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Evaluating Referral, Screening, and Assessment Procedures for Middle School Trauma/Grief-Focused Treatment Groups

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There is a need to delineate best practices for referring, assessing, and retaining students suspected of posttraumatic stress (PTS) and maladaptive grief (MG) in school-based treatment. Evidence-based risk-screening procedures should accurately include students who are appropriate for group treatment and exclude students who do not require treatment or who are better served by other forms of intervention and support. We described and evaluated the sequence of steps used to screen 7th- and 8th-grade students ($N = 89$) referred by school staff as candidates for an open trial of group-based Trauma and Grief Component Therapy for Adolescents (TGCTA; Saltzman et al., in press). We used t tests to compare included versus excluded students on PTS symptom and MG reaction scores (University of California at Los Angeles Posttraumatic Stress Disorder Reaction Index; Grief Screening Scale) during the group screen, individual interview, and treatment-implementation phases. Logistic regressions tested the incremental utility of including measures of both trauma exposure and related emotional and conduct problems (Strengths and Difficulties Questionnaire) in the screening battery. Results suggest that the group screen helped to detect mental health needs and that the individual interview further identified students with PTS and emotional problems. Conduct problems and trauma exposure predicted attrition among students who qualified for treatment. MG incrementally predicted students who advanced from the group screening to the individual interview, and trauma exposure incrementally predicted attrition from treatment. Findings yield implications for improving research and practice, including procedures for enhancing school-based referral, screening, assessment, and selection procedures.

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this work as coauthors of the in-press *Trauma and Grief Component Therapy for Adolescents* manual (Saltzman et al., in press).

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Impact and Implications

The increasing availability of empirically supported school-based trauma and grief treatments introduces a need to accurately identify students who are appropriate for treatment. This study describes a tiered screening process for school-based group treatment for posttraumatic stress and maladaptive grief and offers recommendations for improving research and assessment procedures.

Keywords: assessment, attrition, risk screening, school-based mental health, trauma

Economically disadvantaged youth are at heightened risk for experiencing potentially traumatic events (Attar, Guerra, & Tolan, 1994; Evans & English, 2002), including bereavement (Kaplow, Saunders, Angold, & Costello, 2010). Although not all youth exposed to trauma and bereavement develop clinically significant problems, disadvantaged youth are susceptible to developing post-traumatic stress (PTS) symptoms (Gapen et al., 2011; Schwartz, Bradley, Sexton, Sherry, & Ressler, 2005) and maladaptive grief (MG) reactions (Kersting, Brähler, Glaesmer, & Wagner, 2011). These youth also report higher rates of unmet needs for mental health care (Costello, He, Sampson, Kessler, & Merikangas, 2014; Roll, Kennedy, Tran, & Howell, 2013). Without treatment, PTS symptoms often persist (Priebe et al., 2009) and may even worsen over time (Goenjian et al., 1997). Similarly, although normative grief reactions often abate over time, a subset of youth continue to experience MG reactions (Melhem, Porta, Shamseddeen, Walker Payne, & Brent, 2011) that interfere with functioning even after accounting for PTS and other mental health concerns (Melhem, Moritz, Walker, Shear, & Brent, 2007). Although no clear consensus exists regarding the essential features of MG, continuing theoretical and empirical work has suggested that MG can manifest in a variety of forms depending on such factors as age, cultural background, exposure to the death, and circumstances of the death. Features of MG may include severe unremitting separation distress (e.g., pining, yearning, longing to be reunited with the deceased), existential, identity-related distress (e.g., feeling like part of one-self died with the other person's death, nihilistic outlook on one's life and future), and, in cases of traumatic or otherwise tragic deaths, circumstance-related distress (e.g., severe distressing pre-occupations over the manner of death or desires for revenge; Layne, Kaplow, Oosterhoff, Hill, & Pynoos, in press).

Schools offer a convenient and reliable setting that can circumvent common barriers to youth's ability to access mental health services in the community. For example, school-based services reduce transportation difficulties, do not require payment, and provide ready access to health providers (Garrison, Roy, & Azar, 1999; Graham, Osofsky, Osofsky, & Hansel, 2017; Hansel et al., 2010; Husky et al., 2011; Stein et al., 2003). Indeed, Jaycox and colleagues (2010) found that a substantially higher proportion of students referred to school-based trauma intervention (91%) completed treatment compared to students referred to clinic-based treatment (15%), even though both treatments were offered at no cost to families. Notwithstanding these advantages, school-based mental health lacks clearly delineated "best practices" for referring, assessing, and then identifying students most likely to benefit from trauma and bereavement-focused group interventions. The task of referring students presents an initial challenge, because students rarely choose to spontaneously disclose mental health

problems (Boldero & Fallon, 1995). School staff who have daily or regular contact with troubled students may have knowledge about the students' trauma and bereavement history or may be able to detect changes in functioning that accompany exposure to loss or trauma. Given the sensitive nature of traumatic and bereavement experiences, a one-on-one interview with a therapist can be advantageous. However, in school settings, conducting an in-depth individual assessment with all referred youth can be impractical given competing demands for staff time and funding resources (Mass Levitt, Saka, Hunter Romanelli, & Hoagwood, 2007). These limited resources may make individual assessment of referred youth unnecessary and potentially unreliable because excessive assessment too early in the process can increase classification errors (Layne, Kaplow, & Youngstrom, 2017). Thus, a tiered assessment approach that includes a brief screening followed by an in-depth interview for students who screen positive, similar to other tiered schoolwide screening and intervention approaches (e.g., Dowdy, Ritchey, & Kamphaus, 2010; Sugai & Horner, 2009), may be helpful, especially in schools with large proportions of students who are at risk for trauma and bereavement. Thus, research is needed to inform how a tiered approach can differentiate between included and excluded students in each step of the assessment process.

Once students are referred, the next challenge centers on identifying appropriate tools, procedures, and methods with which to assess students' symptoms. Clinical problems among many traumatized and bereaved youth are often misdiagnosed or undetected due to inadequate assessment procedures (Layne et al., 2017). Contributing to this problem, many tools that assess broad-spectrum psychological functioning (e.g., Achenbach & Rescorla, 2001; Goodman, 2001) fail to assess trauma exposure and associated PTS and MG reactions. Though several specific measures for PTS have been developed (Layne et al., 2017), evidence-based assessment of MG reactions is a nascent area of research with a historic dearth of well-validated measures. Meta-analyses have suggested that the best bereavement-treatment outcomes come from studies that select bereaved individuals who endorse higher levels of bereavement-related distress (Currier, Holland, & Neimeyer, 2007; Currier, Neimeyer, & Berman, 2008; Rosner, Kruse, & Hagl, 2010). These summaries have focused on intervention procedures and offered little guidance for optimizing risk detection and assessment procedures to select youth for treatment (Edgar-Bailey & Kress, 2010; Haine, Ayers, Sandler, & Wolchik, 2008). Consequently, there is a pressing need for clinically useful assessment tools and practices that can effectively evaluate trauma, bereavement, traumatic bereavement, and the interplay that can emerge between PTS symptoms and grief reactions following traumatic loss (Layne et al., in press).

A final challenge comes in identifying youth who are most likely to engage in and complete treatment. Co-occurring mental health problems that interfere with academic functioning (Boyraz, Horne, Owens, & Armstrong, 2013; Cook et al., 2005; Duplechain, Reigner, & Packard, 2008; Saigh, Yasik, Oberfield, Halamandaris, & McHugh, 2002) also increase risk for attrition from trauma-focused treatments (Sprang et al., 2013; Wamser-Nanney & Steinzor, 2016, 2017). Attrition undermines the potential effectiveness of treatment and further reduces the mental health services available to youth who need them (Armbruster & Kazdin, 1994). Economic disadvantage further increases risk for attrition (de Haan, Boon, de Jong, Hoeve, & Vermeiren, 2013; Sprang et al., 2013; Wamser-Nanney & Steinzor, 2016, 2017). The evidence has been mixed regarding which factors are linked to attrition among youth receiving trauma-focused treatment. Some studies have reported that a history of trauma exposure predicts attrition (Jensen et al., 2014; Wamser-Nanney & Steinzor, 2017). Alternatively, other studies have found no significant relations between attrition and trauma exposure, pretreatment PTS symptoms, or emotional problems (Chasson, Vincent, & Harris, 2008; Sprang et al., 2013). In fact, one study reported that *lower* trauma-related distress (e.g., traumatic events without life threat or physical injury, single-incident trauma) predicted attrition (Chasson, Mychailyszyn, Vincent, & Harris, 2013). Thus, clarifying whether screening data are useful in identifying students at risk for attrition can promote efforts to match youth to appropriate treatment formats and signal the need to mobilize treatment-engagement strategies.

In summary, there is a continued need within the child mental health field to evaluate methods for referring, assessing, and retaining youth suspected of PTS and MG in school-based treatment. This study, thus, aimed to both describe and empirically evaluate a tiered referral and assessment process for group-based treatment of PTS and MG reactions in three middle schools with high proportions of students from low-income families. In this article, we describe the steps in the assessment process (see Figure 1 and the Method section), which included school staff referrals, parental consents to screen, group-based screening, and individual interviews. Then, we evaluated these procedures with two objectives in mind. Our first objective was to test between-groups differences in PTS symptoms, MG reactions, trauma exposure, emotional problems, and conduct problems to address the question of how students who screened positive differed from students who screened negative. Our second objective was to evaluate the incremental utility of including additional measures (e.g., trauma exposure, emotional problems, conduct problems) in the assessment battery used to identify students who would subsequently advance to the individual interviews, qualify for group treatment, and successfully complete treatment.

Method

Participants

Participants were referred from three middle schools within a school district that had both urban and suburban schools. To protect the confidentiality of participating schools, we present school information in aggregate. The three schools had an average of 857 students ($SD = 193.54$). Male students constituted 51.47% of the combined population ($SD = 5.10\%$). Nearly two thirds of

attending students (64.47%) qualified for free or reduced lunch. The largest group of students identified as African American/Black ($M = 43.93\%$, $SD = 3.80$), followed by White, non-Hispanic/Latino ($M = 33.83\%$, $SD = 9.57$), and Hispanic ($M = 18.13\%$, $SD = 9.72$). School staff referred 168 students for screening, but no other demographic data were available for referred students. Additional demographic data were available for the 44 students who began trauma and grief component therapy for adolescents (TGCTA; $M_{age} = 13.43$ years, $SD = .78$; 73% female; 56% White, non-Hispanic/Latino; 29% African American/Black; 15% Hispanic/Latino).

Measures

The University of California at Los Angeles Posttraumatic Stress Disorder Reaction Index (UCLA-RI). The UCLA-RI (Pynoos, Rodriguez, Steinberg, Stuber, & Frederick, 1998) is a widely used questionnaire that assesses trauma exposure and PTS severity. Students reported whether they had experienced 13 potentially traumatic events (e.g., abuse, community violence, sexual assault) and indicated which traumatic event was currently the most bothersome. Students then reported the frequency of PTS symptoms they experienced during the past month on a 5-point Likert scale (score range = 0–68). Total-scale scores between 30 and 39 reflect moderate PTS symptom severity, whereas scores ≥ 40 reflect severe PTS. Scores ≥ 38 show good sensitivity (.93) and specificity (.97) for detecting posttraumatic stress disorder (PTSD; Saltzman, Steinberg, Layne, Aisenberg, & Pynoos, 2001; Steinberg, Brymer, Decker, & Pynoos, 2004). The UCLA-RI has strong psychometric properties, including high internal consistency ($\alpha = .90$; Layne et al., 2001) and test–retest reliability (.84; Roussos et al., 2005; Steinberg et al., 2004). The UCLA-RI has demonstrated acceptable to good convergent validity with theoretically related measures, including war exposure ($r = .59$; Ellis, Lhewa, Charney, & Cabral, 2006) and depression symptoms ($r_s = .51-.72$; Ellis et al., 2006; Roussos et al., 2005). Internal consistency for this sample was excellent ($\alpha = .91$); PTS severity scores also showed good convergent validity with theoretically related measures, including exposure to potentially traumatic events (as assessed by the UCLA-RI; $r = .62$) and emotional problems ($r = .72$).

The University of California at Los Angeles Grief Screening Scale (UCLA-GSS). The UCLA-GSS (Layne et al., 2008) was adapted to measure MG reactions. Students rated the frequency with which they experienced eight grief reactions over the last month on a 5-point Likert scale from 0 (*none of the time*) to 4 (*most of the time*; range = 0–32). Sample items include “Life for me doesn’t have much purpose since he/she died” and “Upsetting thoughts about how the person died keep me from enjoying good memories of him/ her.” Reflecting the ongoing evolution of the field, these items were derived from earlier grief scales (Grief Screening Scale: Layne, Steinberg, Savjak, & Pynoos, 1998; UCLA Grief Inventory: Pynoos et al., 1987) and have since been further refined for the Persistent Complex Bereavement Disorder Checklist (Layne, Kaplow, & Pynoos, 2013). A closely related version of the UCLA-GSS completed by war-exposed Bosnian adolescents produced good evidence of criterion-referenced validity with measures of posttraumatic stress and depression symptoms ($r_s = .37-.59$; Claycomb et al., 2016). In the current study, items

A. Referral to Screen: School staff referred 168 students to complete trauma and grief-focused screening based on their knowledge or suspicion that the student had experienced a trauma or loss	
B. Parental Consent to Screen	
B1. Parental Consent to participate screening was obtained for 89 students	B2. Parental consent to participate in screening was not obtained for 79 students
C. Group Screening: 89 Students participated in group screening	
C1. 64 students were identified as “at risk” and participated in an individual interview <ul style="list-style-type: none"> 63 of these students endorsed levels above clinical cut-offs for PTS (UCLA-RI total score ≥ 30) or MG (one or more MG items rated ≥ 2; two or more normal grief items rated ≥ 3). 1 student endorsed UCLA-RI and UCLA-GSS scores below clinical cut-offs, but was interviewed at school staff’s recommendation 	C2. 25 students did not complete the individual interview <ul style="list-style-type: none"> 22 students endorsed PTS and MG reactions below clinical cut-offs and were not invited to advance 2 students were not invited to advance due to frequent absences that obstructed assessment and were likely to impact group attendance 1 student was invited to advance, but did not assent to continue
D. Individual Interview: 64 students completed semi-structured individual interviews	
D1. 49 Students were invited to participate in TGCTA	D2. 15 students were not invited to participate in TGCTA <ul style="list-style-type: none"> 1 was referred for intensive services 1 was already receiving treatment 8 did not evidence severe distress 5 did not fit well with treatment aims and/or were not comfortable with the group format
F. Parental Consent to Treat	
F1. 44 students began TGCTA	F2. 5 students did not begin TGCTA <ul style="list-style-type: none"> 2 students changed schools 3 students’ parents did not consent to treatment
G. TGCTA was implemented from January-June 2012 over 17 sessions	
G1. 33 Students completed TGCTA	G2. 11 students began but did not finish treatment. <ul style="list-style-type: none"> 1 was expelled 10 no longer wished to participate

Figure 1. Trauma and grief component therapy for adolescents (TGCTA) implementation procedure. PTS = posttraumatic stress; UCLA-RI = University of California at Los Angeles Posttraumatic Stress Disorder Reaction Index; MG = maladaptive grief; UCLA-GSS = University of California at Los Angeles Grief Screening Scale.

showed excellent internal consistency ($\alpha = .94$) and moderate convergence with emotional problems ($r = .50$).

Strengths and Difficulties Questionnaire (SDQ). The SDQ (Goodman, Meltzer, & Bailey, 1998) was used to measure emotional problems (e.g., “I worry a lot.”) and conduct problems (e.g., “I am often accused of lying or cheating.”). Students reported their behavior during the last 6 months and its interference in their functioning using a 3-point Likert scale ranging from 0 (*not true*) to 2 (*certainly true*). The SDQ has shown satisfactory internal consistency (emotional $\alpha = .66$; conduct $\alpha = .60$; Goodman, 2001) and test–retest reliability at 4–6 months (emotional $r = .57$; conduct $r = .51$; Goodman, 2001). High SDQ scores predict independently diagnosed psychiatric disorders (Goodman, 2001). In the current sample, both subscales showed acceptable internal consistency (emotional $\alpha = .83$; conduct $\alpha = .62$).

Procedures

Students were referred to be screened for participation in trauma grief component therapy for adolescents (TGCTA; Saltzman et al., *in press*). TGCTA is a flexible, modularized, assessment-driven intervention specifically designed to address PTS symptoms and MG reactions in adolescents with histories of trauma, bereavement, and/or traumatic bereavement (Layne et al., *in press*). A growing evidence base has supported the utility of TGCTA for a variety of populations and settings (Saltzman, Layne, Steinberg, & Pynoos, 2006). TGCTA and its prototypes have been implemented in a broad range of contexts including those in which youth have been exposed to natural disasters (Cox et al., 2007), postwar settings (Layne et al., 2008) terrorist attacks (CATS Consortium, 2007), juvenile justice settings (Olafson et al., 2016), and econom-

ically disadvantaged communities with high levels of violence (Grassetti et al., 2015; Herres et al., 2017; Saltzman, Pynoos, Layne, Steinberg, & Aisenberg, 2001; Saltzman, Steinberg, et al., 2001).

Referral and assessment procedures. The referral and assessment procedure (see Figure 1) was conducted in compliance with the University of Delaware's Internal Review Board. The university-based research team, a therapy team led by licensed community-based psychologists, and school-based personnel collaborated during all assessment and implementation phases.

Phase 1: Referral-screening. The referral-screening phase took place over 5 months. Recruitment began when therapy teams made formal presentations to school staff that included information about trauma and grief, common PTS and MG reactions, and TGCTA. During this training, school staff members were encouraged to consider emotional and conduct problems as well as changes in behavior or academic performance as potential indicators of PTS and grief reactions. School staff then referred students for screening based on their knowledge (or even suspicion) that the student had a trauma or bereavement history. Consequently, the referral process was quite broad, resulting in a procedure that fell between *universal* and *indicated* levels of screening (Husky et al., 2011). Next, school psychologists, teachers, and social workers referred 168 students for screening on the basis of each student's known or suspected history of trauma or bereavement. Referred students were then given parental consent forms to take home. School staff and members of the therapy team also telephoned the parents of each referred student to describe TGCTA and to answer questions. Parents/legal guardians of 89 students provided consent for screening. These 89 students subsequently completed group screening measures of PTS symptoms, MG reactions, trauma exposure, emotional problems, and conduct problems.

Phase 2: Individual interview. Sixty-six students qualified for an individual interview based on preestablished PTS symptom and MG reaction cutoff criteria (PTS total severity score ≥ 30 ; one or more MG items rated ≥ 2 ; two or more normal grief items rated ≥ 3). Although the therapy team relied primarily on these quantitative criteria to guide invitation to the individual interview, they used flexible inclusionary criteria in some cases; Although meeting criteria, two students were not invited to interview due to frequent absences, which school staff predicted would substantially reduce their attendance at weekly group meetings. Another student refused an invitation to interview. Finally, although endorsing subcutoff PTS and MG, one additional student was interviewed at the school psychologist's request based on her knowledge of the student's trauma and loss history.

Sixty-four students participated in an individual interview with a TGCTA therapist. These interviews focused on further assessing PTS symptoms and MG reactions, evaluating functional impairment, and identifying additional areas of concern. Therapists described TGCTA and evaluated students' willingness to share their trauma or loss narrative with a group of peers. In cases where students had experienced more than one trauma or death, the therapist helped the student select a single event to disclose to the group during treatment.

Forty-nine of the interviewed students agreed to participate in TGCTA. The TGCTA therapy team then telephoned their parents/legal guardians to discuss the screening results, describe TGCTA, and request verbal consent for TGCTA participation. Parents also

signed and returned consent forms. Three students did not receive parental consent to participate in treatment, and two students changed schools between their individual interview and the start of TGCTA, resulting in 44 students who initiated treatment.

Intervention implementation. Teams led by one master's-level graduate student therapist and a psychologist or grief counselor held 17 weekly 50-min sessions of TGCTA. Youth were treated in six groups across three schools between January and June 2012 (see Grassetti et al., 2015; Herres et al., 2017 for further information about program implementation). Of the 44 students who began TGCTA, 33 completed treatment and 11 terminated prematurely (one was expelled, 10 withdrew).

Results

Correlations

Correlations (see Table 1) evaluated associations among PTS symptoms, MG reactions, and additional screening measures (trauma exposure, emotional and conduct problems). All baseline variables correlated positively ($r_s = .36-.72$).

t Tests

Independent-samples *t* tests compared students who were included versus excluded at each assessment phase to answer the question, "How do students who 'screen positive' differ from those who 'screen negative' during the assessment and implementation process?" The first independent-samples *t* test (see Table 2) compared students identified as "at risk" ($n = 65$) to students who were excluded from further assessment following the group screen ($n = 24$). As expected given advancement criteria, at-risk students endorsed significantly higher levels of PTS symptoms and MG reactions than did excluded students. At-risk students also reported significantly higher levels of trauma exposure, emotional problems, and conduct problems, which reflect both significant comorbidity of PTS and MG with other presenting problems and a higher overall level of psychological needs among students who advanced to the individual interview.

A second independent-samples *t* test compared students who were invited to participate in TGCTA ($n = 49$) to students who were excluded after the individual interview ($n = 15$). Compared to excluded students, invited students reported significantly higher levels of PTS and emotional symptoms. In contrast, groups did not differ on trauma exposure, MG reactions, or conduct problems.

Table 1
Correlations Among Variables Measured at Group Screening (N = 89)

Variable	1	2	3	4
1. PTS Symptoms	—			
2. MG reaction	.53*	—		
3. Trauma exposure	.62**	.42*	—	
4. Emotional problems	.72**	.50**	.42**	—
5. Conduct problems	.47**	.37**	.57**	.36**

Note. PTS = posttraumatic stress; MG = maladaptive grief.

* $p < .05$. ** $p < .01$.

Table 2

T Tests Comparing Students Who Were Included or Excluded Following Group Screen and Students Who Were Included or Excluded After Individual Interview

Variable	Group screen (<i>n</i> = 89)			Individual interview (<i>n</i> = 64)			Invited to participate in TGCTA (<i>n</i> = 49)		
	Advanced to Phase 2 (<i>n</i> = 65): <i>M</i> (<i>SD</i>)	Excluded before Phase 2 (<i>n</i> = 24): <i>M</i> (<i>SD</i>)	<i>t</i> ratio (<i>d</i>)	Invited to TGCTA (<i>n</i> = 49): <i>M</i> (<i>SD</i>)	Excluded from TGCTA interview (<i>n</i> = 15): <i>M</i> (<i>SD</i>)	<i>t</i> ratio (<i>d</i>)	Completed TGCTA (<i>n</i> = 33): <i>M</i> (<i>SD</i>)	Attrited from TGCTA (<i>n</i> = 16): <i>M</i> (<i>SD</i>)	<i>t</i> ratio (<i>d</i>)
PTS symptoms	30.65 (15.75)	10.58 (12.48)	6.25** (1.36)	33.33 (15.16)	22.13 (15.53)	-2.49* (.75)	32.85 (15.07)	34.31 (15.78)	-.31 (.10)
MG reactions	12.80 (8.60)	2.46 (7.03)	5.79** (1.27)	13.86 (8.42)	9.33 (8.85)	-1.80 (.54)	12.72 (7.83)	16.19 (9.34)	-1.36 (.43)
Trauma exposure	3.72 (2.20)	1.29 (1.88)	4.80** (1.16)	3.86 (2.30)	3.47 (1.84)	-.60 (.18)	3.18 (1.74)	5.25 (2.72)	-2.78* (1.01)
Emotional problems	4.83 (2.92)	2.06 (2.55)	4.11** (.99)	5.35 (2.83)	3.27 (2.76)	-2.51* (.75)	5.27 (2.83)	5.51 (2.91)	-.28 (.09)
Conduct problems	4.10 (2.27)	2.71 (1.88)	2.67** (.65)	4.07 (2.32)	4.33 (2.19)	.40 (.12)	3.49 (2.14)	5.25 (2.30)	-2.64* (.82)

Note. PTS = posttraumatic stress; MG = maladaptive grief; TGCTA = trauma and grief component therapy for adolescents.

* $p < .05$. ** $p < .01$.

A third independent-samples *t* test compared students who completed TGCTA ($n = 33$) to students who dropped out after invitation to TGCTA ($n = 16$). Students who dropped out had significantly higher levels of trauma exposure and conduct problems than did students who completed TGCTA. Groups did not differ on PTS symptoms, MG reactions, or emotional problems.

Logistic Regressions

Three logistic regressions were conducted to answer the question, "Which screening measures predict whether students will advance through screening, qualify for TGCTA, and complete TGCTA?" The first logistic regression (see Table 3) tested whether PTS symptoms, MG reactions, trauma exposure, emotional symptoms, and conduct problems predicted whether students would advance from group screening to the individual interview, coded as 1 (advanced to interview; $n = 65$) and 0 (excluded from interview; $n = 24$). The model correctly identified 91% of students who advanced, $\chi^2(5, N = 89) = 42.10, p < .01$. MG reactions uniquely predicted advancement from group screening to the individual interview ($OR = 1.17, 95\%$ confidence interval [CI: 1.04, 1.32], $p < .01$). In contrast, PTS symptom severity, trauma exposure, emotional problems, and conduct problems did not incrementally predict advancement from screening to the individual interview.

The second logistic regression (see Table 4) tested the incremental utility of PTS symptoms, MG reactions, trauma exposure,

emotional problems, and conduct problems in predicting whether students would qualify for TGCTA after the individual interview, coded as 1 (qualified for TGCTA; $n = 49$) and 0 (did not qualify; $n = 15$). The model correctly identified 81.3% of students who qualified for TGCTA, $\chi^2(5, N = 64) = 11.17, p < .05$. However, no variables added incrementally to the prediction model over and above PTS symptoms and MG reactions.

Finally, the treatment completion model (see Table 5) tested the incremental utility of screening measures in predicting whether students who qualified for TGCTA would complete, versus drop out of, group treatment, coded as 1 (completed TGCTA; $n = 33$) and 0 (did not complete TGCTA; $n = 16$). The model correctly identified 81.6% of completers, $\chi^2(5, N = 49) = 15.13, p < .01$. Trauma exposure added incrementally to prediction, such that as trauma exposure increased, the likelihood of completing TGCTA decreased ($OR = .59, 95\%$ CI [.38, .92], $p < .05$).

Discussion

Results suggest that students who screened positive into TGCTA groups differed from those who screened negative during each step of the risk screening and referral, individual assessment, and treatment implementation process. As expected, students advancing from the group screen to individual interviews reported higher levels of PTS symptoms, MG reactions, trauma exposure, emotional problems, and conduct problems. This finding served as a validity check for advancement criteria and supports the utility of

Table 3

Predicting Students Advancing On to Individual Interviews ($n = 65$) From Students Excluded From Further Screening Following the Group Screen ($n = 24$)

Variable	<i>b</i>	Odds ratio [95% CI]	<i>SE</i>
PTS symptoms	.06	1.06 [.99, 1.13]	.03
MG reactions	.16**	1.17 [1.04, 1.32]	.06
Trauma exposure	.31	1.36 [.90, 2.06]	.21
Emotional problems	-.03	.97 [.71, 1.33]	.16
Conduct problems	-.10	.91 [.62, 1.33]	.20

Note. CI = confidence interval; PTS = posttraumatic stress; MG = maladaptive grief.

** $p < .01$.

Table 4

Differentiating Students Qualifying for TGCTA ($n = 49$) From Students Excluded From TGCTA Following the Individual Interview ($n = 15$)

Variable	<i>b</i>	Odds ratio [95% CI]	<i>SE</i>
PTS symptoms	.04	1.04 [.98, 1.11]	.03
MG reactions	.06	1.06 [.97, 1.16]	.05
Trauma exposure	.01	1.01 [.69, 1.47]	.19
Emotional problems	.13	1.14 [.85, 1.52]	.15
Conduct problems	-.24	.78 [.55, 1.11]	.18

Note. TGCTA = trauma and grief component therapy for adolescents; PTS = posttraumatic stress; MG = maladaptive grief.

Table 5

Differentiating Students Completing TGCTA (n = 33) From Students Who Were Invited to TGCTA but Dropped Out Prematurely (n = 16)

Variable	<i>b</i>	Odds ratio [95% CI]	<i>SE</i>
PTS symptoms	.06	1.06 [.99, 1.14]	.04
MG reactions	-.06	.94 [.86, 1.04]	.05
Trauma exposure	-.53*	.59 [.38, .92]	.23
Emotional problems	.03	1.03 [.77, 1.40]	.15
Conduct problems	-.23	.79 [.54, 1.16]	.19

Note. TGCTA = trauma and grief component therapy for adolescents; PTS = posttraumatic stress; MG = maladaptive grief.

* $p < .05$.

the group screen in differentiating between students with high versus low mental health needs.

Following the individual interview, students who advanced (i.e., were invited to participate in TGCTA) reported higher levels of PTS symptoms and emotional problems than did students who did not advance. This finding suggests that the individual interview was useful in gathering non-redundant information about PTS and emotional problems that helped to screen out students with lower distress levels. The lack of group differences in conduct problems following the individual interview may suggest that students were not selected based on co-occurring conduct problems.

The lack of between-groups differences in MG reactions following the individual interview stage can be interpreted in either of two ways. First, it could be that the group screen accurately identified all students with MG reactions and that an individual interview was not needed to detect and confirm MG reactions. This interpretation is consistent with results from the logistic regression suggesting that MG reactions are particularly useful predictors of advancing from the group screening to the individual interview phase. An alternate explanation is that the MG reaction measure lacked precision for further differentiating between students with high versus low needs at the individual interview stage. This interpretation emphasizes the need for increased precision in assessing MG reactions beyond the prototype items used. Considerable progress has been made to date in this regard (Layne et al., 2017). Given evidence that bereaved youth with MG benefit from early intervention (Currier et al., 2007), time since death may be explored as an additional inclusionary criterion in future research focused on assessment of MG.

Differences also emerged between students who completed, versus prematurely terminated, treatment. Specifically, students who prematurely terminated reported higher levels of trauma exposure and conduct problems. It is possible that a group treatment setting is less conducive to retaining students with conduct problems, who tend to have difficulties with peer relations. For instance, in a prior study of data (Herres et al., 2017), students with baseline conduct problems benefited less from the narrative construction phase of treatment, which involved disclosing personal information to fellow group members.

We tested the incremental utility of secondary measures (trauma exposure, emotional problems, conduct problems) in predicting which students would advance through screening, qualify for TGCTA, and complete TGCTA. MG reactions were particularly

useful in predicting which students would advance from the group screen to the individual interview, but no other screening measure uniquely predicted advancement. Further, no screening measures (including PTS and MG) uniquely predicted qualifying for TGCTA. Given the moderate to strong relations observed between study measures, this finding could reflect suppressor effects.

As noted earlier, trauma exposure uniquely accounted for an increased likelihood of attrition. This finding replicates and extends literature showing that increased trauma exposure predicts attrition in community-based mental health settings (Jensen et al., 2014; Wamser-Nanney & Steinzor, 2016) to trauma-focused interventions in school settings. It is especially notable that PTS symptoms per se did not account for an increased likelihood of attrition. Two potential explanations arise for this differential predictive utility of trauma exposure over PTS symptoms. One explanation is that measures that require youth to report PTS symptoms in relation to a *single* trauma (i.e., index trauma or trauma that “bothers you most now”) insufficiently capture the extent of PTS symptoms that youth experience in response to multiple traumas. This limitation may have been compounded by the use of a brief trauma screening tool scored via simple summation of *total types* of trauma exposure, rather than a more comprehensive assessment of *multiple exposures to the same types* of events across developmental epochs (e.g., Pynoos et al., 2014). An alternative explanation is that inaccurate identification of presenting problems during the assessment process contributed to attrition among multiply traumatized youth. Not all youth who experience trauma develop PTS symptoms, but trauma exposure increases the risk for a variety of mental health problems in addition to PTS (Copeland, Keeler, Angold, & Costello, 2007). Thus, trauma-focused assessment among youth with significant trauma histories should carefully assess trauma exposure while remaining both *sensitive* to detecting PTS symptoms, MG reactions, and related emotional and conduct problems and *specific* enough to determine whether other interventions (e.g., for behavioral problems or anxiety) should be considered as either alternative or supplementary treatment options (see Layne et al., 2017).

Limitations, Take-Home Lessons, and Directions for Future Research

In conclusion, the TGCTA screening procedure described here offers a strong model for trauma and grief-focused assessment in school settings. Training school staff to recognize PTS and MG, and soliciting their referrals for trauma and grief-focused assessment appeared to be a feasible strategy for promoting a trauma-informed school and future studies may endeavor to evaluate school staff members’ willingness to use this approach. Results show that a group screen enhances the initial identification of mental health needs. An individual interview then facilitates more precise assessment of emotional and PTS symptoms and evaluates whether TGCTA is a suitable approach for students who qualify. Our results also underscore a need for more thorough assessment of trauma exposure. Next, we discuss design limitations and offer recommendations for enhancing trauma-bereavement-informed assessment in schools, especially schools serving high-risk and economically disadvantaged communities.

1. *Reduce false negatives through universal screening and enhanced consent procedures.* One limitation of the current imple-

mentation is that some students who could have benefited from treatment were not referred by school staff for screening. Because school staff tend to report lower rates of child anxiety-related problems than do the youth themselves (Jaycox et al., 2010), soliciting referrals from multiple informants, including youth, peers, and family members, may be warranted in implementation programs that include a referral system. Alternatively, instead of referrals, universal schoolwide trauma screening may promote inclusivity and reduce false negatives. Universal screening has been implemented in other contexts where students faced common traumas (e.g., September 11 terrorist attacks; CATS Consortium, 2007) and may be especially useful in schools serving economically disadvantaged communities where exposure to trauma, bereavement, and traumatic bereavement are widespread.

Another potential loss of students who could benefit from TGCTA occurred between school referrals and group screening when caregivers of nearly half of the referred sample did not provide consent for screening. No data are available regarding whether families actively refused consent or were simply inaccessible. The consequences of active parental consent on participation rates and sample selection biases have been thoroughly described (Esbensen, Melde, Taylor, & Peterson, 2008). A passive consent procedure in which families are informed of universal trauma screening and may opt out could assist in identifying more youth with mental health needs. Comparisons of demographic data from students who participated in TGCTA to students in the general school population suggests that participants came from disproportionately White, non-Hispanic families. Further study is needed regarding whether this discrepancy reflects differences in rates of referral or of consent. Existing studies have linked both economic factors (Huang, Shih, Chang, & Chou, 2007; Klassen, Lee, Barer, & Raina, 2005) and racial-ethnic minority status (Tate, Calderwood, Dezateux, & Joshi, 2006) to lower research consent rates. Further, PTS symptoms tend to be less well recognized in racial-ethnic minority samples (Schwartz et al., 2005). Lack of trust in researchers (Erves et al., 2017), as well as stigma surrounding mental health services and concerns regarding the open sharing of "personal problems" (Sue, Fujino, Hu, Takeuchi, & Zane, 1991), may also have contributed to lower consent rates. Future research can profitably focus on understanding these discrepancies with the goal of improving access for all students with mental health needs.

2. *Reduce false positives and improve screening efficiency by enhancing the specificity of PTS symptom and MG reaction measures.* When completing the UCLA-RI, some students did not endorse trauma exposure but did endorse PTS symptoms. When subsequently interviewed to verify whether they had indeed experienced trauma, most students denied trauma exposure and instead clarified that they had reported distress associated with emotional and conduct problems similar to PTS symptoms. This finding is similar to Jaycox and colleagues' (2010) observation that one third of youth identified as at risk reported general distress or another mental health problem other than PTSD. Disruptive behavior problems may be especially salient for school staff and may thus increase the risk for false positives at the referral stage. Thus, we recommend continuing to improve the specificity of PTS symptom and MG reaction measures to reduce false positives. The field would benefit from evidence-based assessment method, tools, and training that can assist in differentiating between PTS symptoms, MG reactions, normal grief reactions, and related conditions

(Layne et al., in press). This recommendation is underscored both by a historic lack of well-validated tools for assessing MG in bereaved youth (Layne et al., 2017) and by meta-analytic evidence that bereavement-focused interventions are not helpful for all bereaved youth. For example, meta-analyses have demonstrated that both current distress level and time elapsed since death moderate intervention effectiveness (Currier et al., 2007; Currier et al., 2008; Rosner et al., 2010).

3. *Consider targeted treatment engagement, family engagement, and alternative referrals for multiply traumatized youth.* TGCTA attrition may be reduced by treatment-engagement strategies and the use of assessment tools to flexibly tailor intervention for youth exposed to multiple types of trauma and loss (Layne et al., in press; Saltzman et al., in press). Treatment engagement can also be enhanced by using the individual interview for psychoeducation regarding ongoing distress reactions and the role of trauma and loss reminders in reevoking distress, discussing how group treatment can help, emphasizing students' personal strengths that will benefit the group, and strengthening the therapeutic alliance (Saltzman et al., in press). Further, screening data can be used to proactively anticipate and address treatment barriers in the individual interview before group therapy commences (Saxe, Ellis, & Kaplow, 2007). Additionally, therapists can promote engagement and retention during the group composition phase by inviting members who share the same level or type of trauma or loss and by emphasizing these commonalities early in therapy to strengthen group cohesion (Davies, Burlingame, & Layne, 2006). Finally, group implementation can incorporate individual pullout sessions for group members whose extensive trauma histories require in-depth processing of multiple exposures (Saltzman et al., in press).

Given that youth are embedded in complex multilayered social ecologies, interventions that comprehensively integrate home and school contexts may be most helpful, especially for youth who have experienced multiple traumas, have pressing mental health needs, and live in underserved communities. The current implementation requested caregivers' consent through letters and phone calls, but additional efforts may be needed to engage family members in school-based treatment for youth. Researchers have advocated for the active facilitation of client help-seeking by strategically engaging families and youth in services (CATS Consortium, 2007) and we enthusiastically agree. Erves and colleagues' (2017) guidelines for engaging underrepresented groups in research may be especially useful in this regard.

Addressing limitations and building on findings of the current study, future research efforts can compare the effectiveness of alternative treatment options (e.g., individual vs. group format) for students with histories of severe and/or multiple trauma(s) major loss, and/or traumatic bereavement, including potential added benefits of harnessing beneficial group processes (Davies et al., 2006) as well as important exceptions (Layne et al., in press). Students with histories of severe and/or multiple trauma(s) may feel unsafe working in a group setting attended by fellow classmates or may withdraw if they feel that focusing on a single trauma narrative (due to school time constraints) inadequately addresses PTS symptoms that are associated with multiple, potentially ongoing traumatic experiences. These concerns may be addressed through alternative treatment options (e.g., individual format) or by flexibly implementing the TGCTA protocol (e.g., utilizing individual pullout sessions and/or inviting youth's creation of multiple nar-

ratives; Saltzman et al., in press). Although additional research on this topic is necessary, we hope that the TGCTA protocol described here provides a foundation for enhancing procedures to effectively identify, engage, and treat traumatized and bereaved students in the school setting.

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