Firearm Safety Courses for Elementary School-age Children

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Firearm Safety Education programs for children have recently become a subject of controversy.¹ One active proponent, the National Rifle Association (NRA) maintains that these education courses reduce the risk of unintentional firearm injury in children.² Critics charge that these safety education programs are a thinly veiled promotion of firearm usage to young people and a way to improve the image of the NRA. According to the American Academy of Pediatrics committee on Injury and Poison Prevention, "Because gun education programs are widely available and heavily promoted, the Academy cautions educators to choose educational programs and approaches carefully, avoiding those that might inadvertently encourage or promote the access of firearms to children. Gun safety education programs directed at children should be evaluated prior to widespread implementation."³

A variety of such programs exist, with important differences amongst them.⁴ For example, the Eddie Eagle Program, developed by the NRA, teaches children a safety procedure to follow if they come across an unattended firearm in the home.⁵ They are taught not to touch the gun and to run and tell a trusted adult. A program called STAR (Straight Talk About Risks) developed by the U.S. group, Center to Prevent Handgun Violence, has a similar safety procedure but also includes the teaching of skills such as conflict resolution, withstanding peer pressure, and distinguishing between real life and media violence.⁶ The Canadian Northwest Territories Firearm Awareness Program teaches children safe

firearm handling and storage techniques.⁷ A Firearm Injury Prevention program developed by the University of New Mexico, which is a multi-faceted program, includes children's school-based firearm injury prevention curriculum, but also emphasizes the responsibility of the adult gun owner.⁸⁻¹⁰ This program includes public service announcements on TV, radio and in print to increase awareness of gun safety in the home, letters to health care professionals encouraging them to counsel parents about gun safety in the home, and safety messages placed in gun stores and on new guns.

Firearm statistics

On average, one of every four Canadian households owns a firearm.¹¹ This ranges from 15% in Ontario to 67% in the Yukon and Northwest Territories. In 1994, 25 children under the age of 15 died from firearm injuries in Canada; 6 of these deaths were from unintentional injury, 13 were suicides and 6 were homicides.¹² Thus, 76% of Canadian childhood firearm deaths (under age 15) that year were *intentional* – either suicides or homicide.

In 1994, 95 Canadian teens between the ages of 15 and 19 died from gunshot wounds. The majority of these deaths (81) were suicides, with homicides (11), unintentional deaths (1), and undetermined cause (2) accounting for the rest. Suicide is the second leading cause of death in this age group, and firearms are a leading method in completed suicides. Firearm injury accounted for 11% of all deaths in males 15 to 19 years old in 1994.

Another source of risk for children and adolescents are *nonpowder* firearms (such as BB guns and "air guns"). Marshall et al. found air gun injuries to be the leading

cause of enucleation secondary to trauma in children and young adults in Ottawa from 1974-93.¹³ In a review of 11 cases of death from nonpowder firearms, Lawrence found that present-day nonpowder firearms could obtain projectile velocities high enough to cause skin penetration and significant internal damage.¹⁴

Evaluation of firearm safety programs

As of May 1997, spokespersons for the firearm injury prevention courses listed in the introduction to this commentary confirmed that none have carried out controlled studies to assess for behaviour changes or reduced injury rates in program participants. A literature search found only one controlled study specifically looking at the effectiveness of a firearm safety educational intervention. Researchers at the University of North Carolina studied 4-6 year old children's behaviour in a videotaped play setting in which both toy and real (unloaded) handguns were present, both before and after a firearm safety educational intervention.¹⁵ The children exposed to the educational intervention were compared to a control group who received no educational intervention. The authors concluded "that the intervention was ineffective in modifying the behaviour of the children."

Attributes of effective injury prevention programs

One key issue at the heart of the controversy is whether safety interventions consisting solely of educational messages aimed at children are likely to change their behaviour and reduce injury rates. Towner, in a recent review of educational injury prevention programs, noted that this type of program has had mixed success.¹⁶ The

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factors that he identified as characterizing the successful programs were that they were single measure interventions (i.e., they had a single goal such as increased helmet or seatbelt use), were in a closed system such as a school, involved a variety of approaches (such as mass media, individual education and home inspections) and increased use of a safety device by improving its availability and/or reducing its cost. A key factor in the successful programs was the provision of a simple safety device such as a smoke alarm, bike helmet or window guard to families in the setting of an effective multifaceted educational program. In a subsequent review he noted that not all educational campaigns were found to be beneficial – some had unexpected adverse effects: “There is no evidence that poison labelling deters young children and a study evaluating Mr. Yuk stickers found that children were attracted to labelled containers rather than repelled by them.”¹⁷ Robertson, in his textbook *Injuries*, reviewed the history of driver's education courses for adolescents in high school, and concluded, “The assumptions that driver education can change information, skills, attitudes and values sufficiently to reduce crashes and that teaching the course will not result in increase of a hazardous activity are not valid.”¹⁸ He also notes, “Education of children requires even more care than education of adolescents and adults. Children less often interpret language, gestures, and directions as they are intended by the educator.”

Content of firearm safety courses

Certain characteristics of several of the programs mentioned above seem likely to instil inappropriate attitudes in children or their parents. Some firearm safety programs attempt to teach children to distinguish between real and toy guns. This is developmentally unrealistic and may instil a false sense of confidence in the parents and children that such a thing can reliably be accomplished. The attitude that safe gun handling can be taught to children is also evident in some of the courses. Teaching of gun handling techniques is likely to increase children's confidence around firearms; for example, they may feel more capable of distinguishing a

loaded from an unloaded gun. Similarly, parents whose children have been taught safe handling of a firearm may feel that a lower level of supervision is acceptable due to their child's training. Several of the courses recommend gun-handling courses for teenagers – despite the fact that the effectiveness of this type of training in teenagers is unknown. A similar intervention – driver's education for teenagers – has been shown to increase injury rates.

CONCLUSION

Due to the paucity of data on whether firearm safety programs are effective, or possibly even harmful, the offering of this type of program should be discouraged until a small trial program has been thoroughly studied to see if the program results in behaviour change and reduced injury rates. This trial program should clearly emphasize that the parents have the primary responsibility to keep firearms away from children. Information should be disseminated to adults about the risks of home ownership of firearms, and the need for proper safe storage methods. The children's education should be seen as a secondary emphasis. A program that included environmental interventions – such as a provision of trigger locks, or removal of firearms from the home – would likely be more effective than an education-only program. The program should include interventions aimed at preventing both intentional and unintentional injuries, from both powder and nonpowder firearms.

Even in areas where gun ownership is ubiquitous, the offering of school-based firearm handling courses to elementary age children should be vigorously discouraged. This type of firearm handling course seems likely to encourage early gun use in children, and the perception by the parents that their child is capable of safely handling a gun. Firearm handling courses for teenagers should be evaluated to see if they result in safer behaviour and reduced injuries in teens.

Finally, measures designed to *reduce the availability* of firearms are more likely to result in reduced injury rates. Such measures would include strict enforcement of gun control and safe storage laws. Until

firearm safety education for children has been proven to be effective, it should not be implemented on a widespread basis.

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