



An analysis of inner-city students' attitudes towards violence before and after participation in the "Cradle to Grave" programme

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ABSTRACT

Background: Cradle to Grave (C2G), a hospital-based violence prevention programme, brings inner-city youth into an urban Level I trauma centre to follow the path of an adolescent gunshot victim from trauma bay to morgue. We hypothesised that C2G alters student attitudes towards gun violence.

Methods: Eighty-eight adolescents were prospectively enrolled. With parental and student consent, students completed the Attitudes Towards Guns and Violence Questionnaire (AGVQ), a previously validated and reliable social science assessment tool. Two weeks later, the students participated in C2G. The survey was re-administered four weeks after C2G participation. AGVQ results are reported both as a total score and as a breakdown of the four component subscales. Higher AGVQ scores indicate proclivity towards violence. ANOVA compared scores with respect to demographics and type of school (public vs. charter).

Results: C2G altered student's attitudes towards guns and violence. Of 43 public school students, total scores decreased following C2G ($p = 0.02$). The greatest attitudinal change occurred in subscale 1, "Aggressive Response to Shame" ($p < 0.01$). C2G failed to produce significant changes AGVQ scores in the 45 students attending a city charter school. The two groups were found to have baseline differences, with public school students showing higher baseline tendencies towards violence.

Conclusions: Our hospital-based programme is capable of positively impacting adolescents' attitudes towards guns and violence. This effect is most pronounced in subjects who already display increased tendencies towards violence. These results suggest that hospitals offer a unique opportunity to address the public health crisis posed by inner-city firearm violence.

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Introduction

Violence perpetrated by and against young people has been alternately referred to as "an epidemic,"⁷ "a public health crisis,"³ and "a social contagion."¹⁴ Nearly three quarters of a million young people (ages 10–24) are treated in America's emergency rooms each year for violence-related injuries.⁴ It is estimated that anywhere between 70% and 95% of America's inner-city youth have witnessed some form of violent assault.^{2,19} Considering the direct medical costs that derive from these violent acts – as well as the transmittable tendency of violence to beget more violence^{16,18} – it is easy to understand how youth violence has moved beyond

the strict province of social scientists to gain increasing attention within the sphere of medicine.

It is possible that no American city better epitomises this public health crisis than Philadelphia.²⁰ While nationally homicide represents the second leading cause of death among individuals ages 15–19,⁵ it represents the leading cause of death for young Philadelphians within this same demographic.²⁵ In 2006, the number of homicides (179) committed against youth ages 7–24 increased 20% over the previous year.²⁵ Shootings caused nearly all of these deaths.²⁵ Not only are juveniles more often the victims of gunshot injuries, they are more often the perpetrators, as well. As recently as 2006, roughly two-thirds of shooting offenders in Philadelphia were between the ages of 14 and 24.²⁴ As young gunshot wound victims have become increasingly common in emergency rooms, Trauma Centres have developed hospital-based violence prevention programmes in an effort to address this trend.

Despite limited scientific evaluation of their programmes' efficacy, hospital-based "impact tours" have emerged in recent

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years offering a promising response to community violence. An internal evaluation of one such programme in St. Paul, Minnesota suggested that following a visit to a hospital – in which hospital staff and actors dramatised the resuscitation of a gunshot patient – youth demonstrated a reduction in their Comfort with Aggression as measured by the Attitudes Towards Guns and Violence Questionnaire (AGVQ® 2000).^{23,27,28} Another hospital-based programme in Baltimore, Maryland has reported that at-risk youth scored lower on a survey measuring aggression after viewing graphic images of gunshot injuries.⁶

Importantly, an impressive body of research suggests that interventions directed at unhealthy life choices – behaviours such as poor nutrition, cigarette smoking and lack of exercise – can be effective even when offered in limited measure.²¹ Erlich et al.¹³ demonstrated that a brief intervention regarding high-risk behaviours given to families of paediatric patients persisted three months after the intervention.

Temple University Hospital's hospital-based violence prevention programme, Cradle to Grave (C2G), recreates the experience of one unfortunate adolescent gunshot wound victim who died from his injuries. We hypothesised that C2G would improve student attitudes towards gun violence and that this effect would remain when measured four weeks after the intervention. Our primary objective was to compare students' attitudes towards violence before and after participating in the C2G programme. This study was reviewed and received approval from Temple University's Institutional Review Board.

Methods

In 2006, Temple University Hospital – a busy Level I trauma centre in one of Philadelphia's most disadvantaged and violent communities – developed a hospital-based prevention programme intended to improve juvenile attitudes about the use of violence. That year the number of paediatric gunshot wound (GSW) patients age 18 and under treated at TUH had doubled over the previous two years. Developed by the hospital's Trauma Programme, Cradle to Grave has used the hospital setting to educate more than 2000 at-risk youth about the physical and emotional realities of gun violence.

In an attempt to bring young people as close as possible to the devastations of gun violence, the two-hour programme guides participants through the final moments of a young patient who died at TUH in 2004 after sustaining multiple GSWs. Cradle to Grave begins in the trauma bay where the 16-year-old boy was brought by police. He was intubated, resuscitated, and had an emergency room thoracotomy performed in an attempt to save his life, all of which ultimately failed. Each of these procedures is "demonstrated" on a volunteer who is asked to represent the patient.

From the trauma bay, the students proceed to a classroom setting where both an educational and introspective component occurs. The issue of inner-city violence, specifically gun violence, is framed. Pictures illustrating the destructive results of firearm injury are displayed. The students are also asked "who would you die for?" and "how much is your life worth?" After much discussion and contemplation, the programme concludes in the hospital's morgue, our patient's last stop. Participants are asked to list on toe tags the names of people who would miss them if they were to become the victims of violence, as well.

Eighth and ninth grade students from low income and working class backgrounds provided a convenience sample for our pilot study. They were predominantly African American and attended either a public or charter school with established relationships with the Cradle to Grave programme. The charter school represented in this study is located in a more affluent section of

the city and draws from a more geographically diverse area. Students who attend the charter school are required to complete a more selective admission process than that required to be completed by students of the city's public schools. By comparison, the primary admissions criterion met by the public school students represented in this study is only that they live in the neighbourhood where their school is situated.

Forty-three urban public school students were prospectively enrolled to participate in the C2G programme during 2006–2007. After obtaining parental and student consent, students completed the Attitudes Towards Guns and Violence Questionnaire. AGVQ was developed by the Western Psychological Services as a tool that measures proclivity towards violence (Fig. 1). This questionnaire has been validated and used in a variety of evaluations of violence prevention programmes.²⁷ It is a 26 question, self-report questionnaire that is scored on a 3-point Likert-scale with anchors of 0 (disagree), 1 (not sure), and 2 (agree). Anti-violence statements are reverse scored so that a proclivity towards violence would always be indicated by a high score. The questionnaire reports total score as well as separate scores across four distinct subscales. Subscales are categorised as "Aggressive Response to Shame", "Comfort with Aggression", "Excitement", and "Power/Safety" (Table 1). The "Aggressive Response to Shame" subscale assesses sensitivity to disrespect by others and the belief that violence would heal that disrespect. The "Comfort with Aggression" subscale evaluates acceptance of violence in everyday life. The "Excitement" subscale measures the feeling that guns are fun and exciting, and the "Power/Safety" subscale assesses the feeling of personal safety and power that may be associated with guns. Scores on this instrument have been shown to correlate with teacher reports of aggressive behaviour.²⁸ Respondents are asked if they agree, disagree, or have no opinion regarding statements such as "You've got to fight to show people you're not a wimp," "I wish there weren't any guns in my neighbourhood," "I bet it would be real cool to walk down the street with a gun in my pocket," and "I'd like to have a gun so that people would look up to me."²⁶

Two weeks after the questionnaires were completed, the students participated in C2G. Four students who completed the pre-intervention questionnaire were absent from school on the day of the C2G programme and were subsequently eliminated from this study. Post-intervention questionnaires were filled out approximately four weeks after C2G participation (Fig. 2). In 2007 a second group of students were prospectively enrolled in our C2G study. However, these students were predominantly from a charter school. As before, the students filled out the AGVQ, attended C2G two weeks later, and approximately four weeks later completed the post-intervention AGVQ.

Data analysed included demographics and AGVQ scores. Demographic information included age, sex, grade, school, race, and zip code of residence. All surveys were scored to calculate both a total score as well as the four subscale raw scores. Higher scores on the survey indicate a proclivity towards violence based on the respondents' attitudes. Analysis of Variance was used to detect differences in AGVQ scores across all groups, with *p*-values of <0.05 considered statistically significant. Data was analysed using the SAS v.9.1 software system (SAS Institute, Cary, NC).

Results

Eighty-eight students attended Cradle to Grave and completed both surveys. Of these participants, 48% were male and 52% were female; 61% were African American, 19% were Caucasian, 8% were Hispanic, 3% were Asian, and 9% were self-designated as "Other." The majority of the students were 8th and 9th graders (95%), with a mean age of 14.11 years old (Table 2).

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