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BRIEF REPORT

Implementation of a Screen and Treat Program for Child Posttraumatic Stress Disorder in a School Setting After a School Suicide

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To provide effective treatments for childhood posttraumatic stress disorder (PTSD) children with PTSD must first be identified. The authors implemented a “screen and treat” program following a widely witnessed school suicide. Three months after the suicide, exposed students received the Child Trauma Symptom Questionnaire at school. Parents received the questionnaire to rate their children’s PTSD symptoms. Children with scores ≥ 5 received follow-up interviews and those diagnosed with PTSD were referred for treatment. Ninety-six percent of exposed students were screened, 14% screened positive, and 6% had PTSD. Child and parent agreement was generally poor. All children with PTSD were successfully referred to treatment. Screen and treat programs using existing clinical instruments are efficient and acceptable for use in school settings following trauma.

Exposure to violent death in schools is an infrequent, but high-magnitude stressor that can adversely affect child witnesses (Muschert, 2007). Because of its infrequency, we have little information about effective strategies to identify children at risk for psychological sequelae or procedures for ensuring their mental wellbeing following such tragic events. Posttraumatic stress disorder (PTSD) rates in children exposed to traumas vary by exposure type. Higher rates, ranging from 5–33%, are associated with exposure to violence and violent death (Salmon & Bryant, 2002). Posttraumatic stress disorder in children is substantially impairing and persists if untreated. Recent advances in the diagnosis (Meiser-Stedman, Smith, Glucksman, Yule, & Dalgleish, 2008)

and treatment (Cohen, 2005) of childhood PTSD highlight the importance of efficient methods to identify children at risk of PTSD and refer them to evaluation and treatment.

Following the London bombings in 2005, a community-based “screen and treat” approach identified and led to the treatment of substantial numbers of adults with PTSD (Brewin et al., 2008). At least two screening instruments have been developed and shown to accurately and efficiently identify children at risk of PTSD, but have been used in clinical emergency department settings for accident-related injuries (Kenardy, Spence, & Macleod, 2006; Winston, Kassam-Adams, Garcia-Espana, Ittenbach, & Cnaan, 2003). This report’s primary goal is to describe the feasibility of implementing a pediatric screen and treat approach in a school community setting following a high-magnitude traumatic event: a student suicide on school grounds. In this school-based screen and treat project, we directly queried children about their symptoms during school hours and used an “opt-out” parental consent strategy to maximize participation. We also describe the distribution of PTSD symptoms, the prevalence of PTSD, and the relationship between exposure variables and PTSD symptoms. We assessed the level of agreement between parent and child on the child’s symptoms to address the question of whether it is sufficient to query parents about PTSD symptoms in their children.

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METHOD

Participants and Event

Exposed students were in a school building for grades 4–12. A teenage student jumped to his death from the school roof, impacting the sidewalk in front of the school. At the moment of impact, the entire fourth grade class of 82 students happened to be assembling on the sidewalk. No other student was physically injured, though several students were close enough to be splattered with blood. Many students heard a loud, gunshot like noise upon impact, and many students saw the dead body or their classmates covered in blood. All other grades were inside at the time of impact. The school followed their emergency procedures, and all students were sent home with their parents.

Measures

The Child Trauma Screening Questionnaire has 10 items corresponding to the 5 reexperiencing and 5 hyperarousal symptoms of PTSD. Scores range from 0–10. The questionnaire has good convergent validity with other measures of PTSD in children. A cutoff score of 5 provides optimum predictive value for PTSD screening. The average age of the reference sample was 10.8 years, similar to this study sample (Kenardy et al., 2007). We added assessments of (a) exposure (1 = *I was absent from school that day*; 2 = *I didn't see anything*; 3 = *I saw what happened*), (b) seeing adults being very afraid that day (*yes/no*), and (c) how scared they felt (Likert scale—1 = *not scared at all*; 5 = *the most scared I've ever been in my life*).

Children with Child Trauma Symptom Questionnaire scores ≥ 5 were interviewed with the Clinician Administered PTSD Scale for Children and Adolescents (CAPS-CA; Nader et al., 1996), to determine PTSD diagnostic status. Diagnoses were made using (a) criteria according to the *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition-Text Revision (DSM-IV-TR*; American Psychiatric Association, 2000), and (b) the alternative criteria described by Scheeringa and colleagues, requiring one avoidance symptom, one reexperiencing symptom, and two hyperarousal symptoms. Children with this symptom set experience impairment equivalent to that reported by children meeting the standard *DSM-IV* criteria (Scheeringa, Zeanah, Myers, & Putnam, 2005).

In the adult (parent) sample, PTSD symptoms were assessed using the PTSD Symptom Scale Self-Report (Foa, Riggs, Dancu, & Rothbaum, 1993).

Procedure

After the suicide, necessary administrative and investigative tasks related to the death were completed. The school then asked local mental health experts for guidance on ensuring the wellbeing of all impacted children. Three months after the suicide, the school

agreed to implement a screening and referral process for the fourth grade class, given their high level of exposure. Teachers gave the questionnaire to students in class in the morning. Teachers read a script asking the students to complete the questionnaire as best they could. Total time to complete and collect the questionnaire was 15 minutes. Two weeks before the classroom screening, parents received a mailed packet with informed consent information, and instructions to complete and return the questionnaire regarding their child's symptoms and the PTSD Symptom Scale-Self Report regarding their own PTSD symptoms. For this report, institutional review board approval was obtained to analyze deidentified data.

For students meeting PTSD criteria, parents were contacted, the results were discussed in person or by phone, and a referral was made to a local psychiatrist or psychologist for treatment.

RESULTS

Of the 82 students in the fourth grade, 79 (44 girls and 38 boys) were present for the screening and completed questionnaires (96% completion). Frequencies of each PTSD symptom are shown in Figure 1. Eleven children (14%) had Child Trauma Symptom Questionnaire scores ≥ 5 and were evaluated with the CAPS-CA.

Of the 11 children with positive screens, 2 children (2.5%) met criteria for *DSM-IV* PTSD and 5 children (6.3%) were diagnosed with PTSD using the alternative criteria. The 5 students meeting the alternative criteria for PTSD included those who also met *DSM-IV* criteria for PTSD. The average CAPS-CA score for the 5 students with PTSD (by alternative criteria) was 37.8 ($SD = 14.9$, range = 23–57); the average number of symptoms was 8 ($SD = 3.1$, range = 5–12). All 5 children with PTSD were referred to treatment.

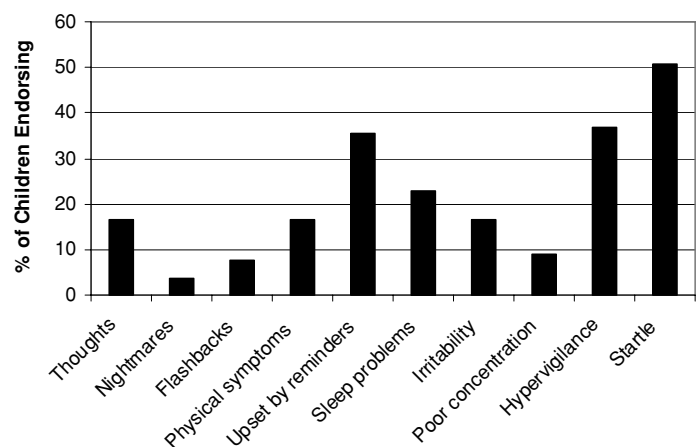


Figure 1. Frequency of reexperiencing and arousal symptoms 3 months after exposure ($N = 79$).

Table 1. Agreement Between Parent and Child Report of PTSD Symptoms on 10-Item CTSQ

Variable	Cohen's κ	Agreement
Thoughts/memories	.22	Fair
Nightmares	.48	Moderate
Flashbacks	.00	None
Physical reaction	.48	Moderate
Upset by reminders	.03	Slight
Sleep	.57	Moderate
Irritability	-.18	None
Concentration	-.11	None
Hypervigilance	-.09	None

Note. PTSD = Posttraumatic stress disorder; CTSQ = Child Trauma Symptom Questionnaire.

We examined whether exposure variables (level of fear, degree of exposure, witnessing adults being afraid) predicted PTSD symptoms. The Child Trauma Symptom Questionnaire scores were log-transformed and linear regression was used. Both self-reported fear and degree of exposure predicted symptom count (fear: $B = 0.15$, $SE B = 0.06$, $p < .05$; exposure: $B = 0.27$, $SE B = 0.12$, $p < .05$). Neither gender nor parent symptom level were significant predictors.

Thirty-three (40%) parents returned questionnaires regarding their children and their own PTSD symptoms. Parent response versus nonresponse was not associated with a difference in child self-report symptom scores, $t < 1$; nor with child fear level, $t < 1$; nor with degree of exposure, $t < 1$. Among responding parents, 82% reported zero PTSD symptoms ($M = 0.5$, $SD = 1.3$). Of the 5 students with PTSD, only 1 had parents who returned the parent rating form about the child.

Finally, for the 33 parent-child pairs where a parent did complete a rating of the child, we compared parent and child agreement on child symptoms, calculating Cohen's kappa for each of the 10 items assessed by the Child Trauma Symptom Questionnaire (Table 1). There was moderate agreement on three items: the presence of nightmares, $\kappa = .47$; sleep difficulties, $\kappa = .57$; and physical reactions to traumatic reminders, $\kappa = .48$. There was very little agreement on other items.

DISCUSSION

We describe the feasibility of implementing a screen and refer approach among primary school-aged children for PTSD following a public and high-magnitude traumatic event in a school setting. School officials recognized that there were students at risk, and wanted to do everything possible to ensure the mental wellbeing of the highly exposed fourth grade students. There were concerns that a screening program would be distressing to students and

parents, but research-based information provided by the clinical team showing that some percentage of the students were suffering silently, that PTSD screening is not intrinsically distressing, and screening is effective at identifying students needing treatment was substantially persuasive to school administrators, teachers, and parents. In addition, the program's success depended on the trust and collaboration between the clinical advisors and the school community.

The rates of PTSD following the witnessing of this graphic suicide were 2.5% (2 of 79 children) using *DSM-IV* PTSD criteria and 6.3% (5 children) using the alternative PTSD criteria for children. These rates are similar to those obtained in two other studies of peer suicides (4–5%; see Brent et al., 1995). Using the alternative PTSD criteria identified an additional three students, adding to the rationale for its use in primary school-aged children.

As in other studies, both degree of exposure and degree of fear were associated with higher symptom counts 3 months following exposure. Gender was not associated with higher symptom counts and was equally distributed among PTSD cases, consistent with epidemiological data indicating the lack of gender differences prior to early adolescence. We also found no relationship between parental symptoms and child symptoms, possibly because there was little variability in the self-reported parent PTSD symptoms.

Parent response, even in this small and highly involved community of parents, was poor, with only 33 of 82 parents completing forms on their children. Of those who did respond with ratings of their children's symptoms, agreement between parent and child on symptoms was poor except for nightmares, physical reactivity to reminders of the event, and sleep problems. These findings are consistent with earlier reports using structured clinical interviews (Meiser-Stedman et al., 2008). Of note, for the 5 children with PTSD, the parents of 4 did not return child PTSD rating forms mailed to the home. All 5 parents of children with PTSD were very surprised and grateful to receive the feedback about their children's diagnosis.

The design of this intervention was pragmatic rather than experimental. Interpretation of our findings is limited by the lack of comparison groups and the omission of clinical interviews with a subset of children scoring less than 5 on the Child Trauma Symptom Questionnaire. The screening purpose and the logistical demands of this program constrained the length of the assessment, and we did not examine other questions such as prior history of psychiatric diagnosis, family history, life history of prior traumatic events, degree of connectedness to the suicide, or family variables. We also did not examine whether the exposure variables could increase the predictive utility of the questionnaire. Furthermore, screening for PTSD in students in other grades, who were also affected by this very graphic and public suicide, but were not directly exposed, may have had clinical merit. However, time and other resource limitations required that we focus on the most impacted group of students.

Following the 2001 World Trade Center attack, a large screening program was put in place in New York City's public schools but the anonymous nature of the survey did not allow for referrals to be made (Hoven et al., 2005). Conversely, school-based treatment services were provided but required clinician referrals and included a fairly intensive assessment battery (Hoagwood et al., 2007). This study shows that it is feasible to integrate a brief screen and referral to treatment approach in a school setting. No parent refused the screen, indicating that this process was well accepted by families of affected children. Teachers and school administrators were also receptive to this effort. Given the problems with parent-child agreement and low return rates of mailed questionnaires to parents, direct in-school screening for PTSD of elementary-school-aged children after a trauma is an effective and acceptable way to identify children in need of psychological services for PTSD.

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