A Prospective Randomized Study of the Efficacy of "Turning Point", An Inpatient Violence Intervention Program

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By

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ABSTRACT

Background: From 2002-2011, there were over 17,000 shootings in Philadelphia. "Turning Point", Temple University Hospital's violence intervention program, takes advantage of the teachable moment that occurs after violent injury. In addition to receiving social work services, Turning Point patients watch their trauma bay resuscitation video and a movie about violence, meet with a gunshot wound survivor and an outpatient case manager, and undergo psychiatric assessment. The purpose of this study was to determine the efficacy of Turning Point in changing attitudes toward guns and violence among victims of penetrating trauma. *Methods*: This prospective randomized study was conducted from January-June 2012. Patients who sustained a gunshot or stab wound were randomized to Standard of Care, which involved social work services only, or Turning Point. The Attitudes Toward Guns and Violence Questionnaire was administered to assess attitude change. Analysis was performed with the Wilcoxon signed-rank test. A $p < 0.05$ was significant. *Results*: A total of 40 out of 159 patients with gunshot or stab wounds were enrolled and completed the study in its entirety. The most common reason for exclusion was anticipated length of stay being less than 48 hours. The two groups were similar with respect to most demographics. Unlike the Standard of Care group, the Turning Point group demonstrated a 44% reduction in its Aggressive Response to Shame, a 33% reduction in its Comfort with Aggression, and a 20% reduction in its overall proclivity toward violence. *Conclusion*: Turning Point is effective in changing attitudes toward guns and violence among victims of penetrating trauma. Continued enrollment and longer follow-up are necessary to determine if this program can have a long-lasting impact and truly be a turning point in patients' lives.

DEDICATION

For Dr. Amy Goldberg and Scott Charles, who taught me so much about the population we serve every day.

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INTRODUCTION

Violent injury is a major public health problem in the United States. According to the Center for Disease Control and Prevention's National Center for Injury Prevention and Control, homicide was the fifth leading cause of death for people between 15 and 50 years of age in 2010. Even more striking, homicide was the *leading* cause of death during this same year for black males between the ages of 15 and 30 years, comprising 45.5% of all deaths. Over 90% of the homicides of young black males were due to gun violence ("Leading Causes of Death Report," 2010). In light of these concerning statistics and the devastating impact of violent injury on the personal, social, and economic well-being of victims, families, and communities, the United States Department of Health and Human Service made Injury and Violence Prevention an objective of Healthy People 2020 ("Healthy People 2020: Injury and Violence Prevention," 2010).

Philadelphia is one of the most dangerous large cities in the United States, ranking fourth in its crime rate according to the Federal Bureau of Investigation (*City Crime Rankings 2013,* 2013). In Philadelphia, violent injury due to guns is a particularly serious problem. From 2002 to 2011, there were nearly 17,000 shootings in our city. A high percentage of these shootings occurred within the Temple University Hospital (TUH) North Philadelphia catchment area that includes the 22nd and 25th Police Districts. During this time, the 22nd District ranked 1st out of 39 districts for gun violence, with 29 victims per 1,000 residents. The 25th District ranked 4th, with 21 victims per 1,000 residents. In

comparison, the 9th District, which includes the wealthier Rittenhouse area, had only 3 victims per 1,000 residents (Tudor, 2012).

In 2011 alone, TUH treated 2,496 patients with major traumatic injuries. A total of 683 (27%) of these patients had penetrating traumatic injuries, namely gunshot and stab wounds. Given that 82.5% of these penetrating trauma patients survived to hospital discharge and likely returned to the same or similar violent neighborhoods in which they sustained their injuries, there was a clear need to expand treatment beyond physical wounds and focus on attitudes toward guns and violence as well as hazardous life circumstances in order to prevent retaliation and reinjury (Temple University Hospital Department of Surgery, 2012).

Thus, "Turning Point" was established. Turning Point is TUH's violence intervention program for penetrating trauma patients. It is comprised of five inpatient interventions as well as outpatient services. The inpatient interventions supplement traditional social work services which have been the historical mainstay of support for Temple University Hospital's penetrating trauma patients. The traditional social work services are delivered by a social worker, case manager, and trauma outreach coordinator and include a careful review of the incident, suggestions for nonviolent conflict resolution strategies, an assessment of risk factors for violence in the patient's life, and referral to outpatient services.

The five inpatient interventions of the Turning Point program for the penetrating trauma patients are as follows: 1) watching their own trauma bay resuscitation video, 2) watching a reality-based movie about gun violence, 3) visiting with a survivor of gun

violence, 4) being introduced to the case manager who will direct the outpatient services, and 5) being evaluated by psychiatry upon request. The design of the Turning Point program was based on the results of a survey distributed to penetrating trauma patients asking them to identify the interventions and services which would be most useful to prevent retaliation and reinjury.

Turning Point has four goals. The first goal is to make the violent injury a "turning point" in the patient's life such that s/he subsequently moves in a different direction with changes in attitudes and life circumstances that led to the injury. "The trauma experience, especially the near-death experience, can serve as a powerful precipitant to change," according to Aboutanos *et al*. in their paper on Virginia Commonwealth University's violence intervention program in Richmond, Virginia (Aboutanos et al., 2011).

The second goal of Turning Point is to take advantage of the "teachable moment" that occurs soon after violent injury. Multiple studies have shown that violence interventions initiated during the inpatient stay for a violent injury reduce rates of reinjury and criminal behavior, suggesting the existence of a teachable moment (Cooper, Eslinger, & Stolley, 2006; Shibru et al., 2007; Zun, Downey, & Rosen, 2006).

The third goal of Turning Point is to change attitudes toward guns and violence. Although the strength of the causative association between attitude and behavior change varies in the literature, attitude change has repeatedly been shown to be a fundamental first step toward behavior change (Fazio & Williams, 1986; Leippe & Elkin, 1987). Turning Point is unique in its emphasis on attitudes toward guns and violence. Most

violence intervention programs focus on behavior, in particular the development of nonviolent conflict management skills. However, unless attitudes toward guns and violence are unfavorable, patients will not be motivated to acquire these new skills (Shapiro, Dorman, Burkey, Welker, & Clough, 1997).

The fourth and most important goal of Turning Point is to reduce the chance of retaliation and reinjury. Studies report a five-year reinjury rate between 10% and 50% for victims of violent injury. An additional 20% of these victims die as result of the violent reinjury (Goins, Thompson, & Simpkins, 1992; "Repeat injuries in an inner city population--Philadelphia, 1987-1988," 1990; Shibru, et al., 2007). Data collected by the Office of Juvenile Justice and Delinquency Prevention reveals that being a victim of violent injury during adolescence significantly increases the likelihood of retaliation and reinjury (Menard, 2002b). "Because they lack the resources and support to change attitudes and behaviors, a significant number of youth hospitalized for an intentional injury continue on a trajectory that places them at risk for reinjury or perpetrating further acts of violence," according to Aboutanos, *et al* (Aboutanos, et al., 2011). In a case-control study of victims of violent injury who sustained reinjury, Cooper *et al*. found the risk factors for reinjury to be unemployment, current drug use, past or present drug dealing, being a black male, annual income less than $10,000, less than a high-school education, and a history of incarceration (Cooper, Eslinger, Nash, al-Zawahri, & Stolley, 2000). By changing attitudes about guns and violence as well as addressing hazardous life circumstances, Turning Point aims to reduce the chance of retaliation and reinjury.

The purpose of this prospective, randomized study is to assess the efficacy of the inpatient component of Turning Point in changing attitudes toward guns and violence

among victims of penetrating trauma. We hypothesize that participants randomized to the Turning Point program will demonstrate greater changes in attitudes toward guns and violence in comparison to participants randomized to traditional social work services. If found to be effective, Turning Point could serve as a model for other violence intervention programs in development across the country.

CHAPTER 2

BACKGROUND

According to Rochelle A. Dicker, M.D., a trauma surgeon in San Francisco, California, with a special interest in violence prevention, "Interpersonal violent injury is pervasive in the United States, and trauma centers stand on the front lines of the epidemic" (Dicker et al., 2009). In order to control this epidemic, trauma centers must focus on attitudes toward guns and violence as well as hazardous life circumstances in addition to physical wounds. In fact, one study found that 93% of 753 consecutive deaths at a Level One trauma center were not preventable with advanced medical and surgical therapy, suggesting injury prevention is key to minimizing mortality (Stewart et al., 2003). Nevertheless, while the field of Trauma Surgery has rigorously investigated and perfected diagnostic and therapeutic strategies for physical wounds for many years, far less attention has been paid to injury prevention, especially as it relates to guns and violence.

Fortunately, this pattern has begun to change. Over the past decade, a number of urban hospitals have developed violence intervention programs for their patients. Most of these programs are for young adolescents and include both inpatient and outpatient components. "Caught in the Crossfire" is a hospital-based violence intervention program in Oakland, California for violently injured patients between the ages of 12 and 20 years. It employs "intervention specialists" who are prior victims or perpetrators of violence and reside in the same communities as the patients. These intervention specialists assist the

patients with a variety of issues, including securing state restitution funding, transportation to clinic appointments and court hearings, job placement, and obtaining valid identification. After 18 months of follow-up, patients enrolled in Caught in the Crossfire had a 33% lower risk of criminal justice involvement compared to historical matched controls. The program was shown to be most effective with younger patients. It was also shown to reduce costs by at least $750,000 when compared to those associated with juvenile detention centers. However, the program failed to have a significant effect on reinjury or death (Shibru, et al., 2007).

"Bridging the Gap" is another violence intervention program for violently injured patients. It is based at Virginia Commonwealth University in Richmond, Virginia and has both inpatient and outpatient components. The inpatient component involves motivational interviewing, psychoeducation, and cognitive-behavioral therapy. The outpatient component lasts six months and includes assistance with employment, education, housing, and mental health services. In a prospective, randomized fashion, Aboutanos *et al*. sought to evaluate the efficacy of the outpatient component. Violently injured patients between the ages of 10 and 24 years were randomized to the inpatient component alone or the inpatient plus outpatient components of the program. The patients randomized to the latter group demonstrated more appropriate utilization of the hospital and greater utilization of community services after six months. No significance difference between the two groups was found with respect to drug or alcohol abuse, employment, school enrollment, reinjury, or mortality (Aboutanos, et al., 2011).

"SafERteens" is a violence intervention program for young adults presenting to the emergency room of Hurley Medical Center in Flint, Michigan, who report both

alcohol use and violence within the past year. It is comprised of motivational interviewing and skills training provided by a computer or research therapist. The intervention lasts less than one hour. Compared to controls, adolescents in the program displayed reductions in positive attitudes regarding alcohol use and violence and also improvements in self-efficacy related to these issues. The program was well-received, with 97% of participants indicating they found at least one component of the program useful. After three months of follow-up, program participants demonstrated 81% retention of the attitude changes and improvements in self-efficacy.

Like Caught in the Crossfire, Bridging the Gap, and SafERteens, Turning Point seeks to help its violently injured patients. By changing attitudes toward guns and violence as well as addressing hazardous life circumstances, Turning Point ultimately aims to reduce the chance of retaliation and reinjury. Reducing retaliation and reinjury will, in turn, have a positive public health impact on the personal, social, and economic well-being of the patients as well as their families and communities.

CHAPTER 3

METHODS

After successful completion of the Collaborative Institutional Training Initiative Human Research Curriculum (Appendix A) and obtaining approval from the Temple University Institutional Review Board (Appendix B), this prospective randomized study was conducted at TUH from January through June 2012. TUH is an urban trauma center with a "Level One" designation by the American College of Surgeons, indicating it is able to provide immediate and comprehensive care for the most seriously injured patients.

All English-speaking penetrating trauma patients at least 18 years old who sustained a gunshot or stab wound and were admitted to the hospital were eligible for the study. Patients were approached for the study once their Glascow Coma Scale score was 15, indicating they were alert, oriented, and able to follow commands. The Glascow Coma Scale describes the degree of consciousness of a person and is based on eye, verbal, and motor responses to stimulation. It ranges from 3 through 15, with 3 corresponding to death and 15 corresponding to full consciousness.

Patients were excluded from the study if they were under police custody because they would not be able to fully participate in the Turning Point program if randomized to that group due to visitor restrictions and prison confinement after discharge. Patients with a severe psychiatric disorder or devastating neurologic injury were also excluded due to their inability to participate in the programs in a meaningful way. Patients with a length

of stay anticipated to be less than 48 hours were excluded due to this time period being insufficient to complete the inpatient programs, which generally required three to five days. Finally, patients with plans to move away from Philadelphia after discharge were excluded because they could not likely participate in the outpatient component of the Turning Point program if randomized to that group.

After obtaining consent (Appendix C) and authorization to collect and disclose personal health information (Appendix D), participants were randomized into the control Standard of Care group or the experimental Turning Point group. The Standard of Care group received traditional social work services, which included support by a case manager, social worker, and trauma outreach coordinator. In contrast, The Turning Point group received the novel Turning Point interventions in addition to traditional social work services.

As mentioned in the Introduction, the five inpatient interventions of the Turning Point program are as follows: 1) watching the own trauma bay resuscitation video, 2) watching a reality-based movie about gun violence, 3) visiting with a survivor of gun violence, 4) being introduced to the case manager who will direct the outpatient services, and 5) being evaluated by psychiatry upon request. These interventions did not take place in a pre-specified order.

The trauma bay resuscitation video is the recording of when the patient was first treated in the emergency room by the trauma surgeons. It includes all diagnostic and therapeutic maneuvers, including ultrasound and x-ray imaging, endotracheal intubation, tube thoracostomy, and placement of peripheral or central venous catheters. The aims of

the trauma bay resuscitation video are to remind the patient of the gravity of the incident and how close to death he may have come. It also aims to enhance his appreciation to be alive and make him want to be more careful with his life.

The reality-based movie is a compilation of short clips about gun violence. It includes words of wisdom from spirited community activists and well-known rappers. It also includes the personal stories of gunshot victims, one of whom became a paraplegic as a result of the incident. The movie presents hard-hitting statistics about gun violence and ends with a poignant poem that deconstructs the glory of thug life.

The visit with a survivor of gun violence is a one-on-one private conversation with one of two former TUH gunshot wound patients. JR is a young man who sustained a gunshot wound to the chest while living a life of crime on the street. He subsequently turned his life around and now has a steady job and is a strong father figure to his step-children. CP is a mother of two small children who became wheelchair-bound with bilateral lower extremity amputations after being shot by her boyfriend. Despite these devastating injuries, she is hopeful and optimistic about life. Both JR and CP are from the same community as the patients in Turning Point, enabling them to truly understand the background of the patients and establish a trusting relationship. “Caught in the Crossfire”, another violence intervention program previously mentioned in the Background section of this manuscript, also uses peers to carry out portions of the program. The leaders of Caught in the Crossfire describe the use of these peers as “crucial”, a “driving force”, and a “distinguishing characteristic that cannot be overstated” (Shibru, et al., 2007). The goals of the survivor during the conversation are to provide “tough love”, encouragement, empathy, and advice. The survivor also seeks to instill hope, inspire, and motivate.

During the inpatient component of the program, the Turning Point patients are introduced to the case manager who will direct the outpatient services, which may last up to six months. These services include, but are not limited to, assistance with job placement, going back to school, and attending clinic appointments. The purpose of the case manager is to ultimately become a source of support, advocacy, and mentorship for the patients.

Finally, the patients are offered an evaluation by psychiatry. The objective of this evaluation is to diagnose and initiate treatment of any underlying psychiatric illness. If indicated, a referral to outpatient therapy is made.

The following baseline demographic information was collected for all participants: age, gender, race, history of alcohol and/or drug abuse, mechanism of injury (i.e. gunshot or stab wound), Injury Severity Score[1], type of surgery, if any (e.g. thoracotomy, laparotomy, fasciotomy, etc.), whether permanent disability resulted from the penetrating trauma and, if so, the nature of it (i.e. paraplegia/quadriplegia, limb amputation, foot drop, or open abdomen), whether an ostomy[2] was created during a surgery, history of psychiatric disease, history of witnessing violence enacted upon themselves, family, or friends, history of hospitalization for violent injury, history of incarceration, active probation/parole issues or open criminal charges, employment status

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[1] The Injury Severity Score assesses the severity of the traumatic injury based on the number of injured body regions. It correlates with morbidity, mortality, and the duration of hospitalization. It ranges from 1 through 75, with major trauma defined as any score over 15.

[2] An ostomy is a surgically created opening that connects an internal organ to the skin to allow its drainage to the external environment.

prior to admission, school status prior to admission, highest level of education completed, and health insurance status prior to admission.

Before the Standard of Care or Turning Point programs were initiated, the Attitudes toward Guns and Violence Questionnaire (AGVQ; Appendix E) was administered to determine baseline scores. Published by Western Psychological Services, the AGVQ was the primary measurement instrument of this study. It assesses attitudes toward interpersonal conflict, physical aggression, and guns via a 26 item self-report questionnaire which take 5 to 10 minutes to complete. With standards based on a nationally representative age-stratified sample of nearly 2,000 people in school and community settings, AGVQ scores correlate with interpersonal problems, aggressive behavior, and gun ownership. It is considered valid and reliable for ages 6 through 29 years. Scoring is based on a three point Likert scale, which asks participants to choose which of three graded responses best describe their level of agreement with a statement having to do with guns and/or violence. The AGVQ is composed of four different scales which are scored individually: 1) Aggressive Response to Shame (range 0.0 through 16.0; describes an individual's sensitivity to disrespect from others), 2) Comfort with Aggression (range 0.0 through 12.0; describes an individual's acceptance of violence as part of everyday life), 3) Excitement (range 0.0 through 10.0; describes an individual's excitement related to guns), and 4) Power/Safety (range 0.0 through 8.0; describes an individual's sense of power and safety related to guns). In addition, the AGVQ provides a Total score (range 0.0 through 48.0) that describes an individual's overall proclivity toward violence. In order to minimize response bias, we followed the recommendation of the author of the AGVQ, Jeremy P. Shapiro, Ph.D. That is, we explained to the

participants the questionnaire was being used to understand their general opinions about guns and violence as opposed to their personal involvement with these matters. (Shapiro, 2000; Shapiro, et al., 1997).

After the baseline demographic information and AGVQ scores were collected, the Standard of Care and Turning Point programs were carried out. Once the programs were finished, all participants completed a second AGVQ in order to assess attitude change from baseline in response to the programs. The Turning Point group also provided responses to the following seven qualitative questions regarding the interventions after completing the program: 1) Did the trauma bay resuscitation video make you feel more grateful to be alive?, 2) Did the trauma bay resuscitation video make you want to be more careful with your life?, 3) Did the reality-based movie have messages that applied to your life?, 4) Did the visit with the survivor make you feel hopeful about life after your injury?, 5) Did the visit with the survivor inspire or motivate you in any way?, 6) Did you find your visit with psychiatry helpful?, and 7) Did your visit with psychiatry make you more likely to seek counseling in the future?. Furthermore, for the Turning Point group only, any psychiatric diagnosis made during the psychiatric evaluation was recorded. Lastly, we measured the rate of attendance at outpatient follow-up appointments in the trauma clinic for all participants during the study period. Refer to Figure 1 for a flow diagram of subject enrollment and study activities.

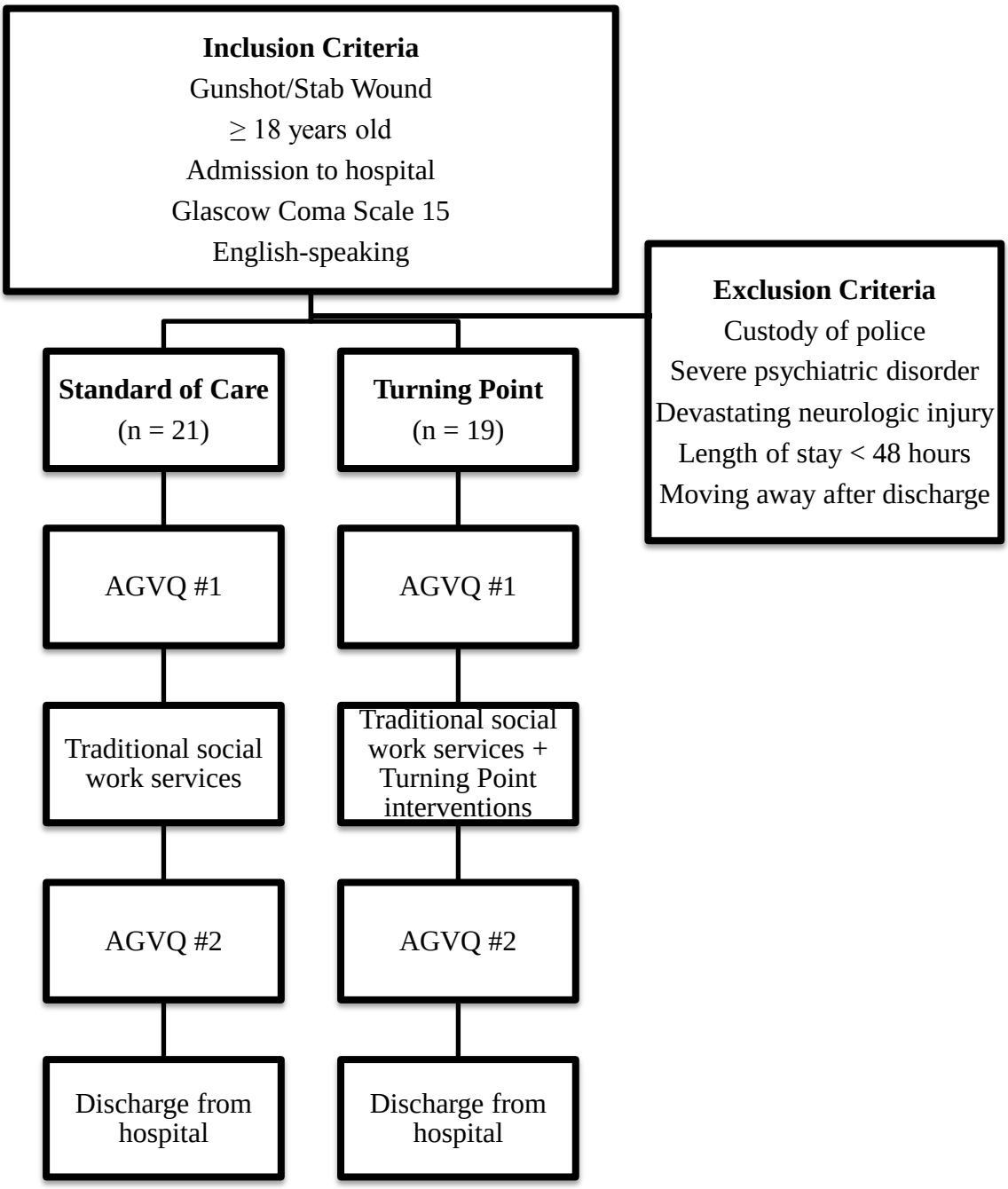

Figure 1. Flow diagram of subject enrollment and study activities

Cohort characteristics between the groups were compared using the Mann-Whitney test for nonparametric numerical data and the Chi-Square test for categorical

data. The nonparametric changes in AGVQ scores from baseline response to the programs were evaluated with the Wilcoxon signed-rank test. A two-tailed p value < 0.05 was considered significant.

We determined that a minimum sample size of 74 participants evenly distributed between the Standard of Care and Turning Point groups was necessary to have 80% power to detect a difference in AGVQ score change of 10.0 between the two groups. This AGVQ score change was approximately 20% of the maximum AGVQ score of 48 and represents our estimate of a clinically meaningful effect size. The sample size determination was also based on a standard deviation of 15.0, which was 50% of our hypothesized baseline median Total score of 30.0. This hypothesized baseline median Total score was based on results from the study by Goldberg *et al*, which used the AGVQ to assess attitude change among middle school students after the TUH violence prevention program called "Cradle to Grave". This program invited inner-city youth into the hospital to follow the unfortunate path of an adolescent gunshot patient from the trauma bay to the morgue (Goldberg et al., 2010). We expected the AGVQ scores for penetrating trauma patients to be higher than middle-school students and consequently doubled the middle-school student baseline median Total score of approximately 15 (Goldberg, et al., 2010). All analyses were performed using the SPSS Statistics v19 software system (IBM, Armonk NY).

CHAPTER 4

RESULTS

Enrollment

Out of 159 patients at least 18 years old who were admitted to the hospital with gunshot or stab wounds during the six month study period, a total of 40 (25.2%) were enrolled while 119 (74.8%) were excluded. From the 40 enrolled participants, 21 were randomized into the Standard of Care group while 19 were randomized into the Turning Point group. In regard to the excluded patients, the most common reason for exclusion was anticipated length of stay being less than 48 hours, comprising 68.9% of the exclusions. Only 9.2% of the exclusions were due to patients refusing participation. A total of 6.7% of the exclusions were due to the patients being under police custody. Table 1 presents the relative percentages of all reasons for exclusion during the study.

Table 1. Reasons for Exclusion

Reason for Exclusion	**Number of Participants (% of 119 excluded)**
Anticipated length of stay < 48 hours	82 (68.9%)
Refused participation	11 (9.2%)
Police custody	8 (6.7%)
Devastating neurologic injury	4 (4.2%)
Non-English speaking	3 (2.5%)
Severe psychiatric disorder	2 (1.7%)
Left hospital against medical advice	2 (1.7%)
Moving away from Philadelphia after discharge	2 (1.7%)
Unknown	2 (1.7%)
Lost to follow-up	1 (0.8%)
Death	1 (0.8%)

Cohort Characteristics

The Standard of Care and Turning Point groups were demographically similar except with respect to age and history of alcohol abuse. In comparison to the Standard of Care group, the Turning Point group was younger (22 versus 31 years old, respectively; $p = 0.004$) and more likely to have a history of alcohol abuse (26.3% versus 0.0%, respectively; $p = 0.04$).

Otherwise, there were no other significant differences between the two groups. The study cohort was primarily composed of black males with gunshot wounds. In fact, over 90% of the injuries sustained were due to gun violence. A total of 35% of the participants reported a history of drug abuse while 12.5% reported a history of psychiatric disease at some point in their lives. For the entire cohort, the median Injury Severity Score was 9.0. The most common operation for both groups during the hospitalization was a laparotomy. A total of 12.5% of the participants incurred permanent disability as a result of their injuries although only 5% required an ostomy. A total of 70% of the participants had been a witness to violence and 35% had already been hospitalized for violent injury at least once in the past. The percentage of participants with a history of incarceration was 50% while 30% had active probation/parole issues or open criminal charges. Less than half of the participants were employed prior to admission. Although only 12.5% of the participants were in school prior to admission, most had graduated high school. Lastly, 37.5% of the participants did not have health insurance prior to admission. Table 2 details the characteristics of the entire study cohort as well as the Standard of Care and Turning Point groups.

Table 2. Cohort Characteristics

Demographic	**Entire Cohort # (%)**	**Standard of Care # (%)**	**Turning Point # (%)**	***p* value***
Age (median years, range)	28 (18-56)	31 (19-56)	22 (18-56)	**0.004**
Gender				0.1
Male	36 (90.0%)	17 (81.0%)	19 (100.0%)	
Female	4 (10.0%)	4 (19.0%)	0 (0.0%)	
Race				0.6
White	2 (5.0%)	1 (4.8%)	1 (5.3%)	
Black	32 (80.0%)	18 (85.7%)	14 (73.7%)	
Latino	6 (15.0%)	2 (9.5%)	4 (21.1%)	
History of alcohol abuse				**0.04**
No	30 (75.0%)	18 (85.7%)	12 (63.2%)	
Yes	5 (12.5%)	0 (0.0%)	5 (26.3%)	
Unknown	5 (12.5%)	3 (14.3%)	2 (10.5%)	
History of drug abuse				0.9
No	21 (52.5%)	11 (52.4%)	10 (52.6%)	
Yes	14 (35.0%)	7 (33.3%)	7 (36.8%)	
Unknown	5 (12.5%)	3 (14.3%)	2 (10.5%)	
Mechanism of injury				1.0
Gunshot wound	37 (92.5%)	19 (90.5%)	18 (94.7%)	
Stab wound	3 (7.5%)	2 (9.5%)	1 (5.3%)	
Injury Severity Score (median, range)	9.0 (0-75)	9.6 (0-33)	9.2 (0-75)	0.7
Most common operations (% of all operations in cohort)	Laparotomy (34.0%) Fasciotomy (14.0%)	Laparotomy (43.5%) Vascular (17.4%)	Laparotomy (25.9%) Fasciotomy (18.5%)	
Permanent disability				0.7
No	35 (87.5%)	19 (90.5%)	16 (84.2%)	
Yes	5 (12.5%)	2 (9.5%)	3 (15.8%)	
Ostomy				1.0
No	38 (95.0%)	20 (95.2%)	18 (94.7%)	
Yes	2 (5.0%)	1 (4.8%)	1 (5.3%)	
History of psychiatric disease				1.0
No	35 (87.5%)	18 (85.7%)	17 (89.5%)	
Yes	5 (12.5%)	3 (14.3%)	2 (10.5%)	
History of violence				0.4
No	11 (27.5%)	7 (33.3%)	4 (21.1%)	
Yes	28 (70.0%)	14 (66.7%)	14 (73.7%)	
Unknown	1 (2.5%)	0 (0.0%)	1 (5.3%)	

Table 2. (continued)

History of hospitalization for violent injury				0.5
No	25 (62.5%)	13 (61.9%)	12 (63.2%)	
Yes	14 (35.0%)	8 (38.1%)	6 (31.6%)	
Unknown	1 (2.5%)	0 (0.0%)	1 (5.3%)	
History of incarceration				0.2
No	19 (47.5%)	8 (38.1%)	11 (57.9%)	
Yes	20 (50.0%)	13 (61.9%)	7 (36.8%)	
Unknown	1 (2.5%)	0 (0.0%)	1 (5.3%)	
Current probation, parole, or open criminal charges				0.1
No	27 (67.5%)	17 (81.0%)	10 (52.6%)	
Yes	12 (30.0%)	4 (19.0%)	8 (42.1%)	
Unknown	1 (2.5%)	0 (0.0%)	1 (5.3%)	
Employed prior to arrival				0.5
No	23 (57.5%)	11 (52.4%)	12 (63.2%)	
Yes	17 (42.5%)	10 (47.6%)	7 (36.8%)	
In school prior to arrival				0.2
No	34 (85.0%)	20 (95.2%)	14 (73.7%)	
Yes	5 (12.5%)	1 (4.8%)	4 (21.1%)	
Unknown	1 (2.5%)	0 (0.0%)	1 (5.3%)	
Highest grade level completed (median, range)	12.0 (10-13)	11.8 (10-13)	11.6 (10-13)	0.5
Health insurance prior to arrival				0.5
No	15 (37.5%)	9 (42.9%)	6 (31.6%)	
Yes	25 (62.5%)	12 (57.1%)	13 (68.4%)	

*The *p* value refers to the statistical significance of the difference between the Standard of Care and Turning Point groups for each cohort characteristic.

AGVQ

The median number of days between the administration of the first and second AGVQ was similar between the Standard of Care and Turning Point groups (5.2 versus 3.2 days, respectively; $p = 0.3$). Table 3 presents the baseline AGVQ scores for the study cohort. After adjusting for the variable score ranges of the five AGVQ scales so that they

were interpreted on a scale of 100, the highest and lowest baseline scores for the study cohort were observed on the Power/Safety and Excitement scales, respectively.

Table 3. Baseline AGVQ Scores for Study Cohort

Scale (score range)	**Baseline Score – Raw (median, range)**	**Baseline Score – Adjusted***
Aggressive Response to Shame (0 – 16)	2.0 (0.0-13.0)	12.5
Comfort with Aggression (0 – 12)	3.0 (0.0-12.0)	25.0
Excitement (0 – 10)	0.0 (0.0-4.0)	0.0
Power/Safety (0 – 8)	6.0 (0.0-8.0)	75.0
Total (0 – 48)	12.5 (2.0-27.0)	26.0

*The adjusted score is based on a scale of 100.

In regard to the different scales of the AGVQ, the Turning Group demonstrated a significant reduction in its Aggressive Response to Shame and Comfort with Aggression scores. Specifically, the Turning Point group had a 44% reduction in the median Aggressive Response to Shame score, which decreased from 3.6 to 2.0 (p = 0.01; score range 0 through 16). Furthermore, this group had a 33% reduction in its median Comfort with Aggression score, which decreased from 4.2 to 2.8 (p = 0.03; score range 0 through 12). In contrast, the Standard of Care group failed to demonstrate significant changes in any of the AGVQ scales. Neither the Standard of Care nor Turning Point group demonstrated significant changes on the Excitement or Power/Safety scales. Finally, only the Turning Point group demonstrated a significant reduction in its AGVQ Total score.

Specifically, the Turning Point group had a 20% reduction in the median AGVQ Total score from 15.0 to 12.1 (p = 0.02; score range 0 through 48). Figures 2 through 6 depict changes in the AGVQ scores for both groups from baseline in response to the programs.

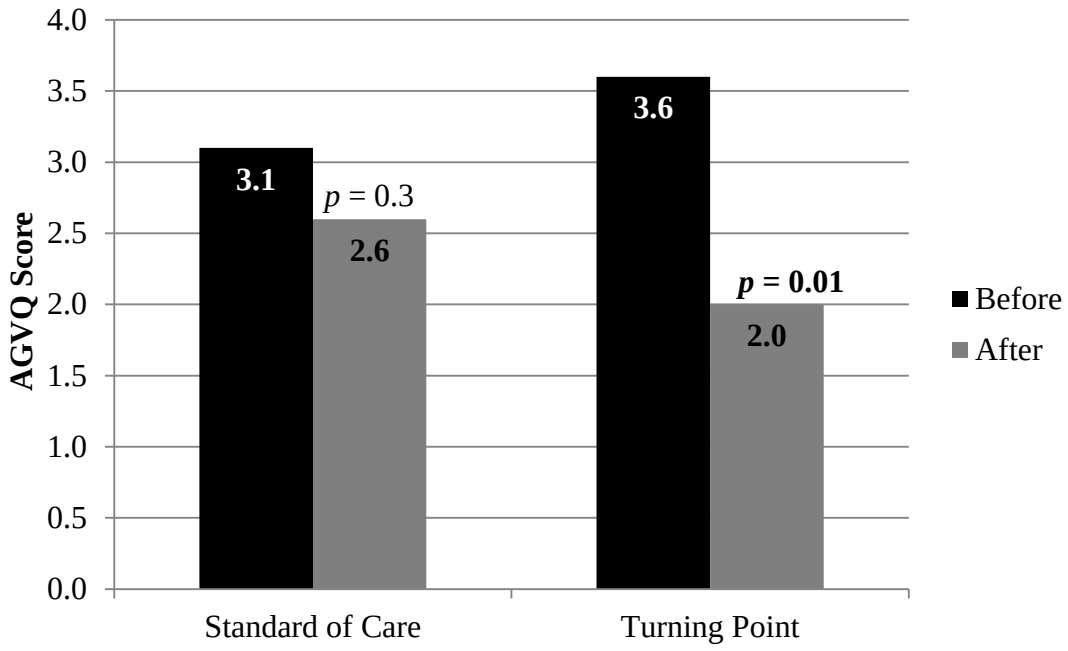

Figure 2. Change in AGVQ Aggressive Response to Shame score

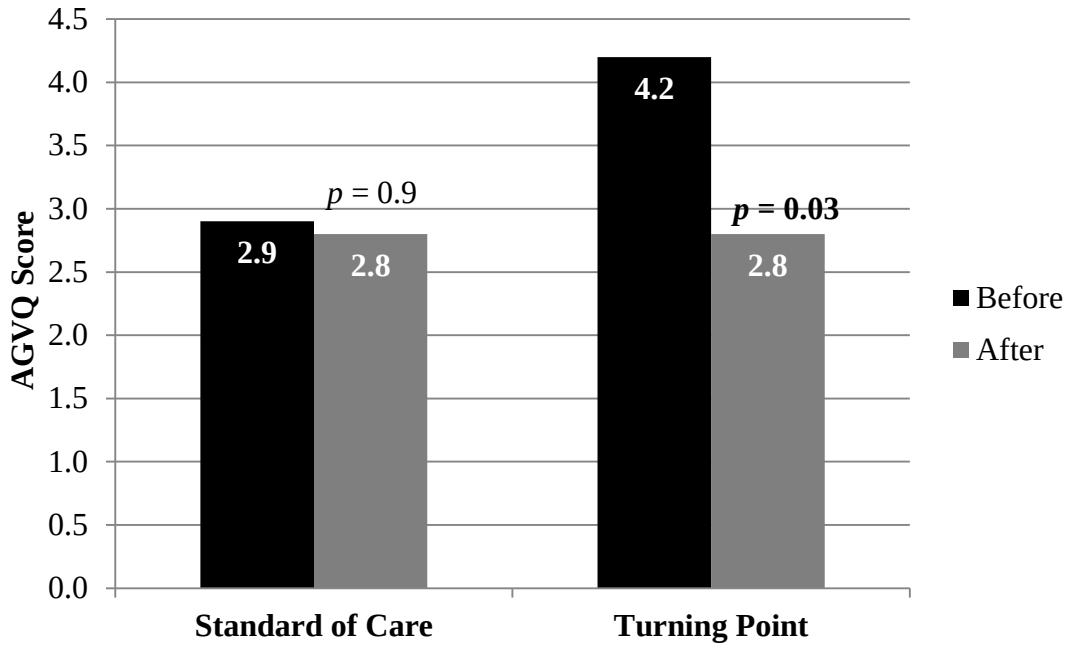

Figure 3. Change in AGVQ Comfort with Aggression score

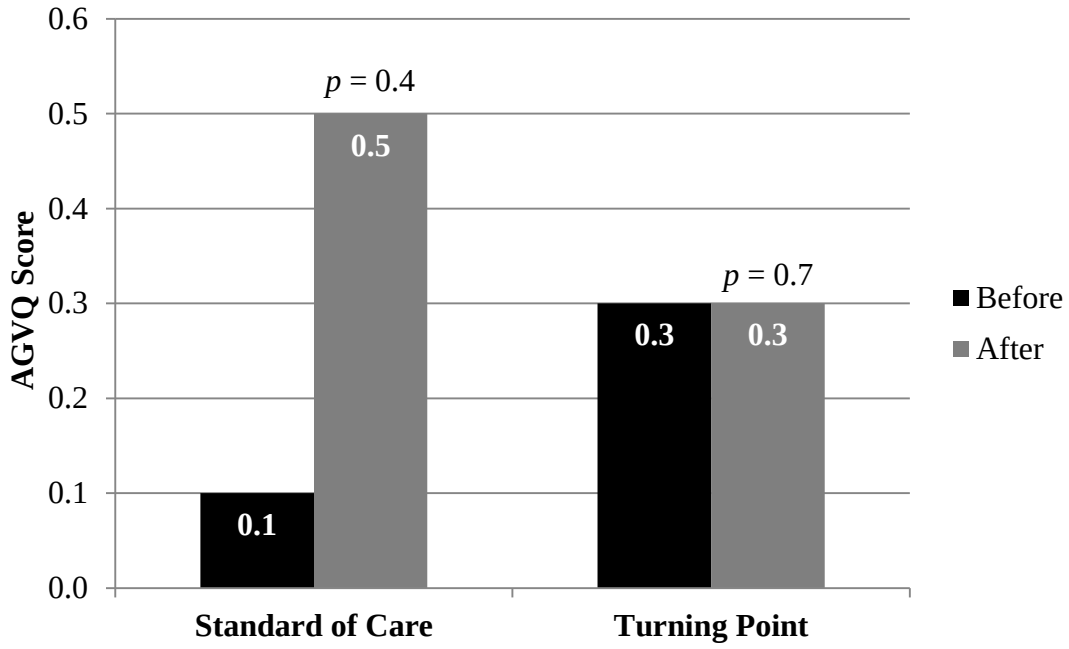

Figure 4. Change in AGVQ Excitement score

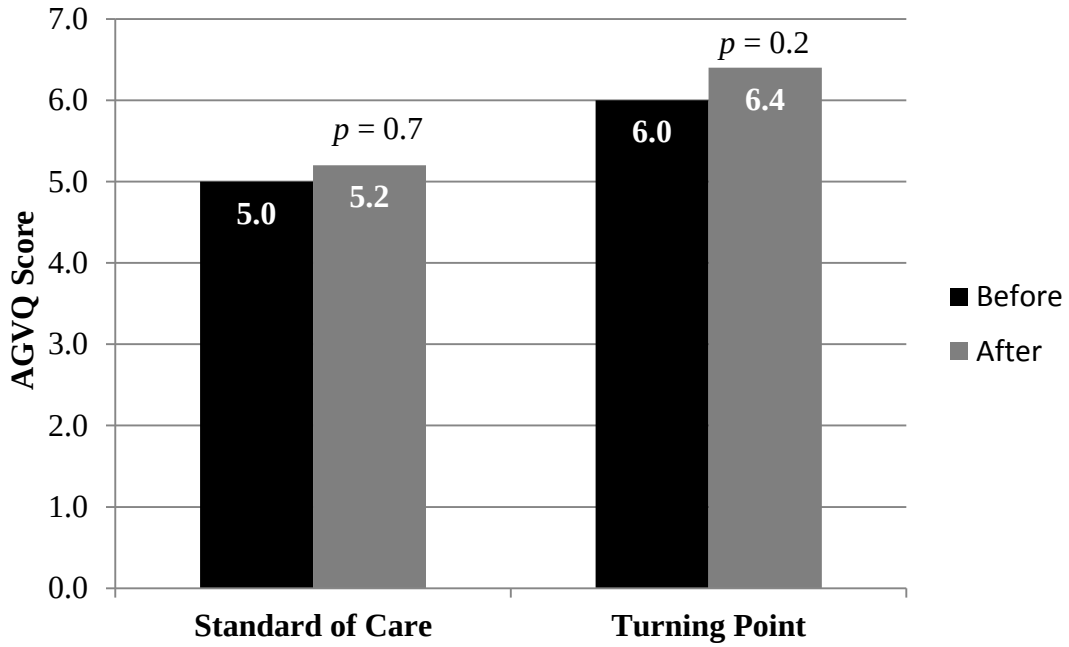

Figure 5. Change in AGVQ Power/Safety score

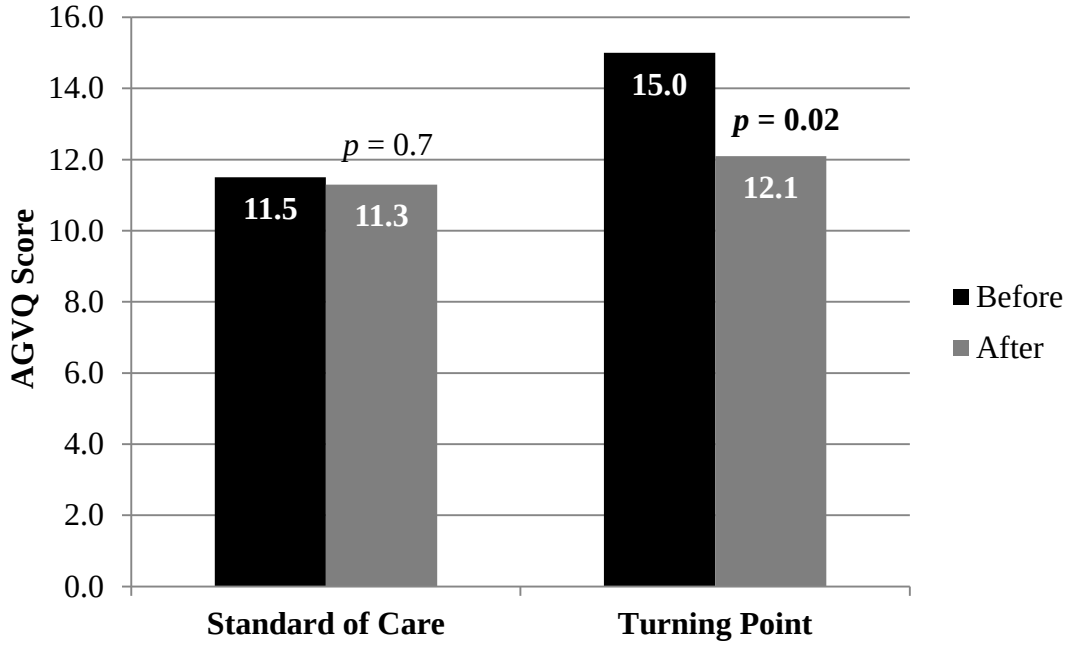

Figure 6. Change in AGVQ Total score

Responses to Turning Point Interventions

In regard to the trauma bay resuscitation video, 79% of the Turning Point group felt watching the video made them more grateful to be alive and 68% felt it made them want to be more careful with their lives. Only 1 out of 19 participants in the Turning Point group was unable to watch the trauma bay resuscitation video due to distress while recalling the incident. This subject had become a paraplegic as a result of his gunshot wound. In regard to the reality-based movie, 74% felt it had messages that applied to their lives. A total of 84% felt more hopeful about life after injury as a result of the visit with the survivor. Moreover, 74% stated they were inspired or motivated by the survivor. A total of 9 out of 19 participants in the Turning Point group requested a psychiatry evaluation. Out of this 9, a total of 67% felt the evaluation was evaluation and 78% indicated they were more likely to seek counseling in the future as a result of the evaluation.

Psychiatric Diagnoses

Out of the 9 Turning Point participants who underwent a psychiatry evaluation, 44% were diagnosed with an adjustment disorder, which is defined as a state in which one "experiences symptoms such as anxiety and depression in excess of what would be expected based on a traumatic event". A total of 33% were diagnosed with an acute stress disorder, which is characterized by "anxiety, avoidance, re-experiencing, and dissociative symptoms in response to a traumatic event" and is known to be a precurser to post-traumatic stress disorder. Finally, 22% were diagnosed with marijuana dependence,

which is defined as a “pathologic pattern of substance abuse that results in impairment or distress” (Scully, 2001).

Clinic Attendance

There was a low rate of missed follow-up appointments in the trauma clinic for both groups. Only 3.4% and 3.2% of the Standard of Care and Turning Point groups missed a clinic appointment during the six month study period. These percentages were not significantly different ($p = 1.0$)

CHAPTER 5

CONCLUSION

In this randomized controlled trial, we found that Turning Point was effective in changing attitudes toward guns and violence among victims of penetrating trauma. Patients enrolled in Turning Point demonstrated a 44% reduction in their Aggressive Response to Shame, 33% reduction in their Comfort with Aggression, and 20% reduction in their overall proclivity toward violence. More patients, longer follow-up, and an evaluation of the outpatient component are warranted to determine if this program can truly be a turning point in our patients' lives and reduce the chance of retaliation and reinjury.

CHAPTER 6

DISCUSSION

Turning Point was effective in changing attitudes toward guns and violence among victims of penetrating trauma. Our program is now one of a growing number of hospital-based violence intervention programs dedicated to the major public health of guns and violence.

An analysis of the baseline AGVQ scores yields important information about the penetrating trauma population at TUH. The highest baseline AGVQ score was observed on the Power/Safety scale. According to Scott Charles, MAPP, the trauma outreach coordinator at TUH, patients likely have a newfound respect for the lethality of guns given their recent violent injury (personal communication, January 29, 2013). The high score on this scale also underscores the strong belief that guns are a necessary means of preserving personal safety. In contradistinction, the lowest baseline AGVQ score was observed on the Excitement scale, indicating that these patients may view guns as necessary and dangerous rather than exciting as a result of the violent communities in which they live and their recent injury,. However, in a study by Ash *et al* from 1996, 40% of juvenile offenders report feeling more energized, excited, or powerful when carrying a gun (Ash, Kellermann, Fuqua-Whitley, & Johnson, 1996). The baseline AGVQ Total score of 12.5 was lower than the expected value of 30.0 used during the sample size determination. Rather than being double the baseline Total score of the middle school students in the Cradle to Grave program, the Total score among our penetrating trauma

patients was quite comparable. This implies that overall attitudes toward guns and violence are ingrained at a young age and not significantly affected by age and/or a history violent injury (Goldberg, et al., 2010).

The Turning Point group demonstrated a 20% reduction in the AGVQ Total score, representing a significant lessening of the group's overall proclivity toward violence. In conjunction with the significant reductions observed with respect to Aggressive Response to Shame and Comfort with Aggression, this finding leads us to the conclusion that the short-term inpatient interventions of Turning Point are effective in changing attitudes toward guns and violence among victims of penetrating trauma.

The Turning Point program was able to affect reductions in the Aggressive Response to Shame and Comfort with Aggression scales. As a result of the Turning Point interventions, which serve as reminders about the seriousness of violent injury yet also provide hope and new opportunities, the Turning Point patients may realize the costs associated with aggression far exceed the benefits (S. Charles, personal communication, January 29, 2013). It is encouraging that the Turning Point program was able to catalyze change in this area since attitudes about aggression have been shown in the literature to be consistent predictors of future violent behavior (Cotten et al., 1994).

The Turning Point group had a 44% reduction in its Aggressive Response to Shame score, signifying a diminution in the participants' sensitivity to disrespect and also reducing their notions that violence is an effective method for restoring damaged self-esteem. Aggressive Response to Shame may be the most pliable attitude toward guns and violence. In this study of the Turning Point program and the Goldberg *et al* study of the

Cradle to Grave program, the greatest change was observed on the Aggressive Response to Shame scale (Goldberg, et al., 2010). The pliability of Aggressive Response to Shame is important because, as eloquently stated by Harvard Medical School's James Gilligan, M.D., "Shame is the pathogen that causes violence just as specifically as the tubercle bacillus causes tuberculosis" (Gilligan, 2001). Indeed, the notion that violence is an effective method for restoring one's damaged self-esteem is common among men incarcerated for violent crime (Katz, 1988). One qualitative interview study of urban black males between the ages of 18 and 25 years with penetrating traumatic injuries investigated the relationship between this population's aversion to being considered a "sucker" and gun violence. One participant stated, "If you're living in the city, you wouldn't want to be called a sucker 'cause everybody will take advantage of you. That's why half the people get shot, stabbed these days, trying to defend themselves and not be a sucker" (Rich & Stone, 1996). Believed to arise from a lack of traditional means of preserving self-esteem, a high level of Aggressive Response to Shame is extremely common among inner-city populations (Anderson, 1999; Wilkinson & Fagan, 2001). In a study of juvenile delinquents, almost 40% supported the claim that "it is okay to shoot someone who has disrespected you" (Decker, 1995).

The individuals randomized to the Turning Point group also had a 33% reduction in the Comfort with Aggression score, indicating a decrease in the acceptance of violence as a normal part of life. Comfort with Aggression is undoubtedly an adaptive attitude among residents of North Philadelphia who have grown up with shootings being common occurrences.

We did not find that the Turning Point group had a significant change in the Excitement score after receiving the interventions. Although the baseline score was relatively low, the group's attitude regarding the stimulating nature of guns was unaffected by the Turning Point interventions. This may be a consequence of the powerful force of gangster hip-hop culture, which embodies guns and violence and has been in effect and largely unopposed within this population for a long time (Wente, 2005).

The Turning Point group also did not demonstrate a significant change in the Power/Safety score. The high baseline score and the lack of change underscores this population's strong belief that guns are a necessary means of preserving personal safety. In the Ash *et al* study of juvenile offenders mentioned above, 40% claimed self-protection as a frequent motive for carrying a gun (Ash, et al., 1996).

The individuals randomized to the Standard of Care group failed to demonstrate significant changes on any of the AGVQ scales, suggesting that our traditional social work services require modification if the intent is to change attitudes toward guns and violence. Given these results, one obvious and now data-driven modification could be the permanent addition of the Turning Point interventions.

Although the 74.8% of patients excluded from this study is seemingly high, it is similar to values reported by studies of other violence intervention programs. For example, in the Aboutanos *et al* randomized study of Bridging the Gap, 80.0% of eligible patients were excluded, with the most common reason being they were "missed" (Aboutanos, et al., 2011). This reason is similar to the most common reason for exclusion

in this study, namely anticipated length of stay being less than 48 hours. Given that these patients usually had more minor injuries, it is important to consider that the results of the Turning Point program may not be entirely generalizable to this group.

Violently injured patients are generally open to participating in violence intervention programs as well as concurrent studies of the programs. Less than 10% the exclusions in this study were due to patients refusing participation. In the SafERteens and Bridging the Gap programs which included concurrent studies, 13% and 2% refused participation, respectively (Aboutanos, et al., 2011; Cunningham et al., 2009). Thus, the refusal rate in this study is similar to rates in other studies of hospital-based violence intervention programs.

Given the limited sample size, the randomization strategy in this study was successful for all cohort characteristics except age and history of alcohol abuse. The Turning Point group's younger age and stronger history of alcohol abuse compared to the Standard of Care group were likely due to the small sample size. This is an interim data analysis of slightly more than half the final sample size of the study. The larger study aims to enroll 80 patients and includes three month follow-up evaluations.

It is important to entertain the possibility that age was a confounding factor affecting the results of this study, with the younger Turning Point participants having more compliant attitudes toward guns and violence that were more responsive to intervention in comparison to their older Standard of Care counterparts. In support of this possibility is the finding by the Caught in the Crossfire investigators that the program was more effective in younger patients (Shibru, et al., 2007). If it is the case that younger

patients have more compliant attitudes toward guns and violence and are thus more responsive to intervention, it can be viewed in a positive light. Given that half of all shooting victims in Philadelphia are between 14 and 24 years old, we can be confident that the efforts of our violence intervention program will primarily be focused on a group that is amenable to change (Tudor, 2012).

An analysis of the demographic characteristics of the entire study cohort yields important information about the population we serve. The 90.0% male and 80.0% black composition of the entire study cohort is in line with citywide statistics, in which shooting victims from 2002 to 2011 were primarily black men, i.e. 92% male and 82% black (Tudor, 2012). The self-reported 12.5% rate of alcohol abuse in our population is higher than the 4.7% national 12-month prevalence of reported alcohol abuse (Grant et al., 2007). Likewise, the self-reported 35.0% rate of drug abuse is higher than the 1.4% national 12-month prevalence (Compton, Thomas, Stinson, & Grant, 2007). Clearly, the co-occurrence of alcohol and drug abuse with violence is an area in which we should focus future efforts. In contrast to substance abuse, the self-reported 12.5% rate of psychiatric disease in this study is less than the 26.2% national 12-month prevalence (Kessler, Chiu, Demler, Merikangas, & Walters, 2005). Of course, patients with severe psychiatric disease were excluded from the study, likely accounting for this lower rate. Gunshot wounds were far more common than stab wounds in our study cohort, suggesting that guns are used more commonly than knives by the TUH penetrating trauma population and/or that their injuries more often require presentation to a hospital and a longer hospital stay. We found a strikingly high percentage of the study participants had a history of witnessing violence and had already been hospitalized for violent injury

in the past. These statistics are not surprising given the degree of violence in the neighborhood that surrounds TUH. Furthermore, as reported in *Science* in 2005, witnessing gun violence as an adolescent doubles the odds that an individual will commit violence within two years (Bingenheimer, Brennan, & Earls, 2005) Also, being a victim of violence during adolescence increases the probability of being either a perpetrator and a victim during adulthood (Menard, 2002a). In fact, one-half of the study participants had a history of incarceration and 30.0% had active probation/parole issues or open criminal charges. These numbers parallel Philadelphia data which indicates that 68% of all shooting victims have histories of arrest (Tudor, 2012). Less than one-half of the participants were employed or in school prior to admission although most had graduated high school. Lastly, 37.5% of the participants did not have health insurance. This value is higher than the 2011 national average of 21% for adults 18 to 64 years ("Health Insurance Coverage," 2011). This difference could be due to the younger age and/or lower socioeconomic status of the study cohort compared to the national population.

The Turning Point's group qualitative responses to the interventions were overwhelmingly positive. The trauma bay resuscitation video made the group feel more grateful and cautious, the reality-based movie was deemed relevant, the visit with the survivor was inspiring, and the psychiatry evaluation was well-received.

Among the Turning Point participants who requested a psychiatry evaluation, 44% were diagnosed with an adjustment disorder and 33% were diagnosed with an acute stress disorder. Clearly, it is important to provide psychiatric support to these patients. The lifetime probability of developing post-traumatic stress disorder is 3.7% among victims of penetrating trauma and is highest among blacks, the most common race in our

population (Goldmann et al., 2011; Himle, Baser, Taylor, Campbell, & Jackson, 2009; Roberts, Gilman, Breslau, Breslau, & Koenen, 2011). A total of 22% were diagnosed with marijuana dependence, pointing to the need for substance abuse treatment.

Neither the Standard of Care nor Turning Point group had difficulty attending trauma clinic appointments. Therefore, this should be a low priority issue for our violence intervention program.

Some may argue the Turning Point interventions are not based on data-driven established techniques and that trauma population already has a record of poor judgment and is not best-suited to design a violence intervention program. As mentioned in the Introduction, the design of the Turning Point program was based on the survey recommendations of the trauma patients themselves. However, over the past two decades, there has been an increased emphasis on academic – community partnerships in research. Involving the community in research utilizes its contrasting skill set and knowledge base to improve the relevance of data (Israel, Schulz, Parker, & Becker, 1998).

This study has several weaknesses. First, this study is currently underpowered relative to its minimum intended sample size and therefore subject to type II error. Type II error occurs when a study fails to detect a significant finding when one truly exists as a result of inadequate sample size.

Second, the non-blinded nature of the demographic questions and AGVQ makes the data susceptible to response bias. The participants may have provided answers they assumed the investigators would find more appropriate. Future studies should use computer-assisted interviewing methods to minimize this bias (Ghanem, Hutton,

Zenilman, Zimba, & Erbelding, 2005; Kurth et al., 2004). Nonetheless, the degree of response bias would likely be similar between the two groups, therefore not significantly influencing the findings.

Third, there are a few issues with the use of the AGVQ in this study. It is not validated for participants over the age of 29 years. Although the median age of the entire study cohort was 28 years, the age range was 18 to 56 years. In addition, the AGVQ may not be sufficiently sensitive to detect changes in attitude in response to the Standard of Care or Turning Point programs. Finally, attitude change may not directly lead to behavior change. In regard to this issue, the author of the AGVQ, Jeremy P. Shapiro, Ph.D., wrote the following:

> It is a general finding in social psychology research that attitudes and behavior are only moderately correlated with each other. . . . Purely internal factors, such as attitudes, motives, and emotions, interact with situational factors to influence behavior. Situational factors may mask or override internal factors at any given time, but should the situation change, the influence of internal factors may become manifest in behavior. (Shapiro, 2000).

The influence of situational factors on behavior change points to the importance of the outpatient component of Turning Point, which aims to address the patients' hazardous life circumstances. For instance, if the outpatient component of Turning Point is able to help a patient secure steady employment, the patient will have a reliable source of income and be less apt to use illegal means for financial gain. Nonetheless, as mentioned in the Introduction, several studies suggest attitude change is a fundamental first step toward behavior change (Fazio & Williams, 1986; Leippe & Elkin, 1987). Moreover, in a meta-analysis of 88 studies evaluating the relationship between attitude and behavior, attitude

was found to "significantly and substantially" predict future behavior, with a mean correlation coefficient of 0.38 (Kraus, 1995). Attitudes have been shown to better correlate with future behavior if they are easy to recall and stable over time (Glasman & Albarracin, 2006). Toward this end, the outpatient component of Turning Point must continually reinforce the positive attitude changes initiated by the inpatient program.

There are also a few issues with the use of the AGVQ in terms of its validity, sensitivity, and relevance. Ultimately, however, the AGVQ was chosen after review of several other instruments because we felt it to be the most practical and pertinent to assess attitude change in a penetrating trauma population. We plan to test its internal validity and reliability once enrollment and data collection is complete.

The main strength of this study is its randomized design, which controlled for most confounding factors. This enables us to conclude that the superiority of Turning Point over Standard of Care was not due to the two groups being different with respect to many other related variables.

The focus of the Turning Point program is on changing attitudes toward guns and violence and addressing hazardous life circumstances among TUH's penetrating trauma population. Achieving Turning Point's most important goal of reducing retaliation and reinjury will undoubtedly have a positive impact on the personal, social, and economic well-being of the victims as well as their families and communities. The existence of Turning Point within a trauma center ideally situates it to carry out its mission. According to Carnell Cooper, M.D., a trauma surgeon in Baltimore, Maryland, with a special interest in violence prevention, "The trauma setting reaches perpetrators when they are

victims, vulnerable yet protected. It is in this ‘golden hour’ after surviving life-threatening injury that a deep trust can be established and a door is opened with opportunity for change” (Cooper, et al., 2006). Ultimately, however, Turning Point will have its greatest impact on the public health of this community if its works in conjunction with the city to address the underlying roots of the problem of violent injury, especially with respect to gun control, education, economic opportunity, and urban decay.

In the months ahead, we look forward to completing the larger study composed of more patients with longer follow-up and an evaluation of the outpatient component of the program. It will be interesting to determine if the attitude change observed in the Turning Point group was durable and whether the program reduced retaliation and reinjury. Based on these long-term results as well as the critical input of reviewers, we plan to tailor Turning Point so that it has the best chance for achieving its goals and wide-scale implementation.

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APPENDIX A

CITI HUMAN RESEARCH CURRICULUM COMPLETION REPORT

CITI Collaborative Institutional Training Initiative

Human Research Curriculum Completion Report
Printed on 9/30/2011

Learner: Catherine Loveland-Jones (username: clovelandjones)
Institution: Temple University
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Biomedical Research:

Stage 1. Basic Course Passed on 07/08/09 (Ref # 2979001)

Required Modules	Date Completed	Score
Belmont Report and CITI Course Introduction	07/08/09	3/3 (100%)
History and Ethical Principles	07/08/09	6/7 (86%)
Basic Institutional Review Board (IRB) Regulations and Review Process	07/08/09	4/5 (80%)
Informed Consent	07/08/09	4/4 (100%)
Social and Behavioral Research for Biomedical Researchers	07/08/09	4/4 (100%)
Records-Based Research	07/08/09	2/2 (100%)
Genetic Research in Human Populations	07/08/09	2/2 (100%)
Research With Protected Populations - Vulnerable Subjects: An Overview-	07/08/09	4/4 (100%)
Vulnerable Subjects - Research Involving Prisoners	07/08/09	4/4 (100%)
Vulnerable Subjects - Research Involving Minors	07/08/09	3/3 (100%)
Vulnerable Subjects - Research Involving Pregnant Women,	07/08/09	3/3 (100%)

Human Fetuses, and Neonates		
International Studies	07/08/09	1/1 (100%)
Group Harms: Research With Culturally or Medically Vulnerable Groups	07/08/09	3/3 (100%)
FDA-Regulated Research	07/08/09	5/5 (100%)
Research and HIPAA Privacy Protections	07/08/09	2/2 (100%)
Vulnerable Subjects - Research Involving Workers/Employees	07/08/09	4/4 (100%)
Conflicts of Interest in Research Involving Human Subjects	07/08/09	1/2 (50%)
Temple University	07/08/09	no quiz

For this Completion Report to be valid, the learner listed above must be affiliated with a CITI participating institution. Falsified information and unauthorized use of the CITI course site is unethical, and may be considered scientific misconduct by your institution.

Paul Braunschweiger Ph.D.
Professor, University of Miami
Director Office of Research Education
CITI Course Coordinator

Return

APPENDIX B

TEMPLE UNIVERSITY INSTITUTIONAL REVIEW BOARD CERTIFICATION OF APPROVAL

TEMPLE UNIVERSITY

Office for Human Subjects Protections
Institutional Review Board
Medical Intervention Committees A1 & A2
Social and Behavioral Committee B

Student Faculty Conference Center
3340 N Broad Street - Suite 304
Philadelphia, Pennsylvania 19140
Phone: (215) 707-3390
Fax: (215) 707-8387
e-mail: irb@temple.edu

Certification of Approval for a Project Involving Human Subjects

Protocol Number:	**20147**
PI:	**GOLDBERG, AMY**
Approved On:	05-Dec-2011
Review Date:	05-Dec-2011
Committee:	B BEHAVIORAL AND SOCIAL SCIENCES
School/College:	Surgery (0530)
Department:	TUSM:Surgery/Trauma (05302)
Sponsor:	Temple University
Project Title:	A prospective randomized controlled study of the utility of a hospital-based violence intervention program in changing penetrating trauma victims' attitudes towards violence

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In accordance with the policy of the Department of Health and Human Services on protection of human subjects in research, it is hereby certified that protocol number 20147, having received preliminary review and approval by the department of TUSM:Surgery/Trauma (05302) was subsequently reviewed by the Institutional Review Board in its present form and approved on 05-Dec-2011 with respect to the rights and welfare of the subjects involved; appropriateness and adequacy of the methods used to obtain informed consent; and risks to the individual and potential benefits of the project.

In conforming with the criteria set forth in the DHHS regulations for the protection of human research subjects, and in exercise of the power granted to the Committee, and subject to execution of the consent form(s), if required, and such other requirements as the Committee may have ordered, such orders, if any, being stated hereon or appended hereto.

It is understood that it is the investigator's responsibility to notify the Committee immediately of any untoward results of this study to permit review of the matter. In such case, the investigator should call the IRB at (215) 707-3390.

This is the Certificate of Approval. Supplemental documentation will follow under separate cover. Enrollment may not begin until all documents have been reviewed and processed by the IRB and received by the study team.

Board determined conditions of approval applied to this protocol:

Name (Fulfilled Date)	Description

ZEBULON KENDRICK, Ph.D.
CHAIRMAN, IRB

APPENDIX C

RESEARCH SUBJECT CONSENT FORM

Project Title

A prospective randomized controlled study of the utility of a hospital-based violence intervention program in changing penetrating trauma victims' attitudes toward violence

Participant Name

_____

Participant ID #

_____

Principal Investigator Name

Amy J. Goldberg, MD

Section Chief, Trauma and Surgical Critical Care

Department of Surgery

Temple University Hospital

215-707-3633

Institutional Review Board Protocol #

20147

Temple University is not being compensated for performing this study.

This study is sponsored internally by the Department of Surgery at Temple University Hospital.

PURPOSE

The purpose of this study is to determine if a hospital-based violence intervention program can help change victims' attitudes toward violence. The name of this program is Turning Point. This study is important because violence is a serious problem in our society. This study involves research. You are being asked to participate in this study because you are a gunshot or stab victim at least 18 years of age being treated at Temple University Hospital.

DESCRIPTION

This study will randomly select patients for Turning Point. If you participate in the study, you have an equal chance of being selected or not selected for Turning Point (just like flipping a coin). If you *are not* selected for Turning Point, you will receive the standard services we currently provide in the hospital. Specifically, you will receive help from a case manager, a social worker, and an outreach coordinator. On the other hand, if you *are* selected for Turning Point, you will be asked to participate in four activities. First, you will watch a video of yourself from when you were treated in the emergency room when you first came to the hospital. Second, you will watch a reality-based movie about violence. Third, you will be visited by a survivor of violence. Lastly, you will be

linked up with an outside social service organization that may be able to help you with such things as job training, education, or family problems after you are discharged.

You will be asked to complete a questionnaire at the beginning and end of the hospital stay as well as after discharge. This questionnaire has to do with your attitudes toward violence and your thoughts about the usefulness of Turning Point (if you received the program). You will also be asked about whether you are in school, have a job, and have ever been in prison. You do not have to answer any questions that make you feel uncomfortable. In addition, we will also collect information from your medical record, including your age, race, gender, injuries, alcohol or drug use, and whether you had surgery.

We plan to recruit 150 people in this study. Data collection should take about four months and we hope to publish the results in a scientific journal within two years.

You do not have to do anything other than give your consent to participate.

Your participation in the study will not prolong your hospital stay or change your medical care in any way.

RISKS

If you are selected for Turning Point, some of the activities may be upsetting if they remind you about your injuries or the problem of violence in the community. Should this occur, we will offer you the opportunity to take a break from the activity, withdraw from the study, and/or be visited by a mental health professional.

BENEFITS

If you are selected for Turning Point, you may find that the activities change your attitudes about violence for the better and may help you with certain areas of your life that are problematic. Also, if Turning Point is found to be useful, you will have played a role in creating a program that could be used to help others like you. However, there is no guarantee that you will benefit from the study.

ALTERNATIVE

You may choose not to participate in this study. Your medical care at Temple University Hospital will not be affected in any way if you choose not to participate.

CONFIDENTIALITY STATEMENT

Although the study team has placed safeguards to maintain the confidentiality of your personal information, there is always a potential risk of an unpermitted disclosure. All documents and information pertaining to this research study will be kept confidential in accordance with applicable federal, state, and local laws and regulations. You understand that data generated by the study may be reviewed by Temple University's Institutional Review Board and Office for Human Research Protections to assure proper conduct of the study and compliance with federal regulations. You understand that the results of the study may be published. If so, you will not be identified by name.

VOLUNTARY PARTICIPATION

Your participation in this study is entirely voluntary. You may refuse to participate or discontinue participation without penalty or loss of benefits

COMPENSATION

You will not receive any compensation for participation in this study.

INSTITUTIONAL CONTACT

If you have any questions about your rights as a research subject, you may contact the Institutional Review Board at (215) 707-3390 or irb@temple.edu. The Institutional Review Board Coordinator may also be reached by email: IRB@temple.edu or regular mail at the address below.

Institutional Review Board Coordinator

Temple University Research Administration

Student Faculty Conference Center

3340 N. Broad St. – Suite 304

Philadelphia, PA 19140

If you have any questions about the details of the study, you may ask them now or contact the study Co-Investigator Catherine (Loveland-Jones) Sheahan at (267) 615-9158.

COST

This study will not cost you anything to participate.

FINAL STATEMENT AND SIGNATURE

This study has been explained to me, I have read the consent form and I agree to participate. I have been given a copy of this consent form.

Participant:

_____

Print Name

_____

Signature

_____

Date

Investigator:

_____

Print Name

_____

Signature

_____

Date

APPENDIX D

AUTHORIZATION TO USE PERSONAL HEALTH INFORMATION

Authorization to use and disclose personal health information for research at Temple University, Temple University Health System Affiliates, and Temple University Clinical Faculty Practice Plan

Information that will be collected from you and disclosed

During the course of this research study, which is described by title in the attached consent form and study-specific document, certain personal health information will be collected and disclosed to recipients identified in this document. It is important for you to know that your personal health information may identify you by name, address, telephone number, photograph, social security number, health plan number, and date of birth, dates relating to various tests and procedures, or other personally identifiable information. This information may be obtained from your medical records, physical examinations and procedures: (a) to determine if you are eligible to participate in the research study or (b) created as a result of your participation in the research study.

How your information will be used and to whom it will be disclosed

By signing this authorization form, you give Temple University, Temple University Health System affiliates, and Temple University Clinical Faculty Practice Plan, Temple University Institutional Review Board, and the investigator(s) named in the attached study-specific document, permission to use your personal health information and to disclose this information to the following recipients (as applicable): sponsor; sponsor's

agents; governmental entities overseeing research in the United States and abroad, which may include in the United States, the Food and Drug Administration and the Department of Health and Human Services. It is important for you to know that the recipients, and their agents or representatives, will take all reasonable efforts to maintain your personal health information in confidence, and to use appropriate safeguards to prevent further use or disclosure by those not authorized to use or disclose your personal health information. However, once your health information is disclosed to the recipients, then your personal health information may no longer be protected by federal privacy laws and regulations and there is a potential for re-disclosure of this information. However, the laws of the Commonwealth of Pennsylvania or your state of residence may provide further privacy protection.

How you can access your information

You should know that you have the right to see and receive a copy of your personal health information that was collected from you during the research study for as long as this information is maintained by Temple University and the principal investigator. However, while the research study is in progress, you will not be able to access your personal health information in order to preserve the integrity of the research. You will be able to access this information when the study is completed. There may be associated charges for copying these materials.

How to revoke your authorization

You should also know that you can revoke your authorization to disclose your personal health information at any time by sending a written notice to the principal investigator

and Temple University at the address listed in the attached study-specific document. Should you decide to revoke your authorization, Temple University and the principal investigator will stop collecting your study-related health information. In addition, Temple University and the principal investigator will stop using and disclosing your personal health information, except to the extent such information was collected prior to your revocation. For instance, Temple University, principal investigator, recipients, and their agents or representatives may use the information obtained before you revoked your authorization in order to preserve the scientific integrity of the research study.

Important notices

You will receive a signed copy of this authorization to acknowledge your approval for Temple University and the principal investigator to the release your personal health information. If you do not sign this authorization or if you revoke this authorization, the principal investigator and Temple University may decide not to permit you to participate in or to continue to participate in the research study identified in the attached study-specific document.

STUDY-SPECIFIC DOCUMENT

1. RESEARCH STUDY: A prospective randomized controlled study of the utility of a hospital-based violence intervention program in changing penetrating trauma victims' attitudes toward violence (IRB Protocol # 20147)

2. PRINCIPAL INVESTIGATOR: Amy J. Goldberg, MD; Department of Surgery, Temple University Hospital

3. EXPIRATION DATE: This Authorization does not expire.

Signature of Patient Date

Printed Name of Patient

Signature of Personal Representative of the Patient Date

Printed Name of Personal Representative of the Patient and Relationship to Patient

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Signature of Person Collecting Authorization Date

Printed Name of Person Collecting Authorization

Version #2: 05/21/2010 (second)

APPENDIX E

ATTITUDES TOWARD GUNS AND VIOLENCE QUESTIONNAIRE (SAMPLE ITEMS)

. Now, here are the questions.	Agree	Not Sure	Disagree
1. You've got to fight to show people you're not a wimp.	✔	✔	✔
2. If someone disrespects me, I have to fight them to get my pride back.	✔	✔	✔
3. Carrying a gun makes people feel safe.	✔	✔	✔
4. Carrying a gun makes people feel powerful and strong.	✔	✔	✔
5. If people are nice to me, I'll be nice to them, but if someone stops me from getting what I want, they'll pay for it bad.	✔	✔	✔