THE EFFECTS OF THE PARTY PROGRAM ON YOUTHS' RISK-TAKING BEHAVIOURS AND BELIEFS

by

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ABSTRACT

The PARTY (Prevent Alcohol Related Trauma in Youth) program is a one-day hospital-based program that targets youth in Grade 10. The programs' intention is to educate youth in the dangers of irresponsible alcohol use and how this contributes to preventable trauma. The study of the PARTY program used a 12-item questionnaire to evaluate the effectiveness of the program in changing youths' risk-taking behaviors. The main objectives were to (a) carry out psychometric analysis of the questionnaire, (b) assess cognitive changes in regards to risk-taking behaviors and beliefs of Grade 10 students three months after completing the PARTY program, and (c) assess gender, location, and school structure differences in risk-taking behaviors and beliefs. The study utilized a mixed design as the program is using a pre-and post-program survey for data collection. The study sample consisted of Grade 10 students from senior and junior secondary schools in the School District 57 region that included one rural senior secondary school, three urban senior secondary schools, one urban junior secondary school and a private senior secondary school. Two of the schools had an insufficient number of participants completing all three times of measurement and were not included in analyses involving individual schools. A total of 280 students completed the first questionnaire and of those 162 (57.8%) completed all three times of measure and were used in the study. Results indicate that the PARTY program has a positive effect on the risk-taking behaviors and beliefs of urban girls and boys, and rural girls attending senior secondary schools. The PARTY program showed no significant effect on the risk-taking behaviors and beliefs of junior secondary boys and girls, or rural boys.

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For Dyonne, with all my love.

Chapter 1

Introduction

The PARTY (Prevent Alcohol Related Trauma in Youth) program is a one-day, hospital-based program that targets youth in Grade 10. The intention of the program is to educate youth on the dangers of alcohol and how alcohol contributes to preventable trauma. The PARTY program appears to be based on the protection motivation theory of fear for eliciting changes in youths' risk-taking behaviours and beliefs. During a day in the program a variety of techniques are utilized: lectures, discussion groups, guest speakers, role playing, demonstrations, and tours of hospital areas that deal with the aftermath of trauma. The PARTY program is funded in part by the Northern Health Authority of British Columbia (BC) and by corporate and private contributions. In order to justify continued funding the program must demonstrate a positive effect on the target population's alcohol related risk-taking behaviours and beliefs.

The objective of this study was to determine the PARTY program's effectiveness in eliciting changes in Grade 10 students' alcohol related risk-taking behaviours and beliefs. Psychometric evaluation of the PARTY program questionnaire was conducted to determine the reliability of the outcome questionnaire used by the PARTY program. Differences in risk-taking behaviours and beliefs of males and females, rural versus urban students and students attending junior versus secondary schools were evaluated to assess changes associated with students' participation in the PARTY program.

These data were collected at three different times: the pre-program questionnaire was administered to students one week prior to attending the PARTY program, the post-program questionnaire was administered within one week of the students' completion of

the program, and the follow-up questionnaire was administered three months after completion of the post-program questionnaire. The questionnaire used is currently the chosen method for data collection of the Prince George PARTY program. The questionnaire consists of 12 questions that ask the participant to rate his/her risk-taking behaviours and beliefs. The data were entered into the computer using the Statistical Program for Social Sciences (SPSS 10.0). To assess gender differences and changes in youths' behaviours towards risk-taking, the data were analyzed in a 2 (Gender) by 3 (Time) mixed analysis of variance (ANOVA). The study also examined differences between those students who completed all three times of measurement and those that did not as a check on the representativeness of the sample. Differences between students attending junior and senior secondary high schools, and differences between students from rural and urban communities were also examined. The sample consisted of 266 students, and of these 266 students, 162 (60.9%) completed all three times of measurement.

Chapter 2 is a review of the literature on youths' alcohol use, risk-taking behaviours and beliefs, drinking and driving, gender differences, school environmental factors, rural and urban environments, prevention programs and the PARTY program.

Chapter 3 is an overview of the methods used in the study. The number of students in each analysis and the methods used are described in detail.

Chapter 4 examines the statistical analysis of the data. The results of the psychometric testing of the questionnaire are reviewed along with ANOVA results for all comparisons conducted in the study.

Chapter 5 is a summary and interpretation of the findings. The limitations of the study are discussed as well as implications of the findings for future research, practice, and policy-making.

Chapter 2 Literature Review

The Epidemiology of Adolescent Risk-taking Behaviours and Beliefs

Alcohol Use Among Teenagers

Alcohol use among teenage youth is an ongoing concern due to the associated health risks. The reasons that youth use alcohol are varied. Eliany (1992) stated that 63% of current drinkers aged 15 to 19 years drank to be sociable, 37% drank to relax, 28% drank to feel less inhibited or shy, and 20% drank to forget (National Alcohol and Other Drugs Survey, 1989).

The McCreary Center Society (1993) surveyed 15,549 Grade 7 through 12 students from BC in 1992 for their Adolescent Health Survey. As a whole, 65% of BC students reported they have consumed alcohol at least once in their lives. In 1998, The McCreary Center Society surveyed 26,000 Grade 7 through 12 students. For the Northeast region of BC, which includes Williams Lake, Dawson Creek, and Fort Nelson, 69% of students reported they had drank alcohol at least once in their lives (The McCreary Center Society, 2000). Those students who had used alcohol on 100 or more days in their life accounted for 10% of BC students and 13% of students from the Northern Region. Of the students who reported using alcohol, 70% had a drink on one or more days in the past month.

Prince George is located in the Northeastern region of BC, as defined by the McCreary Center Society (2000). The Prince George school district chose not to take part in the 2000 McCreary survey. For the region, the rates for "ever tried alcohol in your life" have decreased from 73% in 1992 to 68% in 1998. The number of students who have used alcohol on more than 100 days during their lifetime has decreased from 14% in

1992 to 11% in 1998. Binge drinking, defined as having five or more drinks within two hours, also decreased from 7% in 1992 to 6% in 1998. The McCreary Society (2000) reported that the percentage of youth that have used alcohol increased with age for the entire province. At age 14, 53% of males and 50% of females had used alcohol. This increased to 90% of males and 87% of females by age 17. Among students who had ever drank alcohol, 50% did so by the age of 13 years. These BC statistics are similar to statistics reported for the rest of Canada, which indicate that teenage drinking is a concern across the country (King, Malece, & King, 1999).

King et al. (1999) reported that by Grade 10, 90% of Canadian students had tried alcohol at least once. Eliany (1991) reported that among 15- to 19-year-olds, 74% reported having consumed alcohol in the past year, and males on average drank more, and more often, than females regardless of age. In regards to males who were current drinkers, defined as having used alcohol in the past 12 months, 15% drank at least four times per week while only 6% of females did. In addition, 10% of current male drinkers had 15 or more drinks in the week prior to the survey, compared to only 1% of current female drinkers.

Alcohol is the drug of choice in the Atlantic Provinces. Data from the Atlantic Student Drug Use Survey (1998) indicates that alcohol use increases sharply between Grades 7 and 12. Rates of drinking climb from 19% in Grade 7 to 73% in Grade 12. The report also states "the majority of students who consume alcohol have at least one alcohol-related problem" (p. 3). The report defines such alcohol-related problems as unplanned and unprotected sexual intercourse, low school grades, drinking and driving, and problems at home.

In Newfoundland, over 56% of the total number of students surveyed in Grades 7, 9, 10, and 12 reported drinking alcohol in the past twelve months. Of these, approximately one-third report getting drunk or having five or more drinks in a row at least once in the 30 days prior to the survey. Newfoundland has the highest rates of alcohol use among youth in all of the Atlantic Provinces.

The results from the Ontario Student Drug Survey (1995) designate alcohol as the most commonly used drug by adolescents. Rates of alcohol use varied in the past year from 30.5% of Grade 7 students to 77.1% of Grade 13 students. The report states alcohol use in youth has decreased from the levels reported in 1979 given that in 1979, 76.9% of adolescents drank alcohol compared to 58.8% in 1995.

The Addiction Foundation of Manitoba (AFM) student survey on alcohol and other drugs (1997) reports that alcohol use has declined from previous years but that alcohol remains the drug of choice amongst youth. The survey targeted students in Grades 9 through 12 and defined current drinkers as those students reporting alcohol use in the past 12 months. The results indicate 84.6% of students report having used alcohol at least once, with 76.7% of students defining themselves as current drinkers. The mean age for the first reported drink was 13.5 years. The report states 29% of students drink a few times per year, 21.4% drink once per month, 25.6% drink two to three times per month, 14.3% once a week and 9.6% more than once a week. When students were questioned regarding their last incidence of alcohol consumption, 38.1% reported "getting a buzz on" and 29.6% reported getting drunk (AFM, 1997).

Canadian statistics for teenage drinking are similar to those in Germany and the United States. Hazard and Lee (1999) found in their study of health compromising

behaviours of German youth that 90% of German male adolescents and 88% of female adolescents had used alcohol. Although 89% of German youth have sampled alcohol, drinking does not become a regular behaviour in early adolescence. Of youth aged 12 to 16 years, 82% had used alcohol, but only 2% used it several times a week or more (Hazard & Lee, 1999).

The statistics from Germany regarding adolescents having ever tried alcohol are similar to those in the United States. Grunbaum et al. (1998) surveyed 280,000 American high school students in Grades 9 through 12. The results showed 92.2% of students had used alcohol at least once in their lifetime. This number is very close to the results reported for German youth by Hazard and Lee (1999). Grunbaum et al. (1998) also report 64.5% of American students nationwide had at least one drink on more than one occasion in the 30 days preceding the survey. Although the statistics for German and American youth having ever tried alcohol are similar, the percentage of adolescents drinking alcohol regularly in the United States is much higher than that reported in Germany. It was noted that male students in all grades drank more than females with Grade 12 males drinking the most (Grunbaum et al., 1998). Overall, males (55.4%) were more likely to indulge in periods of heavy drinking than were females (42.9%).

The pattern that has emerged from the research on youth and alcohol use is that by Grade 12 the majority of youth have experimented with alcohol at least once in their lifetimes. Males tend to drink more and report more alcohol-related problems than do females and across all locales there are a certain percentage of youth that use alcohol heavily or display binge-drinking behaviours.

Adolescent Drinking and Driving

A major concern with adolescent alcohol use is the risk many youth subject themselves to with regards to driving while under the influence of alcohol. Grant, Lane, Janus, and Okovita (1995) state that motor vehicle crashes kill more youth than any other cause of death and many of these accidents involve alcohol. Hingson, Heeren, and Winter (1999) state, "a driver does not necessarily have to be intoxicated to be impaired by alcohol" (p.31). Further they articulate that even low blood alcohol concentration levels reduce a driver's reaction time and slow the decision making process. Even though youth have the knowledge and understanding of the consequences of mixing alcohol and motor vehicles, many still continue this behaviour.

The province of BC has a poor record for students' drinking and driving. The McCreary Society (2000) reported that 43% of BC students who have their driver's license have operated a motor vehicle within one hour after consuming two or more drinks. A staggering 25% reported having driven after drinking in the past month. Furthermore over 25% of students reported having accepted a ride in a vehicle in the past month with a driver who has been drinking.

Statistics for Northeast region were similar to the above numbers. The McCreary Society (2000) reported that 49% of students in this region who are licensed to drive reported having driven after consuming two or more alcoholic drinks in the preceding hour. The McCreary Society (2000) also reported that the rates of drinking and driving in the Northeast region of BC did not changed significantly from 1992 to 1998. This high rate coupled with the finding that only 52% of students reported consistently wearing a

seatbelt, are thought to contribute greatly to the number of alcohol related trauma and fatalities in the Northeast region of BC.

Teenage drinking and driving rates are similar across the country. In Canada, Eliany (1991) reported that young people have a greater tendency than older people to drive after consuming alcohol. The authors stated that 23% of current drinkers aged 15 to 34 years reported driving within one hour of consuming two or more drinks. Eliany (1992) reported that 21% of drivers aged 15 to 19 years have driven within one hour of having two or more drinks.

The results are comparable for the Atlantic Provinces. The Atlantic Student Drug Use Survey (1998) found that about 20% of Nova Scotia adolescents with a driver's license reported driving within one hour of consuming two or more drinks of alcohol. The results from Newfoundland suggest that drinking and driving is a widespread problem given nearly one-third of all students reported having been the passenger in a vehicle where the driver had been drinking.

The Ontario Student Drug Use Survey (1998) found the percent of students driving one hour after consuming two or more alcoholic drinks increased from 21% in 1993 to 24.4% in 1995. The overall trend in drinking and driving has decreased from 58.1% in 1977 to a low of 20.4% in 1991, but the rates may be starting to increase as indicated by the 1995 results.

Canadian statistics for teenage drinking are similar to United States findings. Fingerhut and Warren (as cited in O'Malley and Johnston, 1999) state that motor vehicle crashes, many of which are alcohol related, account for a high percentage of injuries and deaths in the United States. In their study of American high school seniors, O'Malley and

Johnston (1999) found males were significantly more likely than their female peers to drive after drinking, but less likely to ride in a car with a driver who had been drinking. They also found the prevalence of driving after consuming alcohol had declined from 31.2% of students in 1984 to 18.3% in 1997. The prevalence of being a passenger in a car where the driver had been drinking has also decreased from 44.2% of students in 1984 to 26.1% in 1997. Kann et al. (2000) reported that 13.1% of students nationwide had driven a vehicle after consuming two or more drinks in the previous hour more than once in the 30 days preceding their survey. They also report that 33.1% of students had ridden in a car with a driver who had been drinking more than once in the 30 days preceding the survey.

Major trauma is one of the leading causes of death in adolescence throughout the world, with Canada having the second highest incidence rate behind Australia (WHO, 1986). The injury death rate for 15-to 24-year-olds in British Columbia is higher than the overall Canadian average (Tenn & Dewis, 1996). Statistics from the BC Coroners' Office show that alcohol and other illicit drugs are a major factor in fatal accidents in the northern half of the province. In 1996, 25 trauma-related deaths linked to alcohol and drug use were reported in residents up to 30 years of age. Of the 25 deaths reported, nine victims were 19 years of age or younger. These findings are similar to those reported in the United States. Marsiglia, Holleran, and Jackson (2000) state 90% of deaths in youth can be linked to alcohol and drugs.

Psychological Factors Thought to Influence Adolescent Risk-taking Behaviours and Beliefs

Factors Related to Adolescent Development

Alcohol use and risk-taking in youth has been the subject of much documentation. Leigh (1999) states that research tells us that alcohol and drug use is associated with such risk-taking and sensation seeking behaviours in youth as dangerous driving, sexual risk-taking, crime and violent behaviour. Cohn, MacFarlane, Yanez, and Imai (1995) state, "adolescent risk behaviour is often attributed to exaggerated feelings of invulnerability" (p. 217). Many of youths' actions in regard to risk-taking behaviours can be attributed to their belief that they are impervious to harm. Dolcini et al. (1989) support the idea that youth feel invulnerable by stating that adolescent risk-taking behaviours might be caused by exaggerated beliefs around their own indestructibility stemming from adolescent egocentrism. Egocentrism is defined as embeddedness in one's own point of view (Dolcini et al., 1989).

Arnett (1990) states that the personal fable may help to explain adolescents' willingness to take risks even though their actions may result in physical harm. The personal fable, as defined by Arnett (1990), refers to adolescents' beliefs that they are unique and are unlikely to be harmed by behaviours such as reckless driving, driving while impaired, or having unsafe sex. Arnett's belief is that youth feel negative consequences only happen to others, so why should they individually take precautions. Other researchers, who believe adolescents are not naive to potentially hazardous risks, have challenged Arnett's theory.

Beyth-Maron, Austin, Fischoff, Palmgren, and Jacobs-Quadrel (1993) argue that teenagers perceive just as many personal dangers in risky acts such as drug use, driving while intoxicated, or unprotected sex as do middle-aged adults. Gonzalez et al. (1994) state that youths' sense of indestructibility and seeming lack of awareness to the negative consequences of their actions may simply relate to bravado or a grandiose show of courage. According to Jessor and Jessor (as cited in Gonzalez et al., 1994) youth seek out risks for specific reasons including confirmation of personal identity, affirmation of maturity, and statement of opposition to adult authority and admission to peer groups.

Arnett and Balle-Jensen (1993) state much of adolescent risk taking reflects a desire to have exciting experiences rather than a feeling of invulnerability. For adolescents, risk-taking behaviours and beliefs often have social rewards such as peer acceptance and recognition. Adolescents do not necessarily interpret behaviours defined as risky by adults in the same way (Alexander et al., 1990). While adults view behaviours such as driving too close to the vehicle in front, speeding, and running yellow lights as risky, these are often labeled as good behaviours by youth (Gonzalez et al., 1994). However there are risk-taking behaviours and beliefs that are perceived to be positive by both youth and adults, including sports-related risks. Many sports such as skiing and mountain biking have a high-risk component; however since these activities are perceived as healthy pursuits, the associated risks are often deemed acceptable.

Gender

A difference in risk-taking behaviours and beliefs of males and females has been reported in the research conducted on adolescent risk taking. Kann et al. (2000) reported, in the 1999 Youth Risk Behaviour Surveillance Survey, that males put themselves at risk

more frequently than do females. The questionnaire results showed that males were significantly more likely than females to ride in a car without wearing a seat belt, ride a motorcycle without wearing a helmet, drive after consuming alcohol and partake in injurious physical activities. Grunbaum et al. (1998) found that males were significantly more likely than females to ride with a driver who had been drinking alcohol.

Pope, Smith, Wayne, and Kelleher (1994) found in their survey of 2,297 rural dwelling adolescents aged 12 to 18 years that males were much more likely than females to report drinking, problem drinking behaviours, and not wearing seat belts when riding in or driving vehicles. Similarly, O'Malley and Johnston (1999) reported that rates of driving or riding in a vehicle after drinking were higher among males than females. These findings indicate that males are more likely and willing than females to take risks or put themselves in risky positions.

Environmental Factors Thought to Influence Adolescent Risk-taking Behaviours and Beliefs

School Structure

There are various school structures in the education system in British Columbia. The most common is the student attending kindergarten to Grade 7 (elementary) at one school, and Grade 8 to 12 (senior secondary) at a second school. Another schooling option is kindergarten to Grade 7 at one school, Grade 8 to 10 (junior secondary) at a second school, and Grade 11 to 12 at a third school. Elementary schools tend to be small, junior secondary schools somewhat larger, and the senior secondary schools by far the largest in the public school system. The transition from a small elementary school to a large senior secondary school is a major change for a student.

Blyth, Simmons, and Carlton-Ford (1983) found in their research that females more than males experience decreases in self-esteem as they move into high school. They also discovered that both males and females who moved from a small school to a large school participated less in extracurricular activities and were victimized more than the students who remained in smaller schools. Simmons, Carlton-Ford, and Blyth (1987) concluded that younger students' self-esteem is adversely affected by the transition from a small school to a large school, mainly because of the presence of older students.

The presence of older students also appears to have an effect on the younger students attending senior secondary schools. Blyth, Smyth, and Hill (1980) stated the presence of older students increased the frequency of dating and sexual behaviour in the younger students. Moody-Thomas, Doherty, and Fick (1987) found that ninth grade senior secondary students smoked cigarettes considerably more than did the ninth grade junior secondary students. From these findings it could be concluded that older students tend to influence younger students in the area of self-esteem and perhaps some risk-taking behaviours and beliefs.

Rural and Urban Environments

Rural environments were once considered healthier than urban environments as it was thought that alcohol and drug use was not as prevalent in rural settings (Pope, Smith, Wayne, & Kelleher, 1994). However, recent research reveals this is not the case. Cronk and Sarvela (1997) stated that rural youth began drinking alcohol at an earlier age than their urban counterparts. They also stated that binge drinking and daily use of alcohol were higher among rural students. O'Malley and Johnston (1999) report that rates of

drinking and driving or riding with a driver that has been drinking are negatively correlated with the density of the population in the United States.

Pope, Smith, Wayne, and Kelleher (1994) found that males in rural communities more often than females reported low academic achievement, smoking, and not wearing seat belts. The assumption that youth living in rural areas are immune to the substance abuse issues that the urban youth have been facing for years is clearly not valid. Cronk and Sarvela (1997) state that recent studies have shown that use of certain illicit drugs is prevalent among rural youth. These findings indicate that rural youth are as likely to engage in behaviours that are detrimental to their health as are their urban counter parts.

Prevention Programs

Issues in Prevention Strategies

Prevention programs relating to alcohol and drug use have been continually evolving since the need for such education became apparent. Researchers working in the field of adolescent health have often misconceptualized a specific deviant behaviour as the root cause of all deviant behaviours (Scales, 1999). This linear thought pattern would allow that the youth who was once an "A" student, but now smokes marijuana, skips school and breaks into cars, would once again be an "A" student if he or she quit smoking marijuana. Scales (1999) states that in recent years research has shown that the various problems facing youth today are correlated. The youth that smoke cigarettes are at a higher risk for drug and alcohol use, sexually transmitted diseases etcetera. However, convincing youth to quit smoking is not a guarantee that the other risks will go away.

The principle venue for prevention programs has been the school system, usually with the teacher or a delegate providing the prevention related education (Clayton,

Cattarello, & Walden, 1991). One area that is still unclear is the age at which the targeted prevention programs are most effective. Studies have shown that substantial experimentation with alcohol begins between the fifth and seventh grades (Abbey et al., 1990). The typical age of experimentation varies across substances. Alcohol and tobacco have the earliest age of initiation, followed by marijuana and inhalants. Peak experimentation with alcohol occurs between the sixth and ninth grades (Johnston, O'Malley, & Bachman, 1995).

Review of Prevention Strategies

Early forms of alcohol and drug prevention programs were entirely information based, offering only education on the physiological and psychological effects of alcohol and drugs. As research continued in the area of education, various methods were developed in an attempt to impart drug and alcohol information and ways of dealing with peer pressure for youth.

There have been four different methods utilized in alcohol and drug prevention in school settings (Botvin, Schinke, & Orlandi, 1995). These can be grouped into the following categories:

1. Cognitive/information dissemination approaches,
2. Affective education,
3. Social resistance skills training, and
4. Personal and social skills training.

Cognitive/Information Dissemination Approach

The cognitive/information dissemination approach has been the standard method of educating young people in the school setting. This method is based on the premise that if one is educated about the risks and dangers involved in substance misuse that an informed choice will be made not to use alcohol and drugs. "Such a model assumes that individuals will make a more or less rational decision to use drugs or not use drugs" (Botvin et al., 1995, p. 170). This model assumes that those who do choose to use drugs are unaware of the dangers involved. This assumption has proven unwarranted, as research has found that youth are very knowledgeable in regards to the risks involved in drug and alcohol misuse (Botvin et al., 1995).

Although cognitive/information dissemination approaches to alcohol and drug prevention are widely applied, there is little evidence to support their effectiveness in changing behaviours. Botvin, Baker, Dusenburg, Tortu, and Botvin (1990) stated research done in the 1980s and 1990s strongly questioned the effectiveness of strictly imparting information to teenagers as a method of eliciting behavioural change. Similarly Falck and Craig (1988) stated this form of intervention fails to produce a reduction in drug use, and furthermore some researchers found that there was a subsequent increase in use of alcohol and cigarettes.

Affective Education

A second approach applied in alcohol and drug prevention is called affective education. Botvin et al. (1995) state that this method is based on the assumption that drug use could be reduced through affective development. This educational method emphasizes the personal and social development of students, and does not solely impart

information, like the cognitive approach. The approach emphasizes decision-making, effective communication, and assertiveness to equip students with the means to make healthy decisions. This form of drug and alcohol prevention has not demonstrated an impact on drug use (Botvin et al., 1995).

Social Influence Approach

The social influence approach to alcohol and drug education was developed, in part, as a result of the failure of the above mentioned prevention strategies. The approach was developed by Richard Evans at the University of Houston, and is based on a concept developed by McGuire called psychological inoculation (Botvin et al., 1995). It is a method of drug and alcohol prevention education that is based on the belief that adolescents will be exposed to many pressures from both peers and the media to try alcohol and drugs. The approach attempts to teach adolescents the skills to resist trying drugs and alcohol when offered. This approach has proven effective with studies showing positive behaviour effects lasting up to 3 years. Data from several long-term studies have shown that these effects diminish with time suggesting the need for continued follow-up training (Botvin et al., 1995).

Personal and Social Skills Method

A variation to the psychological inoculation approach is the social resistance skill method. In this technique, students are taught how to recognize situations where they will be pressured to use drugs and alcohol, and how to resist this pressure (Botvin et al., 1995). The method also attempts to correct the perception that the majority of adolescents use drugs and alcohol. Research has shown that teens often overestimate the prevalence of drug and alcohol use among their peers (Fishbein, 1977). This misconception adds

greatly to the pressure teens feel to use drugs and alcohol. This prevention strategy has been proven effective especially for those students receiving booster sessions (Botvin et al., 1995).

The PARTY Program

The PARTY program is a combination of cognitive/information dissemination and affective education. The program is a full day of information sessions by law enforcement and health care professionals, coupled with some "hands on" interactive group activities. The PARTY program appears to be based on the protection motivation theory of fear. The protection motivation theory of fear approach most often varies information on one or more of the following topics: (a) the personally relevant consequences of a harmful event; (b) how likely the event is to take place, and (c) recommended preventative responses (Rogers, 1975). The PARTY program follows this formula in its approach to educating youth about the hazards of drinking and driving. Emergency Room (ER) nurses at Sunnybrook Hospital in Toronto, Ontario originally developed the PARTY program in 1986. The program came into existence as a result of the prevalence of alcohol-related traumas in the ER and the nurses' desire to curb the consequences of drinking and driving amongst teens. In 1999 there were 43 PARTY programs offered across Canada (Doze, 1999).

The PARTY programs in Alberta were studied to determine the long-term effects of the program on changing youths' risk-taking behaviours and beliefs. The study used a convenience sample based on the availability of PARTY programs and their participants. The control group was a convenience sample from schools that were not participating in the program. A limitation of the study was the fact that the control group was from rural

schools and the study group was from urban schools. The study looked at behaviours pre- and post-program, at 3 to 5 months, and again at one year after completion of the program. Participants were presented with hypothetical scenarios that related to risky situations. The participants were then asked to make decisions related to these hypothetical scenarios. Their responses were based on a Likert scale providing them with a choice of responses. Three separate scales were used in this study, a risky behaviour scale, a risk assessment of behaviour scale, and a risky attitude scale. Doze (1999) states that participation in the PARTY program did not result in significant long-term positive changes in risk-taking behaviours and beliefs.

Prince George PARTY Program

The PARTY program in Prince George was implemented in the spring of 1997. It was developed by 14 community agencies with a commitment to youth health and safety. It is operated out of the Prince George Regional Hospital (PGRH), in partnership with the Insurance Corporation of British Columbia (ICBC) Road Sense Team. The program runs September through June each year, and is offered to Grade 10 students within School District 57. The staff coordinating the PARTY program comprises a full-time registered nurse and a host of community volunteers. Appendix A contains a detailed description of the program.

Prior to this study, the Prince George PARTY program had not been formally evaluated. Subjective evaluations were done in the form of a one-page questionnaire filled out by the students after completing the hospital day segment of the PARTY program. Anecdotal evidence supporting the effectiveness of the PARTY program has been seen by the positive comments from emergency room nurses and paramedics. These

professionals have stated that they have had youth comment to them that they always wear their seatbelts and this is due to their participation in the PARTY program (Joanne Archer, personal communication, March 4, 2002). An objective evaluation of the Prince George PARTY program has not been done prior to this study although data has been collected using the pre and post-program questionnaires. These results showed an increase in risk-taking awareness between pre- and post-program questionnaires (Joanne Archer, personal communication, March 4, 2002).

The Present Study

The objective of this study was to determine the effectiveness of the PARTY program in changing youths' risk-taking behaviours and beliefs. The study has assessed the psychometric properties (internal consistency estimates and item-total correlations) of the risk-taking behaviours and beliefs measure being used by the PARTY program staff. The effects of the PARTY program have been determined by comparing pre-program, post-program, and follow-up scores on risk-taking behaviours and beliefs, and as a function of gender (males, females), school type (junior secondary, senior secondary), and school setting (rural, urban). The pre-program and follow-up comparison is the most interesting and informative as it is measuring the changes in the students' behaviours and beliefs. On the post-program questionnaire, 3 of the 12 items measure intentions to engage in the behaviour, while these same 3 items on the pre-program and follow-up questionnaires measure behaviour. The post-program questionnaire was included in the analysis because the post-program measure is what the PARTY program staff sees as validation the program works. The PARTY program does not use a follow-up questionnaire in their collection of data for the program. Inclusion of the post-program

measurement is an attempt to validate the PARTY program staffs' view of the effectiveness of their program. The findings of this study will be used by the PARTY program staff to determine which students had the greatest change in their risk-taking behaviours and beliefs following participation in the program, and which students had little change in their risk-taking behaviours and beliefs. The staff will then strive to improve the program to meet the needs of the students whose risk-taking behaviours and beliefs were not positively affected by the PARTY program. Based on previous research showing males are more likely than females to take risks (Kann et al., 2000) it was hypothesized that males in the study will have higher risk-taking behaviours and beliefs. It was also expected that rural youth would have similar or higher risk-taking behaviours and beliefs as urban youth as found by Cronk and Sarvela (1997) and O'Malley and Johnson (1999). It was expected that students attending a senior secondary school would have higher risk-taking behaviours and beliefs than those attending a junior secondary school as similar results were found by Simmons, Carlton-Ford, and Blyth (1987).

Chapter 3

Method

Study Sample

The PARTY program sends out guidelines for selecting students to participate in the program to all School District 57 high schools. These guidelines specify the target audience for the program as Grade 10 students, or those 15 years of age. The rationale behind targeting this age group is to make an impact on students prior to them receiving their drivers' licenses. Students attending the PARTY program are typically all from the same class within the school and selection is often a matter of scheduling convenience in the school as to who can attend and who cannot (Joanne Archer, personal communication, Nov. 21, 2000). The study sample was drawn from Grade 10 students within the School District 57 region. This included students from the following schools: three urban senior secondary schools, one junior secondary school, one rural senior secondary school, and one private senior secondary school. A total of 266 students completed the first questionnaire in the PARTY program. Of the 266 students who completed the first questionnaire, 162 (60.9%) completed all three times of measurement (see Table 1). Students were selected from their schools to attend the PARTY program by teachers and counselors. The PARTY program is not mandatory and students are not required to attend.

Study Design

This study utilized a mixed design. The within-subjects factor Time was chosen because the PARTY program staff use a pre- and post-program design for data collection

Table 1

Students Participating in the PARTY Program at Pre-program Only and Those Completing All Three Times of Measure

School	Males		Females		Total
	Pre-program Only	All Three Times of Measurement	Pre-program Only	All Three Times of Measurement	
1	7	8	4	9	28
2	12	9	7	19	47
3	9	35	10	16	70
4	15	25	14	25	79
5	14	1	8	4	27
6	2	7	2	4	15
Total	59	85	45	77	266

in their internal program evaluation procedures. The questionnaires used by the PARTY program staff were used in this study. A third questionnaire, modified slightly from the pre-program questionnaire, was administered to the study population three months after completion of the program. The third questionnaire was added to provide necessary data to assess whether there were lasting changes in regards to the students' risk-taking behaviours and beliefs following participation in the PARTY program. Between group factors assessed in the present study were gender (males, females), school location (urban, rural) and school structure (junior secondary, senior secondary).

Study Sequence and Time Frame

Data were collected between October 17th and December 20th 2000 using pre- and post-program questionnaires. Joanne Archer, PARTY program coordinator, went to classrooms to administer the follow-up questionnaire to participating students 3 months after their participation in the PARTY program.

The PARTY program is a hospital-based prevention program aimed at high school students in Grade 10. Prior to attending the program, students were visited in their schools by the program coordinator and given a description of the hospital day segment of the PARTY program. At that time the pre-program questionnaire was administered. Students attending the program spend a full day at the Prince George Regional Hospital where they receive information on the dangers of alcohol use and driving. During the morning session of the program a member of the Royal Canadian Mounted Police (RCMP), ambulance personnel, and medical professionals inform the students about the risks involved with alcohol use and operating motor vehicles. During the lunch break, students were assigned a disability and had to eat their lunch accordingly. This

experience gave the students an opportunity to simulate the experience of life with a disability and the hardships of daily living that disabled people encounter. The afternoon session consisted of tours of the emergency room, intensive care unit, and the hospital morgue. During these tours the students were given explanations of equipment used in trauma situations and had the opportunity to ask questions.

A post-PARTY session was completed at the school within one week of the hospital day. During this session, the video "When Choices Collide" was shown to the students. The class discussed individual scenes from the video and role-playing was used to further strengthen the message. The post-program questionnaire was then administered.

Procedures

Prior to participating in the program, each student was given a consent form for a parent or guardian to sign (see Appendix B). This consent form reviews the objectives of the PARTY program and the policy of confidentiality. Guardians also consent to their adolescent participating in the PARTY program pre- and post-program. Only the student's initials and birth date were utilized as identifiers on the questionnaires to ensure confidentiality.

Questionnaire

The questionnaire utilized to gather information for this study surveys (see Appendix C) is currently used by the Prince George PARTY program. Questions 1 to 3 on the questionnaire focus on behaviours or behavioural intentions, questions 4 to 10 focus on perceived risk, and questions 11 and 12 focus on youths' beliefs about their rights. For the study follow-up, the questionnaire was modified slightly in order to ensure

the correct information was obtained at 3 months. The follow-up questionnaire differed from the initial pre- and post-program questionnaires in that a time frame of 1 month was added to the first three items on the questionnaire along with a non-applicable option as these questions deal with sports typically played in the summer. The first three items on the questionnaire differed across time in that on the pre-program questionnaire, the items are asking about the general past, "how often do you wear your seat belt?" On the post-program questionnaire, the item asks, "how often will you wear your seat belt?" and on the follow-up questionnaire, "how often in the last month have you worn your seat belt?" These differences in the first three questions on the questionnaire raised some concerns regarding the comparability across time of the data collected with these three questions.

Data Analysis

Data were entered into the Statistical Package for Social Services (SPSS) 10.0 program. The internal consistency of the scale and item-total correlations for the items on the scale were examined using psychometric testing. Internal consistency refers to the degree to which the items on the scale measure the same dimension. Item-total correlations reveal the degree to which individual items contribute to the total score. This testing was completed on the pre-program, post-program, and follow-up questionnaires as the wording varied slightly on each questionnaire. This information was used to create a reliable index of youths' behaviours. Scale scores were analyzed in a series of mixed ANOVAs to assess changes in youths' behaviours following participation in the PARTY program and to assess the role of gender, school location, and school structure in youths' responses to the PARTY program.

Chapter 4

Results

Psychometric Analysis of Questionnaire

Psychometric analysis was completed on the questionnaire to determine whether it yielded a reliable index of youths' risk-taking behaviours and beliefs. The internal consistency of the scale and item-total correlations for items on the scale were examined. Internal consistency refers to the degree to which the items on the scale measure the same dimension. Item-total correlations reveal the degree to which individual items contribute to the total score.

Psychometric testing was initially done on the pre-program questionnaire, utilizing all 266 surveys. These 266 pre-program questionnaires were used for initial psychometric testing. Cronbach's alpha for the 12 items on the scale was estimated as .74 (standardized $\alpha = .74$, see Table D1). Alpha of .70 is considered reliable (Aron & Aron, 1999). These results indicated the scale had adequate internal consistency and that no items needed to be deleted.

Psychometric testing was then done on the questionnaire at pre-program, post-program, and follow-up including only those students who completed all three times of measurement, and answered all 12 items on the questionnaire. At pre-program, 151 questionnaires were included and Cronbach's alpha was estimated as .70 (standardized $\alpha = .71$). At post-program, 160 questionnaires were included and Cronbach's alpha was estimated as .80 (standardized $\alpha = .81$). At follow-up, 76 questionnaires were included and Cronbach's alpha was estimated as .70 (standardized $\alpha = .71$). Tables D2, D3, and D4 contain the item-total correlations and alpha if the item was deleted for pre-program,

post-program and follow-up respectively. These results indicated the scale had adequate internal consistency and that no items needed to be deleted (see Appendix D).

Psychometric testing was again performed on the questionnaire at pre-program, post-program, and follow-up, including only those students who participated at all three times of measurement, but with the first three items of the questionnaire removed. Those students who completed all nine items are included in this analysis. At pre-program, 157 questionnaires were included and Cronbach's alpha was estimated at .62 (standardized α = .63). At post-program, 162 questionnaires were included and Cronbach's alpha was estimated at .76 (standardized α = .78). At follow-up 160 questionnaires were included and Cronbach's alpha was estimated at .67 (standardized α = .70).

A decision was made to use the 12-item questionnaire as opposed to the 9-item questionnaire for three reasons. The 12-item questionnaire has a higher alpha than the 9-item questionnaire giving the results more internal consistency. The 12-item and 9-item questionnaires are also highly correlated, at pre-program, post-program, and follow-up (r = .952, .962, and .954 respectively). The analyses were run using both the 12-item and the 9-item questionnaire and the results were very similar. Thus, all results reported are based on the 12-item questionnaire.

Psychometric evaluations revealed that the scale measured a one-dimensional theoretical construct that will be referred to as "risk-taking behaviours and beliefs". Scores for subsequent analyses were constructed as follows. Seven of the 12 items on the questionnaire were phrased such that a high score would indicate less risk-taking behaviours and beliefs. The remaining 5 items were phrased such that a high score would indicate more risk-taking behaviours and beliefs. To calculate scores for analysis, those 5

items were reverse scored, such that a response of 5 indicated the least risky behaviours and beliefs and a score of 1 indicated the most risky behaviours and beliefs. With the five items reverse scored, a mean of the item scores was used to create a scale score that had acceptable internal consistency. The mean of the item scores was used for all analyses instead of the sum of item scores as not all participants answered all questionnaire items. Using the mean of item scores as the dependent variable permitted inclusion of youth that missed up to three items on a given questionnaire while maintaining a constant scale across all youth. Four items had a maximum score of 4 whereas 8 items had a maximum score of 5; therefore, the mean of items scores had a minimum value of 1 (most risk) and maximum score of 4.75 (least risk). The mean of the 12 individual item scores (with 5 items reversed before taking the mean) was used as the dependent variable in all subsequent analyses.

The first three items on the pre-program and follow-up questionnaires are measuring a behaviour (e.g. "how often do you wear a seat belt…") whereas the first three items on the post-program questionnaire are measuring an intention, (e.g., "how often will you wear a seat belt…"). This difference in the meaning of the post-program questionnaire could elevate the scores in the post-program results.

Representativeness Analysis

An analysis of representativeness of the sample was done to determine if there were differences between the students who completed all three times of measurement and those who did not. Representativeness analyses were done for each school separately. At two of the six schools there were insufficient numbers of students completing all three times of measurement to do a proper analysis. Therefore a representativeness analysis

was not conducted for those two schools, and those schools were not included in any of the subsequent analyses. For each of the 4 remaining schools, a 2 (Gender) by 2 (Complete/Not Complete) mixed ANOVA was run using pre-program scores as the dependent variable. Pre-program scores were used because all participants in the PARTY program completed the pre-program while only a percentage completed all three times of measurement.

At School 1, 17 students (8 males, 9 females) completed all three times of measurement while 11 students (7 males, 4 females) participated in the pre-program only. There was no difference between those students who completed all three times of measurement and those who did not, $F(1, 24) = 0.37$, *ns*, and the interaction between Gender and Completion was not significant, $F(1, 24) = 1.0$, *ns* (see Table 2). At School 2, 28 students (9 males, 19 females) completed all three times of measurement while 16 students (11 males, 5 females) participated in the pre-program only. There was no difference between those students who completed all three times of measurement and those who did not, $F(1, 40) = 0.01$, *ns*, and the interaction between Gender and Completion was not significant, $F(1, 40) = 2.25$, *ns* (see Table 2). At School 3, 51 students (35 males, 16 females) completed all three times of measurement while 19 students (9 males, 10 females) participated in the pre-program only. There was no difference between those students who completed and those who did not, $F(1, 66) = 0.60$, *ns*, and the interaction between Gender and Completion was not significant, $F(1, 66) = 1.0$, *ns* (see Table 2).

Table 2

Source Table for Analysis of Variance of Risk-taking Behaviours and Beliefs of Students Who Completed the PARTY Program and Those Who Did Not – Schools 1 to 4

Source	*df*	*F*	η^2	*p*
		School 1		
Gender (G)	1	7.09*	.228	.014
Complete (C)	1	0.37	.002	.85
G X C	1	1.00	.040	.33
S within-group error	24	(0.502)		
		School 2		
Gender (G)	1	7.22*	.153	.010
Complete (C)	1	0.01	.000	.92
G X C	1	2.25	.053	.14
S within-group error	40	(0.221)		
		School 3		
Gender (G)	1	0.03	.000	.87
Complete (C)	1	0.60	.009	.45
G X C	1	0.99	.001	.75
S within-group error	66	(0.221)		
		School 4		
Gender (G)	1	0.008	.000	.93
Complete (C)	1	0.53	.007	.47
G X C	1	6.09*	.076	.016
S within-group error	74	(0.221)		

Note. Values enclosed in parentheses represent mean square errors. η^2 represents the measure of effect size for ANOVA.

These results indicate that for Schools 1, 2, and 3 the samples of students who completed all three times of measurement were representative of all students who participated at pre-program, regarding their risk-taking behaviours and beliefs.

At School 4, the only rural school in the study, 50 students (25 males, 25 females) completed all three times of measurement while 28 students (14 males, 14 females) participated at pre-program only. There was no overall difference between those students who completed and those who did not, $F(1, 74) = 0.53$, *ns*. However, the interaction between Gender and Completion was significant, $F(1, 74) = 6.09$, $p < .05$ (see Table 2). Post hoc tests were conducted to determine which means differed. At pre-program, risk-taking behaviours and beliefs held by females who participated at all three times of measurement ($M = 3.16$) and those females who did not ($M = 3.39$) were not significantly different, $t(74) = 1.33$, *ns*. The difference between males who completed all three times of measurement ($M = 3.50$) and males who did not ($M = 3.07$) was significant, $t(74) = 2.38$, $p < .05$. This indicates that at pre-program the males who completed all three times of measurement had less risky risk-taking behaviours and beliefs than did males who participated at pre-program only. Thus, the males from School 4 who completed all three times of measurement were not representative of all males at School 4; they exhibited less risky risk-taking behaviours and beliefs than did males who participated at pre-program only. For females from School 4, and males and females from Schools 1, 2, and 3, the youth who completed all three times of measurement were representative of all the youth from those schools who participated at pre-program.

Analysis of the Effects of the PARTY Program

An analysis was completed to determine if there was an overall effect of the PARTY program on youths' risk-taking behaviours and beliefs. Students (85 males, 77 females) who completed all three times of measurement were included in the analysis. A full comparison in one ANOVA was not possible as there was no rural junior secondary school included in the study. Alpha was protected by using a Bonferroni correction. Four ANOVAs were planned for the data set; therefore, alpha of .05/4 = .0125 was used for interpretation of main effects and interactions.

A 2 (Gender) by 3 (Time) ANOVA was carried out to determine if there was a significant effect of the PARTY program on students' risk-taking behaviours and beliefs and whether effects of the program were different for males and females. The ANOVA source table appears in Table 3. The main effect of Time was significant, $F(2, 320) = 32.25$, $p < .0125$. Post-hoc tests revealed a significant difference between the pre-program ($M = 3.58$) and the post-program ($M = 3.82$), $t(160) = 6.42$, $p < .05$, and the pre-program and follow-up test ($M = 3.85$), $t(160) = 7.26$, $p < .05$. There was no significant difference between the post-program and follow-up test scores, $t(160) = 0.84$, *ns*. These means reveal the PARTY program to have an overall positive effect on youths' risk-taking behaviours and beliefs. To explore these findings further, analyses were conducted to determine effects of gender (males/females), school location (rural/urban) and school structure (junior secondary/senior secondary).

Table 3

Source Table for Analysis of Variance of Risk-taking Behaviours and Beliefs for all Participating Students From the Four Schools Analyzed

Source	*df*	*F*	η^2	*p*
		Between Subjects		
Gender (G)	1	3.98	.024	.048
S within-group Error	160	(0.674)		
		Within Subjects		
Time (T)	2	32.25*	.168	.001
T X G	2	4.0	.024	.019
T X S within-Group error	320	(0.10)		

Note. Values enclosed in parentheses represent mean square errors. η^2 represents the measure of effect size for ANOVA.
*$p < .05$.

Comparison of Two Urban Senior Secondary Schools

The two participating urban senior secondary schools were compared to determine if there were differences between these two schools. This was carried out to assess the validity of grouping these two schools together as one for subsequent comparisons of urban versus rural high schools and junior versus senior secondary schools.

A 2 (School) by 2 (Gender) by 3 (Time) mixed ANOVA was done. Given that the goal of this analysis was to assess the comparability of the schools, only those effects involving school are relevant here (see Table 4). The main effect of School was not significant, $F(1, 41) = 0.02$, *ns*. The interaction of School and Gender was not significant, $F(1, 41) = 1.20$, *ns*. The Time by School interaction was not significant, $F(2, 82) = 0.46$, *ns*, nor was the Time by School by Gender interaction, $F(2, 82) = 1.17$, *ns*. The implication of these findings is that the two urban senior secondary schools could be treated as one group for comparison to other schools in subsequent analyses.

Table 4

Source Table for Analysis of Variance of the Risk-taking Behaviours and Beliefs for the Two Urban High Schools

Source	*df*	*F*	η^2	*p*
		Between Subjects		
Gender (G)	1	9.24*	.184	.004
School (S)	1	0.02	.000	.89
G X S	1	1.20	.280	.03
S within-group Error	41	(0.542)		
		Within Subjects		
Time (T)	2	17.89*	.304	.001
T X G	2	0.87	.021	.412
T X S	2	0.46	.011	.632
T X S X G	2	1.17	.028	.317
T X S within-Group error	82	(0.084)		

Note. Values enclosed in parentheses represent mean square errors. η^2 represents the measure of effect size for ANOVA.
*$p < .05$.

School Location and Youths' Risk-taking Behaviours and Beliefs and Response to the PARTY Program

Males and females from rural and urban high schools were compared to determine if possible differences in risk-taking behaviours and beliefs and responses to the PARTY program could be linked to differences between rural and urban communities. A 2 (Gender) by 2 (School Location) by 3 (Time) mixed ANOVA was conducted. Fifty students from a rural community (25 females, 25 males) were compared to 61 students from an urban community (36 females, 25 males). All schools represented in this comparison were senior secondary schools offering Grades 8 to 12.

Means are plotted in Figure 1 and the ANOVA source table appears in Table 5. In the 2 (Gender) by 2 (School Location) by 3 (Time) mixed ANOVA, the main effect of Gender was not significant, $F(1, 107) = 2.79$, *ns*. The effect of School Location was significant, $F(1, 107) = 30.38$, $p < .0125$, and was qualified by a significant interaction of Gender and School Location, $F(1, 107) = 7.67$, $p < .0125$.

The main effect of Time was significant, $F(2, 214) = 31.02$, $p < .0125$, as was the Time by Gender by School Location interaction, $F(2, 214) = 4.94$, $p < .0125$. To interpret the significant three-way interaction, separate 2 (School Location) by 3 (Time) ANOVAs were run for males and for females (see Table 6). Averaged over time, urban and rural males displayed similar risk-taking behaviours and beliefs (*Ms* = 3.52 and 3.74, respectively), $F(1, 48) = 2.68$, *ns*. For males, the effect of Time was significant, $F(2, 96) = 7.10$, $p < .05$, and was qualified by a significant interaction of Time and School Location, $F(2, 96) = 6.58$, $p < .05$. Post-hoc tests revealed that rural males' risk-taking behaviours and beliefs did not change as a result of participation in the PARTY program

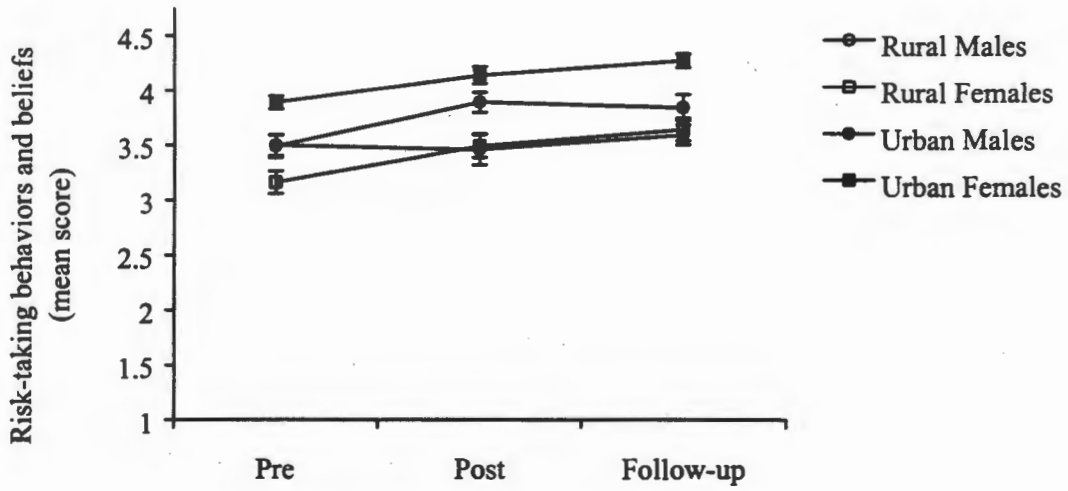

Figure 1. Mean risk-taking scores (+/- SE_M) for rural and urban males and females at pre, post and follow-up times of measurement. Higher scores reflect less risk-taking.

Table 5

Source Table for Analysis of Variance of the Risk-taking Behaviours and Beliefs for Students in Rural/Urban High Schools

Source	*df*	*F*	η^2	*p*
		Between Subjects		
Gender (G)	1	2.79	.025	.098
School (S)	1	30.38*	.221	.001
G X S	1	7.67*	.067	.007
S within-group error	107	(0.538)		
		Within Subjects		
Time (T)	2	31.02*	.225	.001
T X G	2	3.04	.028	.050
T X S	2	2.35	.021	.098
T X S X G	2	4.94*	.044	.008
T X S within-group error	214	(0.097)		

Note. Values enclosed in parentheses represent mean square errors. η^2 represents the measure of effect size for ANOVA.
*$p < .05$.

Table 6

Source Table for Analysis of Variance of Risk-taking Behaviours and Beliefs for Rural/Urban Males/Females

Source	*df*	*F*	η^2	*p*
		Males		
		Between Subjects		
School (S)	1	2.68	.053	.11
S within-group error	48	(0.70)		
		Within Subjects		
Time (T)	2	7.1*	.129	.001
T X S	2	6.58*	.121	.002
T X S within-group error	96	(0.09)		
		Females		
		Between Subjects		
School (S)	1	49.30*	.99	.001
S within-group error	59	(0.41)		
		Within Subjects		
Time (T)	2	28.35*	.325	.001
T X S	2	0.39	.007	.681
T X S within-group error	118	(0.10)		

Note. Values enclosed in parentheses represent mean square errors. η^2 represents the measure of effect size for ANOVA.
*$p < .05$.

(pre-program, post-program, and follow-up *Ms* = 3.50, 3.46, and 3.59, respectively), *t*s(48) = 0.45, *ns*. Conversely, urban males' scores increased significantly from pre-program ($M = 3.49$) to post-program ($M = 3.89$), $t(48) = 4.60$, $p < .05$ and did not change between post-program and follow-up ($M = 3.84$), $t(48) = 0.57$, *ns*. Averaged over time, urban females held significantly less risky risk-taking behaviours and beliefs ($M = 4.10$) than did rural females ($M = 3.43$), $F(1, 59) = 49.3$, $p < .05$. For females, the main effect of Time was significant, $F(2, 59) = 28.35$, $p < .05$, but the Time by School Location interaction was not significant, $F(2, 59) = 0.39$, *ns*, indicating that the pattern of change was the same for rural and urban females. Regardless of school location, females' scores increased significantly across all three testing occasions (*Ms* = 3.59, 3.87, 4.01), *t*s(59) = 4.38, 7.37, and 2.47, *ps* < .05, respectively.

In summary, results from analyses involving school location indicated that the students from the rural school held more risky risk-taking behaviours and beliefs than did the students from the urban schools. Both urban and rural females' risk-taking behaviours and beliefs changed after participation in the PARTY program, but urban females' risk-taking behaviours and beliefs were initially less risky overall than rural females' risk-taking behaviours and beliefs. Rural males' risk-taking behaviours and beliefs did not change after participation in the PARTY program, whereas urban males' risk-taking behaviours and beliefs became less risky after their participation and this change was maintained at follow-up.

School Type and Youths' Risk-taking Behaviours and Beliefs and Responses to the PARTY Program

Grade 10 students (35 males, 16 females) from an urban junior secondary school, which offered Grades 8 to 10, were compared with students (25 males, 36 females) from two urban senior secondary schools, which offered Grades 8 to 12. This analysis was done to determine if having Grade 11 and 12 students in the school was associated with the Grade 10 students adopting more risk-taking behaviours and beliefs and having different responses to the PARTY program.

Means are plotted in Figure 2 and the ANOVA source table appears in Table 7. In the 2 (Gender) by 2 (School Type) by 3 (Time) mixed ANOVA, the effect of Gender was significant, $F(1, 108) = 7.82$, $p < .0125$. Overall, females had less risk-taking behaviours and beliefs ($M = 4.03$) than did males ($M = 3.75$). The effect of School Type was not significant, $F(1, 108) = 2.0$, *ns*, nor was the interaction of Gender and School Type, $F(1, 108) = 2.69$, *ns*. The main effect of Time was significant, $F(2, 216) = 28.92$, $p < .0125$ and revealed a positive effect of the PARTY program. The Time by Gender interaction was not significant, $F(2, 216) = 0.72$, *ns*.

The Time by School Type interaction was significant, $F(2, 216) = 5.73$, $p < .0125$, and was qualified by a significant Time by Gender by School Type interaction, $F(2, 216) = 5.69$, $p < .0125$. To interpret the significant three-way interaction, separate 2 (School Type) by 3 (Time) ANOVAs were run for males and females (see Table 8). Averaged over time, males attending the junior secondary school and males attending senior secondary schools had similar risk-taking behaviours and beliefs, (*Ms* = 3.76 and 3.74 respectively), $F(1, 58) = 0.02$, *ns*. For males, the effect of Time was significant,

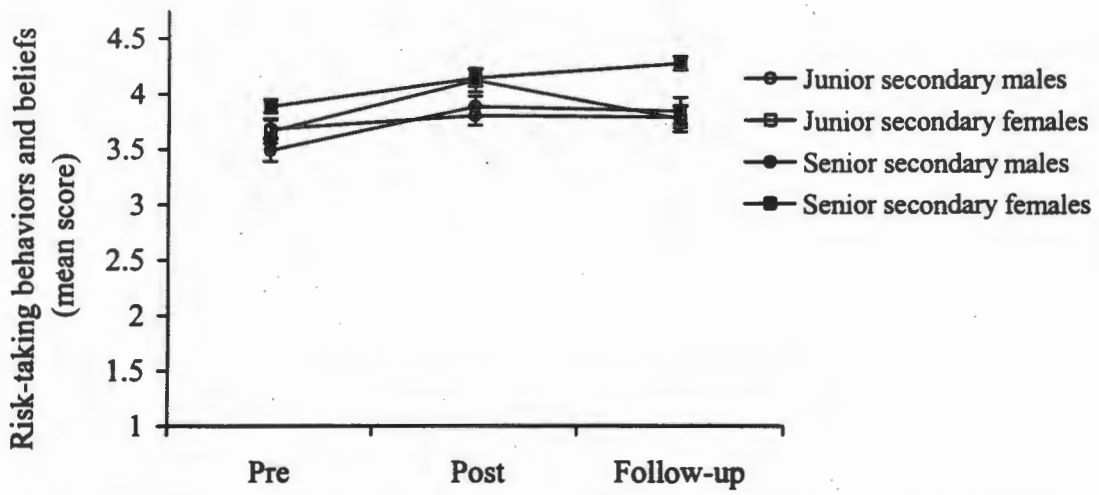

Figure 2. Mean risk-taking scores (+/- SE_M) for senior and junior secondary school males and females at pre, post and follow-up times of measurement. Higher scores reflect less risk-taking.

Table 7

Source Table for Analysis of Variance of Risk-taking Behaviour and Beliefs for Junior/Senior Secondary High School Students

Source	*df*	*F*	η^2	*p*
		Between Subjects		
Gender (G)	1	7.82*	.067	.006
School (S)	1	2.0	.018	.162
G X S	1	2.69	.024	.104
S within-group error	108	(0.502)		
		Within Subjects		
Time (T)	2	28.92*	.211	.001
T X G	2	0.72	.007	.488
T X S	2	5.73*	.050	.004
T X S X G	2	5.69*	.050	.004
T X S within-group error	216	(0.089)		

Note. Values enclosed in parentheses represent mean square errors. η^2 represents the measure of effect size for ANOVA.
*$p < .05$.

Table 8

Source Table for Analysis of Variance of Risk-taking Behaviours and Beliefs of Junior/Senior Secondary Females/Males

Source	*df*	*F*	η^2	*p*
		Females		
		Between Subjects		
School (S)	1	6.60*	.117	.013
S within-group error	50	(0.31)		
		Within Subjects		
Time (T)	2	14.19*	.211	.001
T X S	2	6.24*	.111	.003
T X S within-group error	100	(0.10)		
		Males		
		Between Subjects		
School (S)	1	0.02	.000	.88
S within-group error	58	(0.67)		
		Within Subjects		
Time (T)	2	14.81*	.203	.001
T X S	2	4.38	.070	.015
T X S within-group error	116	(0.08)		

Note. Values enclosed in parentheses represent mean square errors. η^2 represents the measure of effect size for ANOVA.
*$p < .05$.

$F(2, 116) = 14.81, p < .05$. There was no significant interaction of Time and School Type, $F(2, 116) = 4.38$, *ns*.

Averaged over time, females attending senior secondary high schools had significantly less risk-taking behaviours and beliefs ($M = 4.10$) than did females attending the junior secondary school ($M = 3.85$), $F(1, 50) = 6.60, p < .05$. For females, the effect of Time was significant, $F(2, 100) = 14.19, p < .05$, and was qualified by a significant interaction of Time and School Type, $F(2, 100) = 6.24, p < .05$. Post hoc testing revealed that for females attending the junior secondary high school, scores increased significantly from pre-program ($M = 3.67$) to post-program ($M = 4.12$), $t(100) = 4.60, p < .05$, but decreased significantly between post-program and follow-up ($M = 3.77$), $t(100) = 3.43, p < .05$. No significant change in scores was evident between pre-program ($M = 3.67$) and follow-up ($M = 3.77$), $t(100) = 0.88$, *ns*. This indicates that, for females attending the junior secondary school, behaviours became less risky after completing the PARTY program but returned to pre-program levels at follow-up. Risk-taking behaviours and beliefs of females attending senior secondary schools improved significantly between pre-program ($M = 3.89$) and post-program ($M = 4.14$), $t(100) = 3.33, p < .05$, but not between post-program and follow-up ($M = 4.27$), $t(100) = 1.73$, *ns*. These results indicate that risk-taking behaviours and beliefs of females attending senior secondary schools became less risky after participating in the PARTY program and these changes were maintained at follow-up testing.

In summary, the results from analyses involving school structure revealed that females had lower risk-taking behaviours and beliefs than did the males overall. Behaviours and beliefs of males at the junior secondary school and the senior secondary

schools did not differ following the PARTY program. Behaviours and beliefs of females at the junior secondary school and the senior secondary schools became less risky following the PARTY program. These changes were maintained for the females from the senior secondary schools but not for the females from the junior secondary school.

Chapter 5

Discussion

The PARTY (Prevent Alcohol Related Trauma in Youth) program is a one-day, hospital-based program that targets youth in Grade 10. The program's intention is to educate youth on the dangers of alcohol and how alcohol contributes to preventable trauma. The objective of this study was to determine the PARTY program's effectiveness in eliciting changes in Grade 10 students' alcohol related risk-taking behaviours and beliefs. Psychometric evaluation of the PARTY program questionnaire was conducted to determine the reliability of the outcome questionnaire used by the PARTY program. Differences in risk-taking behaviours and beliefs of males and females, rural versus urban students, and students attending junior versus secondary schools were evaluated to assess changes associated with students' participation in the PARTY program.

Concerns regarding the questionnaire used by the PARTY program were evident from the onset of the study. The first 3 items on the pre-program and follow-up questionnaires measured behaviours while the first 3 items on the post-program questionnaire measured intentions. Therefore the questionnaire implemented by the PARTY program was tested using psychometric analysis, first with the first 3 items included (12-item), and again with the first 3 items removed (9-item), to determine whether it could be used to create a reliable index of risk-taking behaviours and beliefs. The scale measured a one-dimensional theoretical construct that was referred to as "risk-taking behaviours and beliefs." A decision was made to use the 12-item questionnaire as opposed to the 9-item questionnaire for three reasons. The 12-item questionnaire has a higher alpha than the 9-item questionnaire reflecting higher internal consistency and less

measurement error. The 12-item and 9-item questionnaires were also highly correlated indicating little difference in student responses between the two versions. Finally, analyses based on the 12-item and the 9-item questionnaires yielded very similar results.

Four of the six participating schools had large enough samples to be analyzed separately. Two urban senior secondary schools, one rural senior secondary school and one junior secondary school were included in analyses. Representativeness analyses revealed that the females from School 4 (the only rural school in the sample of schools) and both the males and females from Schools 1, 2, and 3 who completed all three times of measurement were representative of all the youth who participated in pre-program measurement. The males from School 4 who completed all three times of measurement were not representative of all the males at School 4 because they exhibited less risky behaviours and beliefs than did the males who participated at pre-program measurement only. The results found in this study regarding rural males must be interpreted with caution as they may only represent this unique study group with respect to risk-taking behaviours and beliefs.

An analysis was completed to determine if there was an overall effect of the PARTY program on youths' risk-taking behaviours and beliefs regardless of school location or structure. The PARTY program had an overall positive effect on both males' and females' risk-taking behaviours and beliefs, with the females having less risky attitudes than the males. These findings are consistent with the research of Kann et al. (2000) who found that males consistently take greater risks than females. To explore these findings further, analyses were conducted to determine the effects of gender (male/female), school location (rural/urban) and school structure (junior/senior

secondary) on youths' responses to the PARTY program. The two urban secondary schools were treated as one group for comparisons to other schools in these analyses.

Students at the rural senior secondary school were compared to students from the two urban senior secondary schools to determine if differences in risk-taking behaviours and beliefs existed between these two geographically different groups. Females from both schools exhibited changes in their risk-taking behaviours and beliefs that were maintained at follow-up, but the females from the rural schools had significantly higher risk-taking behaviours and beliefs overall than did the females from the urban school. Rural males' risk-taking behaviours and beliefs did not change after participation in the PARTY program whereas urban males' risk-taking behaviours and beliefs became less risky after participation and this change was maintained at follow-up. These results show that overall the students from the rural school held greater risk-taking behaviours and beliefs than did the students from the urban schools. These results mirror those found by O'Malley and Johnston (1999) who in their study of American rural students found that rates of drinking and driving or riding with a driver that has been drinking were negatively correlated with the density of the population. The results from this study do not support the findings of Pope, Smith, Wayne, and Kelleher (1994) who found in their study of gender differences in drinking patterns of rural American adolescents that males more often than females reported low academic achievement, smoking, and not wearing seat belts. In the present study, rural females displayed greater risk-taking behaviours and beliefs at pre-program than did rural males, but they did show a sustained improvement in risk-taking behaviours and beliefs over the three times of measurement.

Students attending the urban senior secondary schools were compared to students attending an urban junior secondary school to determine if school structure influenced students' risk-taking behaviours and beliefs. Senior secondary schools differ from junior secondary schools in that Grade 11 and 12 students are present in senior secondary schools but not in junior secondary schools. The results showed that for males attending the junior secondary school, risk-taking behaviours and beliefs did not change as a result of participation in the PARTY program. There was no significant difference between the risk-taking behaviours and beliefs of junior secondary and senior secondary school males at pre-program testing, but the senior secondary school males saw their behaviours and beliefs become significantly less risky from pre-program to follow-up. This indicates a positive effect of participation in the PARTY program on the senior secondary school males.

Urban junior secondary school females saw their risk-taking behaviours and beliefs become less risky immediately after participation in the PARTY program. However, these changes were not maintained at follow-up indicating that for urban junior secondary school females the PARTY program was ineffective. Urban senior secondary school females' risk-taking behaviours and beliefs became less risky after participation in the PARTY program. These changes in behaviour were maintained at follow-up indicating a positive effect of the PARTY program on the urban senior secondary school females.

These results regarding school structure do not support the findings of Moody-Thomas, Doherty, and Fick (1987) who found that the presence of older students increased the risk-taking behaviours and beliefs of younger students in the school setting.

No significant difference was seen in the risk-taking behaviours and beliefs of junior versus senior secondary school males. A significant difference was found between the junior and senior secondary school females, with the junior secondary school females having the greater risk-taking behaviours and beliefs.

Limitations

The limitations of this study relate to the sample used, the questionnaire, and the design of the study. The sample used in this study consisted of students enrolled in Grade 10 from the School District 57 region. This sample did not include youth who are not enrolled in school but who are in the same age range as the Grade 10 participants, which limits the extent to which the study findings can be applied to the general population. In this sense the sample was not representative of 15-year-olds living within School District 57.

Students are advised that smoking is not permitted during the PARTY program hospital day (School District 57 field trip policy) and if they cannot manage a smoke-free day, they should not attend. This school district policy restricts attendance to the PARTY program to the students at the lowest risk for using drugs, the non-smokers. As the literature shows, adolescents that smoke are more likely to drink alcohol and use other illicit drugs (Lindsay & Rainey, 1997). In terms of alcohol related trauma, the students at highest risk are those Grade 10 students that smoke but their access to the PARTY program is limited by the policy. Therefore the no smoking policy potentially eliminates the highest risk subgroup within the target population (Lindsay & Rainey, 1997).

Limitations related to the questionnaire included problems with the item content, and the time frame referenced by the items. First, the questionnaire contained an item

that was asking two separate questions. Question 4 asked, "how likely is it that you would survive a car accident without injury if you were not wearing a seat belt?" This question should be rewritten as two questions. The first question, "how likely is it you would survive a car accident without injury?" The second question, "how likely is it you would survive a car accident if you were not wearing a seat belt?" The wording of item 4 might have confused participants answering the question, thereby invalidating responses to that item. Second, the first three items on the pre-program and follow-up questionnaires measure participants' behaviours, whereas the first three items on the post-program questionnaire measure the client's willingness to reduce their risk-taking behaviours and beliefs. The PARTY program is a very intense one-day session where the participants are subjected to some very disturbing images and concepts. Their willingness to comply with a safer approach to life seems to be heightened due to this barrage of stimulation as indicated by less risky behaviours and beliefs at post-program testing. The follow-up questionnaire is again measuring behaviour. The intensity of the PARTY program day had possibly faded in some of the participants' minds when the follow-up questionnaire was administered, and this might potentially be the reason some of the participants did not maintain their post-program reduction in risk-taking behaviours and beliefs. Perhaps the students who maintained post-program changes 3 months later at follow-up testing had some reinforcement of what they learned at the PARTY program during the 3-month interval between post-program and follow-up testing.

Third, the time frame referenced by the first three items on the PARTY program questionnaire is a concern as it is not consistent between pre-program, post-program, and follow-up testing. The first three items on the pre-program questionnaire asks the

question, "how often do you usually wear your…?" This is very general and is open to the participants' interpretation of what "usually" means. The first three items on the post-program questionnaire ask about an intention to carry out behaviours, "how often will you wear..?" The first three items on the follow-up questionnaire ask "how often in the past month have you..?" The follow-up questionnaire is looking at a specific time frame. These inconsistencies in the time referenced could render the data collected at the three times of measurement less comparable across time.

Limitations related to the design of the study include problems related to the absence of a control group and lack of control of events occurring between pre-program and follow-up testing. Control for pre-existing differences could not be done, as the study did not have a control group. The study did not account for historical events that might have influenced the participants' responses. Dry Grad promotions in the senior secondary schools focus on the hazards of drinking and driving. The participants from the junior secondary school are not exposed to these promotions to the same extent as their senior secondary counterparts. Such events as the death of a school friend due to trauma, or media events that promote safety or death of a celebrity due to drinking and driving could be responsible for positive outcomes on the follow-up questionnaire. The questionnaire provided no information regarding the ethnicity of the participants, socioeconomic conditions, family alcohol and drug history, family risk-taking behaviours and beliefs, or school support for risk-reduction programs. Without this information it is not possible to look at confounding variables that might be influencing the participants' risk-taking behaviours and beliefs.

Implications for Practice

The results of this study have shown the PARTY program is effective in changing the risk-taking behaviours and beliefs of certain groups of youth, but not others. The program was most effective in changing the risk-taking behaviours and beliefs of urban senior secondary school females and males, and rural senior secondary school females. The program was least effective in changing the risk-taking behaviours and beliefs of junior secondary school males and females, and rural senior secondary school males. These results could possibly indicate that some type of reinforcement of what the students learned in the PARTY program took place during the 3-month interval between post-program and follow-up testing, possibly making the program effective for a longer period of time.

Implications For Future Research

Future research into the effectiveness of the PARTY program should use a study design that incorporates a control group. A control group will allow the researcher to manage the effects of confounding variables that were not controlled in the present study. The study design should include a randomized sample from a larger and more representative sample of participants to increase the validity of the results and allow generalization to the population of interest. The questionnaire being used by the PARTY program needs to be expanded to include questions concerning the participant's home environment (e.g. family dynamics, how supportive the parents are, alcohol and drug use, school environment, school initiatives for safe choices, teacher support for program). The questionnaire also should include self-reported descriptive data from each participant that includes academic achievement, injury history, alcohol and drug use, and sensation

seeking behaviours. The time frame used at each measure should also be made consistent so there is no ambiguity in the questions (e.g., "in the past month, how often have you worn your seat belt?"). The time lag between pre-program and post-program questionnaires would need to be 1 month to facilitate this change.

To determine long term changes in risk-taking behaviours and beliefs of participants in the PARTY program, links could be forged with the local hospital to track admissions to the emergency department. This could be accomplished by using participants' personal health care numbers, and collecting these data would allow for direct comparisons between youth who have and have not participated in the PARTY program. This would give the program a much better indication of the effectiveness of the program in reducing risk-taking behaviours and beliefs. A second avenue for evaluating the program's long-term effects is analysis of driving records. By tracking driving records, an evaluation could be conducted to determine if driving habits of youth who participated in the program have improved over those who did not participate in the program.

The differences seen between the rural and urban participants in the study need to be investigated further to determine the reasons behind the higher risk-taking behaviours and beliefs of the rural youth. Areas to focus on could be the possibility of greater responsibility given to rural youth by their parents and community perhaps leading to these youth making decisions beyond their capacity. Rural youth might also be exposed to the slaughter of animals, which in turn might reduce the impact of the graphic blood and gore images conveyed during the PARTY program on rural youth, relative to the impact on urban youth.

Implications For Health Policy

School District 57's policy that there be no smoking on field trips could be limiting the number of high-risk youth participating in the PARTY program. Research has shown that cigarette smoking serves as a gateway into experimentation with other drugs and consequently risk-taking behaviours (Lindsay & Rainey, 1997). Theoretically the students who smoke might benefit the most from the PARTY program. Future research in the School District 57 area needs to look at how many youth do not attend the PARTY program and other risk-reduction programs offered in the district due to the non-smoking policy, and address how this client group can then be served.

Implications For The Prince George PARTY Program

The Prince George PARTY program has shown an overall positive effect in improving the risk-taking behaviours and beliefs of Grade 10 students participating in the program. The results of the study have revealed several areas that may warrant further exploration to ensure the continued success of the PARTY program.

1. Before any changes are made to the questionnaire to collect additional data, it is recommended that the Prince George PARTY program coordinator interview some PARTY program participants on a one-to-one basis to determine if the data collection procedure is allowing participants to answer the questions in an honest manner. Are participants influenced by peer pressure when completing the questionnaire in a group setting? The questionnaires could be answered in an exam type setting with no talking or interactions amongst students to try and limit peer pressure influencing the results. A second area to focus on prior to making changes in the questionnaire is to find out more about the schools the participants are coming from. Did students who showed significant

improvements in risk-taking behaviours and beliefs receive more support at their schools, than the students who showed no improvement? If so, is it possible to encourage this same support in the schools that are not providing it?

2. Change question 4 on the survey from one question into two questions.

3. Engage in discussions with School District 57 about amending the no smoking policy on field trips. Could this policy be amended and an exception made for participants of the PARTY program?

4. The PARTY program appears to be based on the protection motivation theory of fear. This theory has not been proven effective in showing long-term positive changes in behaviour (Rogers, 1975), and given that youth have exaggerated beliefs around their own indestructibility stemming from adolescent egocentrism (Dolcini et al., 1989), this approach might not be the most effective method for bringing about long-term change. A recommendation for strengthening the PARTY program would be to incorporate elements of social resistance skills training into the program day, and forge partnerships with community agencies (i.e., public health nursing) to provide follow-up reinforcement in the schools using social resistance skills training. Examples of activities students could become involved with include dry graduation committees, student involvement in school safety fairs, school drag racing teams doing class presentations in conjunction with ICBC on road safety, drama class productions centered around grief and loss due to alcohol related trauma, and career and personal planning student class presentations on risk-taking behaviours.

5. Consider collecting information about the home environment of PARTY program participants, i.e. family dynamics, how supportive are the parents in reducing risk-taking behaviours, alcohol and drug use etc.

6. Track hospital admission records using the personal health care number of participants and driving records through ICBC.

Summary

The evaluation of the PARTY program used a 12-item questionnaire to evaluate the effectiveness of the program in changing youths' risk-taking behaviours and beliefs. The PARTY program is effective in changing the risk-taking behaviours and beliefs of certain groups but not others. The results indicate that the PARTY program has a positive effect on the risk-taking behaviours and beliefs of urban females and males, and rural females attending senior secondary schools. The PARTY program showed no significant effect on the risk-taking behaviours of junior secondary males and females, or rural males attending senior secondary schools.

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Appendix A

The PARTY Program

Pre-PARTY Session

The program coordinator visits the school to speak with the students prior to their attendance in the program. At this time the coordinator reviews the instructions for completion of the pre-program questionnaire. This visit takes approximately 30 minutes and is intended to prepare the students for their hospital day. Issues discussed include the importance of breakfast that morning, behaviour expectations, confidentiality issues, and bag lunch suggestions. A 7-minute video is shown depicting a motor vehicle accident and interviews with two accident survivors as well as a mother of a youth who has died in a car accident. The specific message is about seat belt use and this sets the tone for the hospital day. It is stressed during this time that if any students feel overwhelmed at any time during the program (e.g., during the visit to the morgue), they may choose not to participate in that section of the program.

Hospital Day

The Hospital Day consists of three sessions: morning, lunch and afternoon. During the morning session, the students view presentations by the RCMP, BC Ambulance personnel, and an emergency room physician. The RCMP use slides of actual local accident scenes to demonstrate the effect of motor vehicle collisions on occupants of the car. The term, "room to live", the area for passengers after a collision, is stressed as this area will protect them if it remains intact and they are wearing their seat belts. The RCMP also discusses what it is like to notify next of kin after a fatal accident and the experience of witnessing fatal collisions.

The ambulance personnel talk to the students about some of their experiences with accidents involving alcohol and the experience of trying to save accident survivors

at the scene of the collision. They review seatbelt use and alcohol's contributing effect in motor vehicle accidents.

The emergency room (ER) physician, using a slide presentation, takes the students through a "Code Blue" trauma. The ER physician calls a "Code Blue" when people surviving an accident, who have sustained multiple serious injuries, are being transported to the hospital. The steps that are involved and the actions performed to save the accident victim are described. The physician also imparts the difficulty of having to inform a parent that their child has been killed or seriously disabled due to an automobile accident.

Following these presentations, the students tour the intensive care unit (ICU), emergency department and the morgue. During the ICU tour, the students walk down the center aisle of the unit and view the monitors, respirators, crash cart, and so on. They are shown the waiting room where family and friends wait for word of their loved one. An ICU nurse describes what takes place in the ICU and answers students' questions.

The emergency department tour gives students a look at the first step in a trauma situation. The emergency room (ER) nurse guides the students through a simulated trauma where one student plays the accident victim and the other students play the roles of surgeon, general practitioner, nurses, x-ray and respiratory technicians, RCMP and whomever else would be present during a Code Blue. The "victim" is hooked up to many monitors that would be used in a trauma situation and shown some of the equipment used to save lives such as catheters, nasogastric tubes and chest tubes, central lines, and so on. The nurse also discusses where clients go from the Emergency Department, such as

surgery, ICU or flown by air ambulance out to Vancouver to the Spinal Cord Unit or Neurological ICU. Any questions the students have are answered during the tour.

A PGRH pathologist takes the students on a tour of the morgue and describes his/her role. The students are made aware that the pathologist only sees people who do not survive the trauma. The procedures involved in viewing a victim's body and what it is like for the family when a viewing takes place are discussed.

A description of an autopsy is then given and the autopsy room is shown. At this time, a brain is shown to the students and its fragile nature is reviewed with them. The pathologist talks to the students about what they have experienced on their tour, and acknowledges that this may be unsettling. They are reassured that nightmares may occur and this is totally normal. It is recommended that students talk with their family and friends about what they have experienced during the day, as this is identified as the best way to deal with what they have seen.

During lunch, the students are assigned a "disability" by the program coordinator and must eat their lunch in accordance with their "handicap". The purpose is explained as relevant to life since you do not choose your disability. These disabilities include strokes, loss of limbs, paralysis, loss of vision, and so on.

The afternoon session involves presentations by injury survivors. These volunteers share their personal stories with the students and invite questions regarding how their lives have changed due to their accidents. The survivors discuss choices they made and how it has affected them. Volunteers used on a regular basis include a brain injury survivor resulting from an industrial accident. He was not wearing a hard hat or taking other safety precautions at the time of the accident. The second survivor overdosed

on heroin the first time he tried it, and is now confined to a wheelchair and has only partial use of one arm – he is 29 years old and his accident happened when he was 20.

The students then re-enact a day in the life of a crash survivor. The survivor is usually a quadriplegic and other students act as caregivers. Activities of daily life are discussed such as bathing, elimination, feeding, and so on. A discussion of how friends would feel coming to visit is carried out and life expectancy of a quadriplegic is discussed.

Post-PARTY Session

The post-PARTY session is completed within one week of the hospital day. The video "When Choices Collide" is shown to the students, and individual scenes from the video are discussed and role-played to strengthen the PARTY program message. Alternative ways of going home such as bus, cab, or designated driver and so on are also discussed. Strategies are generated from within the group on how to deal with situations where the journey home could change your life. The post-program questionnaire is then administered.

Appendix B

Consent Form for Participants

Dear Parents:

Your teenager will be attending the PARTY program at the Prince George Regional Hospital. This established national injury prevention program is now being presented to Grade 10 students of the Prince George region, thanks to the generous grants from the Rick Hanson Neurotrauma Initiatives, the Central Interior RoadSense Team, the City of Prince George and in kind donations from various local sponsors. The PARTY program's goal is to educate teenagers about the consequences of poor decision-making and risk-taking behaviours such as; not wearing a seatbelt, not wearing a bike helmet or other protective sports equipment and any alcohol and drug related trauma.

Students attending this program will be spending the day with us at the Prince George Regional Hospital. There will be presentations from the RCMP, BC Ambulance, Emergency Dept., the Intensive Care Unit, Rehab and a visit to the Morgue. They will experience mock situations similar to those that people experience after a traumatic injury.

Because the morning is very full of activities it is very important that your teenager eat breakfast.

The students are required to bring a bag lunch. Each student will eat with a simulated disability in order to experience the difficulties involved in living with a disability. We request that the students bring the following items for lunch:

1. Jell-O, yogurt, or pudding—with a difficult lid to open.
2. Drink – canned or drinking box.
3. Fruit – bananas, kiwi, oranges, grapes or any hard to peel fruit.
4. Sandwich and a snack to complete their lunch.
5. Eating utensils – fork and spoon.
6. Anything that does not need to be heated, a microwave is not available.
7. There is not time for the students to purchase food from the cafeteria.
8. Please ensure that the lunch is secure in a bag.

In order that we may apply for and be eligible for these grants we must be able to measure the outcomes of this program. This is one of the key issues in whether we receive funding from the various agencies. Students will be asked to complete a pre-PARTY, a post-PARTY, a three month and possibly a six month post-PARTY questionnaire in order to measure risk-taking behaviours and beliefs and any changes in these that we can attribute to their participation in our program. This information will be completely anonymous. In the future we would like to be able to track the students that have attended the PARTY program. To accomplish this task we would need some information from the students that attend this program. We need to research the driving infractions and statistics involved in trauma in the region through the following agencies: ICBC, the Ministry of Health, the Prince George Regional Hospital and the RCMP. Please be assured that any tracking of students will be done by statistical numbers only

and that in no way will this allow us to access any personal and private information. Help us keep your teenagers safe.

Sincerely,

Joanne Archer RN

Program Coordinator.

Prince George PARTY Program

I give my permission for my son/daughter to attend the PARTY program on _____

_____ at the Prince George Regional Hospital. We agree to participate in the statistical research involved in measuring the trauma in this region.

Parent's/legal guardian's name:_____

Signature:_____

Student's name:_____

Signature:_____

Student's Health Care #:_____

Student's Date of Birth:____/____/____

Day/Month/Year

Appendix C

Pre, Post, and Follow-up PARTY Program Questionnaires

Pre-Party Questionnaire

ID#_____

Age:_____ Male:____ Female:____ (Initials, Birthdate-day/month/year)

Do you have a driver's license: Yes No

Please circle one answer.

1. How often do you wear a seat belt while in a vehicle?

Never Some of the time Most of the time All the time

2. How often do you wear a bicycle helmet when riding a bike?

Never Some of the time Most of the time All the time

3. How often do you wear protective equipment while playing sports?

Never Some of the time Most of the time All the time

4. How likely is it that you would survive a car accident WITHOUT injury if you are NOT wearing a seat belt?

VERY UNLIKELY VERY LIKELY

1 2 3 4 5

5. How likely is it that you would be able to continue life as usual after a serious head or spinal cord injury?

VERY UNLIKELY VERY LIKELY

1 2 3 4 5

6. How likely is it that you would arrange for a ride home BEFORE you go out?

VERY UNLIKELY VERY LIKELY

1 2 3 4 5

7. How likely is it that you would TRY to stop a friend from driving when they have been drinking or are otherwise impaired?

VERY UNLIKELY VERY LIKELY

1 2 3 4 5

8. How likely is it that you will find another way home if the person you went out with was drinking?

VERY UNLIKELY VERY LIKELY

1 2 3 4 5

9. How likely is it that you would ride in a vehicle driven by someone who you believe to be unfit to drive or is driving dangerously?

VERY UNLIKELY VERY LIKELY

1 2 3 4 5

10. How likely is it that your friend would be able to stop YOU from driving when YOU have been drinking or are otherwise impaired?

VERY UNLIKELY VERY LIKELY

1 2 3 4 5

11. I believe that I have a right to choose to take risks because I am the only person affected.

STRONGLY DISAGREE STRONGLY AGREE

1 2 3 4 5

12. I believe that having a driver's license is a RIGHT, not a privilege.

STRONGLY DISAGREE STRONGLY AGREE

1 2 3 4 5

Post-Party Questionnaire

Age:_____ Male:____Female:____ ID#_____
(Initials, Birthdate-day/month/year)

Do you have a driver's license: Yes No

Please circle one answer.

1. How often will you wear a seat belt while in a vehicle?

Never Some of the time Most of the time All the time

2. How often will you wear a bicycle helmet when riding a bike?

Never Some of the time Most of the time All the time

3. How often will you wear protective equipment while playing sports?

Never Some of the time Most of the time All the time

4. How likely is it that you would survive a car accident WITHOUT injury if you are NOT wearing a seat belt?

VERY UNLIKELY VERY LIKELY

1 2 3 4 5

5. How likely is it that you would be able to continue life as usual after a serious head or spinal cord injury?

VERY UNLIKELY VERY LIKELY

1 2 3 4 5

6. How likely is it that you would arrange for a ride home BEFORE you go out?

VERY UNLIKELY VERY LIKELY

1 2 3 4 5

7. How likely is it that you would TRY to stop a friend from driving when they have been drinking or are otherwise impaired?

VERY UNLIKELY VERY LIKELY

1 2 3 4 5

8. How likely is it that you will find another way home if the person you went out with was drinking?

VERY UNLIKELY VERY LIKELY

1 2 3 4 5

9. How likely is it that you would ride in a vehicle driven by someone who you believe to be unfit to drive or is driving dangerously?

VERY UNLIKELY VERY LIKELY

1 2 3 4 5

10. How likely is it that your friend would be able to stop YOU from driving when YOU have been drinking or are otherwise impaired?

VERY UNLIKELY VERY LIKELY

1 2 3 4 5

11. I believe that I have a right to choose to take risks because I am the only person affected.

STRONGLY DISAGREE STRONGLY AGREE

1 2 3 4 5

12. I believe that having a driver's license is a RIGHT, not a privilege.

STRONGLY DISAGREE STRONGLY AGREE

1 2 3 4 5

Three Month Post Party Questionnaire

ID#_____

Age:_____ Male:____Female:_____ (Initials, Birthdate-day/month/year)

Do you have a driver's license: Yes No

Please circle one answer.

1. In the past month, how often have you worn a seat belt while in a vehicle?

Never Some of the time Most of the time All the time N/A

2. In the past month, how often have you worn a bicycle helmet when riding a bike?

Never Some of the time Most of the time All the time N/A

3. In the past month, how often have you worn protective equipment while playing sports?

Never Some of the time Most of the time All the time N/A

4. How likely is it that you would survive a car accident WITHOUT injury if you are NOT wearing a seat belt?

VERY UNLIKELY VERY LIKELY

1 2 3 4 5

5. How likely is it that you would be able to continue life as usual after a serious head or spinal cord injury?

VERY UNLIKELY VERY LIKELY

1 2 3 4 5

6. How likely is it that you would arrange for a ride home BEFORE you go out?

VERY UNLIKELY VERY LIKELY

1 2 3 4 5

7. How likely is it that you would TRY to stop a friend from driving when they have been drinking or are otherwise impaired?

VERY UNLIKELY VERY LIKELY

1 2 3 4 5

8. How likely is it that you will find another way home if the person you went out with was drinking?

VERY UNLIKELY VERY LIKELY

1 2 3 4 5

9. How likely is it that you would ride in a vehicle driven by someone who you believe to be unfit to drive or is driving dangerously?

VERY UNLIKELY VERY LIKELY

1 2 3 4 5

10. How likely is it that your friend would be able to stop YOU from driving when YOU have been drinking or are otherwise impaired?

VERY UNLIKELY VERY LIKELY

1 2 3 4 5

11. I believe that I have a right to choose to take risks because I am the only person affected.

STRONGLY DISAGREE STRONGLY AGREE

1 2 3 4 5

12. I believe that having a driver's license is a RIGHT, not a privilege.

STRONGLY DISAGREE STRONGLY AGREE

1 2 3 4 5

Appendix D

Item-Total Correlation Tables

Table D1

Item-Total Correlation Pre-program – All Participants (266 students)

Item Content	Item-total Correlation	Alpha if Item Deleted
How often do you wear a seat belt	.5581	.7018
How often do you wear a bicycle helmet	.3656	.7198
How often do you wear protective sports equipment	.3138	.7262
How likely is it you would survive an accident if you were not wearing a seat belt	.3210	.7250
Continue life as usual after a serious head/spinal injury	.2474	.7322
Arrange a ride before you go out	.4036	.7147
Try stopping a friend from driving after they have been drinking	.5202	.7015
Find another way home if your ride has been drinking	.5209	.7001
Ride in a vehicle with someone unfit to drive	.3387	.7234
How likely a friend could stop you from driving after drinking	.3202	.7255
Have a right to take risks as you are the only person affected	.2874	.7315
Believe a driver's license is a right not a privilege	.3329	.7269

Table D2

Item Total Correlation Pre-program – participants that completed all three times of measurement (151 students)

Item Content	Item-total Correlation	Alpha if Item Deleted
How often do you wear a seat belt	.6071	.6485
How often do you wear a bicycle helmet	.3100	.6821
How often do you wear protective sports equipment	.2711	.6875
How likely is it you would survive an accident if you were not wearing a seat belt	.2621	.6880
Continue life as usual after a serious head/spinal injury	.1298	.7003
Arrange ride before you go out	.5221	.6465
Try stopping a friend from driving after they have been drinking	.5464	.6490
Find another way home if your ride has been drinking	.4926	.6549
Ride in a vehicle with someone unfit to drive	.3438	.6773
How likely a friend could stop you from driving after drinking	.1937	.6986
Have a right to take risks as you are the only person affected	.1598	.7092
Believe a driver's license is a right not a privilege	.2642	.6928

Table D3

Item Total Correlation Post-program – participants that completed all three times of measurement (160 students)

Item Content	Item-total Correlation	Alpha if Item Deleted
How often will you wear a seat belt	.4941	.7799
How often will you wear a bicycle helmet	.4584	.7798
How often will you wear protective sports equipment	.3846	.7866
How likely is it you would survive an accident if you were not wearing a seat belt	.4724	.7800
Continue life as usual after a serious head/spinal injury	.3752	.7884
Arrange ride before you go out	.5823	.7661
Try stopping a friend from driving after they have been drinking	.6424	.7647
Find another way home if your ride has been drinking	.5983	.7686
Ride in a vehicle with someone unfit to drive	.4777	.7779
How likely a friend could stop you from driving after drinking	.4558	.7801
Have a right to take risks as you are the only person affected	.2665	.8116
Believe a driver's license is a right not a privilege	.3056	.7949

Table D4

Item Total Correlation Follow-up-test – participants that completed all three times of measurement (79 students)

Item Content	Item-total Correlation	Alpha if Item Deleted
How often have you worn a seat belt in the past month	.4139	.6731
How often have you worn a bicycle helmet in the past month	.2715	.6865
How often have you worn protective sports equipment in the past month	.2072	.6945
How likely is it you would survive accident when not wearing a seat belt	.3985	.6687
Continue life as usual after serious head/spinal injury	.3886	.6686
Arrange a ride before you go out	.5302	.6414
Try stopping a friend from driving after they have been drinking	.3619	.6738
Find another way home if your ride has been drinking	.3462	.6738
Ride in a vehicle with someone unfit to drive	.4171	.6617
How likely a friend could stop you from driving after drinking	.2999	.6806
Have a right to take risks as you are the only person affected	.2253	.6922
Believe a driver's license is a right not a privilege	.2350	.6967