



Developing safer passengers through a school-based injury prevention program

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ABSTRACT

Motor vehicle crashes are a leading cause of death among young people. Fourteen percent of adolescents aged 13–14 report passenger-related injuries within three months. Intervention programs typically focus on young drivers and overlook passengers as potential protective influences. Graduated Driver Licensing restricts passenger numbers, and this study focuses on a complementary school-based intervention to increase passengers' personal- and peer-protective behavior. The aim of this research was to assess the impact of the curriculum-based injury prevention program, Skills for Preventing Injury in Youth (SPIY), on passenger-related risk-taking and injuries, and intentions to intervene in friends' risky road behavior. SPIY was implemented in Grade 8 Health classes and evaluated using survey and focus group data from 843 students across 10 Australian secondary schools. Intervention students reported less passenger-related risk-taking six months following the program. Their intention to protect friends from underage driving also increased. The results of this study show that a comprehensive, school-based program targeting individual and social changes can increase adolescent passenger safety.

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1. Introduction

Motor vehicle crashes (MVCs) are the leading cause of death among young people in Australia. From 2005 to 2006 in Australia, 98 per 100,000 young people aged 12–17 years were hospitalized for an MVC-related injury (Australian Institute of Health and Welfare, 2008). Teenage drivers often drive with other teen passengers, which substantially increases their crash risk (Chen et al., 2000). One study involving in-car recording and surveys with teenage drivers showed that crash and near crash rates were 75% lower in the presence of adult passengers and 96% higher among those with risky friends (Simons-Morton et al., 2011).

In 2009–2010, 166 young people aged 16–19 years were treated for serious passenger-related injuries across 20 hospitals in Queensland, Australia (Queensland Trauma Registry, 2011). A survey conducted by the authors with adolescents aged 13–14 years also showed that 14% reported having experienced a passenger-related injury, either treated or untreated, within the past three months (Chapman and Sheehan, 2005).

While intervention programs typically focus on young drivers, the potential for passenger-focused strategies has been largely overlooked (Regan and Mitsopoulos, 2001). Graduated Driver Licensing (GDL) systems are a current approach to reduce young adult crashes. GDL systems involve a three-stage licensing process,

requiring young novice drivers to progress from supervised driving, to unsupervised, restricted driving, before moving to full licensure. Restrictions placed on novice drivers under GDL systems include, for example, the number of passengers they may carry at specific times. In Queensland, for example, young novice drivers are only permitted one passenger under the age of 21, with the exception of family members, from 11 pm to 5 am (Queensland Government Department of Transport and Main Roads, 2011).

An increasing body of literature has demonstrated GDL systems to be effective in reducing young driver crashes. For example, a systematic review of evaluation studies recorded between 2002 and 2007 revealed that GDL programs have reduced crash risk among young drivers by approximately 20–40% (Shope, 2007). Additionally, an evaluation of North American GDL programs using a meta-analytic approach revealed a significant impact on the relative fatality risk of 16-year-old drivers, with a reduction of 19% (Vanlaar et al., 2009). This study also assessed the components of GDL systems, showing that several GDL program components, including passenger restrictions, had significant effects on the fatality risk of young novice drivers (Vanlaar et al., 2009).

A further, more general, investigation of fatal crashes across the United States has shown that the per capita crash rate for 16-year-old drivers decreased by 16% from 1993 to 2003 (Williams et al., 2005). Of note, a major reduction during this period was found in crashes involving young passengers; and this was particularly true for jurisdictions that had introduced GDL passenger restrictions (Williams et al., 2005). One recent study has also shown that passenger restrictions have reduced 16–17-year-old driver fatal crashes by an estimated 9% in the United States (Fell et al., 2011).

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While GDL systems in part address passenger safety through restrictions, there is scope for complementary approaches that focus on passengers' own safety. This paper examines a potentially complementary school-based intervention, Skills for Preventing Injury in Youth (SPIY), to increase young passengers' own safe behavior.

1.1. Skills for Preventing Injury in Youth (SPIY)

SPIY is a theory-based intervention that is curriculum integrated, and taught in weekly 50-min lesson over eight weeks by trained secondary school Health or Pastoral Care teachers. Targeting adolescents aged 13–14 years, SPIY aims to reduce risk-taking and injury, and increase personal- and peer-protective behavior, within the context of a supportive school environment. Within the peer relationship, SPIY aims to increase the likelihood that adolescents will stop their friends participating in risky behaviors, including dangerous driving. The program targets early adolescents as, from the age of 13–14 years risk-taking behavior, including risky passenger behavior, is increasing.

Effective intervention programs are those that are based on an appropriate theory (Perry, 1999). The SPIY program was developed based on two theories relevant to adolescent behavior change; the Theory of Planned Behavior (TPB, Azjen, 1991) and Cognitive Behavioral Therapy (CBT). The TPB is a theory that clearly outlines target constructs for behavior change. It proposes that three key constructs predict behavioral intentions, and in turn behavior. These constructs include an individual's attitudes regarding the outcome of a behavior; their beliefs about and desire to conform to others' expectations regarding the behavior (subjective norms); and their beliefs regarding their ability to perform a behavior (perceived behavioral control). CBT meanwhile has developed from cognitive theory and behavior theories (such as those developed by Watson, Skinner, and Pavlov). Within CBT, an individual's thoughts, or cognitions, about events are important determinants of their behavior. As part of the behavior change process, individuals must be educated about the link between thoughts, feelings and behaviors, and taught strategies to identify and challenge automatic thoughts. CBT has been demonstrated to underlie effective school-based programs outside of the therapeutic context (Shochet et al., 2001).

In addressing the two behavioral targets of change (decrease in adolescent's risk taking and increase in protective peer behavior), the SPIY program incorporates activities that operationalize the core constructs of the TPB and use CBT strategies. Within each lesson, a brief story or scenario about a group involved in a risk taking behavior and injury is presented to contextualize the lesson activities. For example, to contextualize material relating to protective behavior in driving situations, a story is presented whereby a group of friends take a lift home with a drink driver after a party. The driver loses control of the car and crashes into a tree, and the front passenger is injured. Within this lesson, activities focus on challenging students' attitudes, norms and perceived behavioral control regarding the behavior of the group, and make use of core CBT strategies (e.g. role plays; challenging thoughts about risk).

1.2. Research aim

The aim of this study was to examine the impact of the SPIY program on passenger-related risk-taking and injuries, as well as on intentions to intervene in friends' risky driving behavior. This study has the potential to complement current GDL approaches by introducing concurrent, evidence-based school programs that focus on adolescent passenger safety.

2. Method

2.1. Participants and procedure

Participants were 13–14 year olds from 10 secondary schools in southeast Queensland and the Australian Capital Territory (ACT). Due to age differences in Grade levels between states, participants were in Grade 9 in Queensland and Grade 8 in ACT. Participants in both groups were below licensing age. Five high schools were randomly assigned as intervention schools, with the SPIY program being implemented in the Health or Pastoral Care curriculum for the appropriate Grade level. Five were assigned as control schools, and were offered the program for use following data collection.

Students with active parental consent who were present on the data collection days participated. At baseline, the mean age of students was 13.26 years. In the intervention schools, 467 students (50.3% male) participated in surveys before implementation of the program, and 459 (48.4% male) participated at six-month follow-up. In the control schools, 376 students (46.5% male) participated at baseline, and 357 (48.6% male) at follow-up.

A randomly selected sub-sample of 70 students ($n = 32$ male) from two of the intervention schools were also invited, with parental consent, to take part in focus groups in the two weeks immediately following the SPIY program implementation. Approximately six to nine students participated in one of 10 focus groups chosen from three randomly selected classes. The semi-structured focus groups were audio recorded with the students' permission, and questions were expanded on within groups to enable clarification and enhancement of responses.

2.2. Survey measures

2.2.1. Injury

The Extended Adolescent Injury Checklist (E-AIC) (Chapman et al., 2011) is a self-report measure of injuries experienced in the past three months and the circumstances in which they occurred. One item was included in the current analysis, which asks whether students have been injured while riding as a passenger in a vehicle.

2.2.2. Risk taking

The Australian Self-report Delinquency Scale (ASRDS) (Mak, 1993) asks students to indicate whether or not they have engaged in a list of risk-taking behaviors in the past three months. Two items were included in the current analysis. One asks whether students had ridden in a car with a dangerous driver, and the other whether they had ridden in a car with a drink driver.

2.2.3. Peer protection

Two items were used to measure intentions to intervene in friends' risky road behavior (Western et al., 2003). These were; "What would you do if you had a good friend who was (a) driving after drinking, and (b) driving without a license?" Response options included to join in, try to stop them, do nothing, report them, or walk away. Responses were coded dichotomously, with "try to stop them" and "report them" coded as protective behavior, and remaining responses coded as non-intervening behavior.

2.3. Focus group prompts

Participants' perceptions about how the SPIY program influenced their own passenger risk behavior, as well as their intentions to help and protect their friends in dangerous driving situations, were examined through the use of open-ended prompts. Some example focus group prompts included 'How do you think the

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