. Lerner & L. Steinberg (Eds.), *Handbook of Adolescent Psychology* (2nd ed.). New Jersey: John Wiley & Sons.
- Kreisfeld, R., Newson, R., & Harrison, J. (2004). *Injury deaths, Australia 2002. AIHW cat. no. INJCAT 65*. Canberra: AIHW.
- Krueger, R. A. (1998). *Analyzing and reporting focus group results*. Thousand Oaks, CA: Sage.
- Krug, E. G., McGee, K., & Peden, M. M. (2002). *Injury: A leading cause of the global burden of disease 2000*. Geneva: World Health Organization.
- Laible, D. J., Carlo, G., & Raffaelli, M. (2000). The differential relations of parent and peer attachment to adolescent adjustment. *Journal of Youth and Adolescence*, *29*, 45-59.
- Lam, L. T. (2003). Factors associated with fatal and injurious car crash among learner drivers in New South Wales, Australia. *Accident Analysis & Prevention*, *35*(3), 333-340.

- Lewis, I. M. and Watson, B. C. and White, K. M. and Tay, R. S. (2007) Promoting public health messages: Should we move beyond fear-evoking appeals in road safety?. *Qualitative Health Research* 17(1):pp. 61-74.
- Patten, C. P., Lopez, K. N., Thomas, J. L., Offord, K. P., & Decker, P. A. (2004). Reported willingness among adolescent nonsmokers to help parents, peers and others stop smoking. *Preventive Medicine*, 39, 1099-1106.
- Patterson, G. R., Reid, J. B., & Dishion, T. J. (1998). Antisocial Boys. In J. M. Jenkins, K. Oatley & N. L. Stein (Eds.), *Human Emotions: A Reader*. Malden, Mass.: Blackwell.
- Perry, C. L. (1999). *Creating health behavior change: How to develop community-wide programs for youth*. Thousand Oaks, CA: Sage.
- Prinstein, M. J., Boergers, J., & Spirito, A. (2001). Adolescents' and their friends' health-risk behavior: Factors that alter or add to peer influence. *Journal of Pediatric Psychology*, 26, 287-298.
- Rose, A. J., & Asher, S. R. (1999). Children's goals and strategies in response to conflicts within a friendship. *Developmental Psychology*, 35, 69-79.
- Sheehan, M., Schonfeld, C., Ballard, R., Schofeld, F., Najman, J., & Siskind, V. A. (1996). A three year outcome evaluation of a theory based drink driving education program. *Journal of Drug Education*, 26(395-412).
- Shope, J. T., Elliott, M., Raghunathan, T. E., & Waller, P. (2001). Long term follow-up of a high school Alcohol Misuse Prevention Program's effect on students subsequent driving. *Alcoholism: Clinical & Experimental Research*, 25, 403-410.
- Shope, J. T., Raghunathan, T. E., & Patil, S. M. (2003). Examining trajectories of adolescent risk factors as predictors of subsequent high-risk driving behavior. *Journal of Adolescent Health*, 32, 214-224.
- Shore, E. R., & Compton, K. L. (2000). Individual interventions to prevent drunk driving: Types, efficacy, and a theoretical perspective. *Journal of Drug Education*, 30, 281-289.
- Smart, R. G., & Stoduto, G. (1997). Interventions by students in friends' alcohol, tobacco, and drug use. *Journal of Drug Education*, 27, 213-222.
- Steinberg, L. (2005). Cognitive and affective development. *Trends in Cognitive Sciences*, 9, 69-75.
- Sussman, S., Rohrbach, L. A., Patel, R., & Holiday, K. (2003). A look at interactive classroom-based drug abuse prevention program: Interactive contents and suggestions for research. *Journal of Drug Education*, 33, 355-368.
- Tobler, N. S., Roona, M. R., Ochshorn, P., Marshall, D. G., Streke, A. V., & Stackpole, K. M. (2000). School-based adolescent drug prevention programs: 1998 meta-analysis. *Journal of Primary Prevention*, 20, 275-336.

Turner, C., McClure, R., & Pirozzo, S. (2004). Injury and risk-taking behavior. A systematic review. *Accident Analysis & Prevention*, 36, 93-101.

Western, J., Lynch, M., & Ogilvie, E. (2003). *Understanding youth crime: An Australian study*. Aldershot, Hampshire: Ashgate Publishing Ltd.