

THE EFFECT OF A SKIING/SNOWBOARDING SAFETY VIDEO ON THE INCREASE OF SAFETY KNOWLEDGE IN CANADIAN YOUTHS – A PILOT STUDY

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INTRODUCTION

Skiing and Snowboarding are activities which are practiced by millions of Canadians, during the winter months. The Canadian Ski Council (CSC) in 2002 stated that approximately 2.7 million Canadians are active skiers or snowboarders; this figure represents 9 % of the Canadian population (1). Furthermore, the CSC indicated, in data collected during the 2004/2005 ski season, that the most common age for skiers and snowboarders to begin taking up the sport is age 8-12 (1).

MacNab and Cadman, in 1996, reported that the highest injury rate in skiers and snowboarders was among children (age 7-12) and teens (age 13-17) (2). Nine out of ten injuries were believed to be preventable if children were adequately educated about proper safety precautions.

Education is often the first step in reducing injury. In light of this fact, the ThinkFirst Foundation of Canada, a non-profit organization based in Toronto, which directs its efforts towards “preventing brain and spinal cord

injury through education aimed at healthy behaviours in children and youth”, has been developing an educational intervention in the form of an instructional safety video. The video, entitled “A Little Respect”, produced by Cathy Jewett and directed by Jim Budge, is directed towards youths of 8-14 years old, and actively promotes safe alpine skiing and snowboarding behaviours aimed at decreasing the risk of an alpine-related injury.

The video was developed by the ThinkFirst Foundation of Canada and features several sponsors: Canada West Ski Areas Association (CWSAA), Canadian Ski Council, Association des stations de ski du Québec (ASSQ), Canadian Ski Instructors Alliance, Ministère de l'Éducation, du Loisir et du Sport, and the Ontario Ministry of Tourism and Recreation.

The topics addressed in “A Little Respect” include: the Alpine Responsibility Code, appropriate ski attire, the following of trail signs, and actions to be taken if an accident occurs, or is encountered. The ThinkFirst video will also explicitly advocate the use of helmets.

The purpose of this pilot investigation was to determine whether an instructional video on skiing and snowboarding will serve to increase sport-specific safety knowledge in Canadian youths. We wished to assess the effectiveness of the Safety Video as a learning tool, in addition to determining whether students who view "A Little Respect" do better on a safety survey, than students who do not.

MATERIAL AND METHODS

Subjects

Participants for this study were drawn from the York Region District School Board. In total, 218 students, comprising all students in 10 classes, were involved in this investigation (103 control subjects and 115 experimental subjects). The ages of the participants ranged from 8-14 years; spanning grades 3 through 8.

Permission to conduct this survey study was granted by the Principal of the participating schools, and verbal consent was given by all participating students. All participant information remained confidential, apart from age and gender, which were required for analytical purposes. All participants completed the surveys and there were no drop-outs.

Materials

This survey required lengthy access to a photocopier machine, in order to produce the required number of surveys for this investigation. Additionally, a DVD copy of "A Little Respect" was provided by the ThinkFirst Foundation of Canada. A DVD player was provided on site, by the participating schools.

Protocol

The testing period required a maximum of forty (40) minutes to complete. Two classes from every grade/age group were surveyed; one class was randomized to the control cohort, while the other was placed in the experimental cohort. The control group received a thirty-question multiple choice/true or false survey to assess the baseline level of knowledge a student possessed regarding alpine skiing and snowboarding safety. The survey did not take longer than twenty five minutes to complete. The intervention group was first shown a fifteen-minute video on ski/snowboard safety and, immediately afterwards, these students were required to complete the same survey as the control group who did not view the video. All questionnaires were answered individually by each subject and supervised by both the research assistant and the teacher.

Students were instructed to complete the survey questions to the best of their ability. If a student had difficulty in comprehending the nature of a question (i.e. limited English competence), either the research assistant, or the classroom teacher would provide clarification. If an answer to a question was not known, the students were instructed to make an educated guess.

Students who had completed their survey were to raise their hand, to have their survey collected. After all surveys had been completed and collected, the testing session was over; the research assistant would then proceed to the next class to continue the survey.

The survey was anonymous, with only information regarding age, gender and previous skiing/snowboarding experience being required for later analysis.

To allow for the most accurate comparison between control and intervention subjects, this investigation sought to test two classes from each grade level. This was done so that we could obtain data for both a control and intervention group, which would allow for accurate comparisons between children at a particular age/grade level. Randomization was done by the research assistant, who arbitrarily assigned one class from each grade to be the control and the other to be the intervention group. The minor difference in control vs intervention numbers relates to the slight variation in class sizes, but this was not statistically significant.

RESULTS

The outcome parameters for this study were measured as the number of correct answers (out of 30) each subject achieved when completing the survey. Scores between the control and

intervention groups were compared to see if any differences were present. If higher scores were reported by the intervention group, then a positive learning effect had occurred as a result of watching the ThinkFirst video. Thus, subjects who viewed "A Little Respect" learned additional knowledge about safe skiing and snowboarding that was not known prior to watching the video.

The mean scores recorded for the control cohort were 24, with standard deviations of ± 3.5 . The intervention cohort displayed scores with a mean of 25 and a standard deviation of ± 4.8 . With respect to other statistical identifiers, it was self-reported by subjects that 175 subjects had gone alpine skiing or snowboarding before; 30 subjects had no experience with alpine skiing/snowboarding (13 subjects failed to answer this question). Comparing survey performance based on gender (males $n = 108$, females $n = 105$), without distinguishing between control and intervention cohorts, the male mean score was calculated to be 24.91

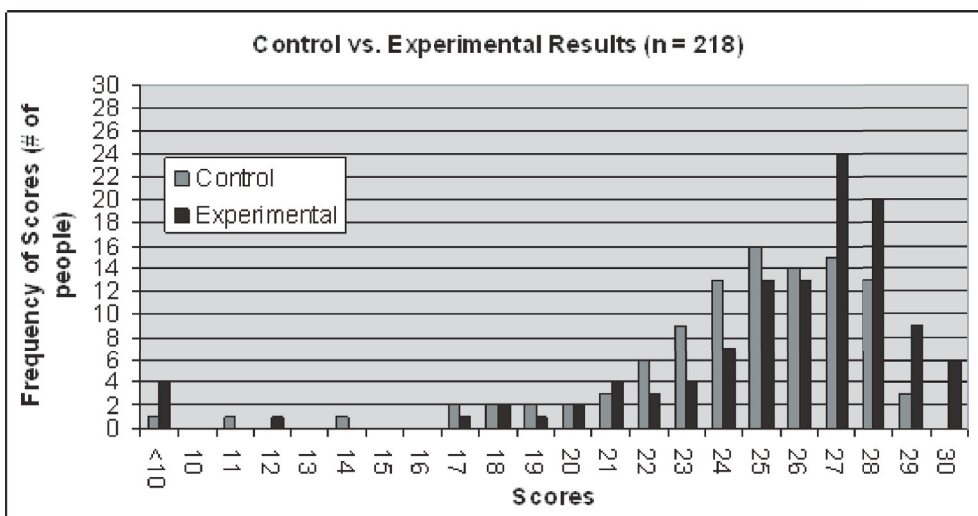


Figure 1. Number of correct answers to the survey related to skiing and snowboarding safety knowledge in the control and experimental group.

(standard deviation \pm 3.1), whereas female mean scores were 25.16 (standard deviation \pm 4.1). Thus, it is clear there is no statistical difference in scores between genders.

DISCUSSION

When comparing the frequencies of scores between the control and experimental cohorts, it is apparent that the experimental cohort scored higher in skiing and snowboarding safety knowledge. Figure 1, demonstrates that the experimental cohort has a greater frequency of higher scores when compared to control subjects. Furthermore, the experimental subjects' scores are less broadly distributed across the lower spectrum of score values. This may suggest that, as a result of watching the safety video, students in the experimental cohort displayed higher levels of safety knowledge than the control subjects. Additionally, the higher scores displayed by the experimental subjects suggest a beneficial learning effect elicited by the video. Thus, it may be that the information conveyed by the video is assimilated consciously by the students who watch it; as opposed to merely dismissing the video's message as trivial.

Conclusions

It appears that "A Little respect" displays a positive learning trend in students.

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The next stages of this investigation would be to follow up on the pilot investigation and conduct a full-scale randomized trial. The full-scale trial will attempt to determine whether participants selected from local Ontario and Quebec ski resorts, and who view "A Little Respect", exhibit a reduction in alpine-related injury over a 10-week observation period. If "A little Respect" is shown to reduce the rate of alpine-related injury in youths, then it may be a cost-effective safety intervention that could be adopted by school boards and ski resorts, in order to increase public safety and decrease the health care burden associated with a popular Canadian winter sport.

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