

Title of Intervention: Integration of Injury Control Information into a High School Physics Course

Intervention Strategies: Group Education

Purpose of the Intervention: To improve knowledge, risk taking attitudes and self-reported driving behaviors

Population: High school students

Setting: Physics classroom in California; school-based

Partners: Classroom teachers, California Highway Patrol

Intervention Description:

- Group Education: A high school physics course was taught to students and consisted of five periods of instruction with audiovisual aids, physical demonstrations and lecture. The curriculum consisted of the following components: basic forms of energy; injury prevention; evaluation of safety features in modern automobiles with a focus on how energy is released during a vehicular collision; types of automobile crashes with an emphasis on safety belts to prevent injuries; discussion of occupant kinematics and the concept of gravity forces in relation to air bags and the proper use of seat belts and a vehicle rollover demonstration that graphically illustrated the centrifugal forces acting on vehicle occupants during a rollover. Students designed a crash “vehicle” to protect an “occupant” (a raw chicken egg) and were encouraged to use the concepts of crush space, velocity, seat belts and air bags in their designs to prevent injury. Student dropped their vehicles from a six story height to analyze the crash safety of the occupant.

Theory: Not mentioned

Resources Required:

- Staff/Volunteers: Not mentioned
- Training: Not mentioned
- Technology: Not mentioned
- Space: Not mentioned
- Budget: Not mentioned
- Intervention: Instructor, curriculum, audiovisual aids, physical demonstration materials, rollover demonstration, supplies to create “vehicles”
- Evaluation: Survey

Evaluation:

- Design: Prospective controlled study
- Methods and Measures: Pre- and post-evaluation combined questions from the Young Driver Attitude Scale with a questionnaire to test student safety knowledge and attitudes as well as self-reported behaviors

Outcomes:

- Short Term Impact: The intervention group post-test knowledge score was statistically significantly as compared to the control (physics of crashes, demographics of persons involved in accidents, and characteristics of safe automobiles). Attitudes changed in the intended direction in the intervention group over the control for speeding and seat belt use but not drinking and driving
- Long Term Impact: Seat belt use and speeding frequency was lower in the intervention group; however, drinking and driving did not change significantly.

Maintenance: Not mentioned

Lessons Learned: Interventions such as this can have important ripple effects. In comments made by students at the end of the intervention, several reported that they had become family nags and had gotten their parents to wear seat belts when they were in the car with the student.

Citation(s):

Martinez, R., D. W. Levine, et al. (1996). "Effect of integration of injury control information into a high school physics course." *Ann Emerg Med* 27(2): 216-24.