Characteristics and Predictors for Students Classified with Emotional and Behavioral Disorder Who Have Also Experienced Maltreatment

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Mental, emotional, behavioral, and physical health are interrelated and stem from a set of common conditions (O'Connell, Boat, and Warner, 2009). Adverse childhood experiences (ACEs) is the term given to describe traumatic events that occur before adulthood and may negatively impact a student's long-term mental, emotional, and behavioral outcomes. The landmark Kaiser ACE Study examined the relationships between childhood ACEs and physical health, mental, emotional, and behavioral outcomes in adulthood (Felitti et al., 1998; Anda et al., 2006). Over 17,000 people between 1995 and 1997 received physical exams and completed confidential surveys containing information about their childhood experiences and current health status and behaviors. The ACE study looked at three categories of adverse experience: childhood abuse (i.e., emotional, physical, and sexual abuse); neglect (i.e., including both physical and emotional neglect); and household challenges (i.e., growing up in a household where there was substance abuse, mental illness, violent treatment of a mother or stepmother, parental separation/divorce, or a member of the household in prison). Respondents received an ACE score between zero and 10 based on how many of the 10 types of adverse experiences they had experienced (Centers for Disease Control and Prevention [CDCP], 2019). The ACE study showed dramatic links between adverse childhood experiences and risky behavior, psychological issues, serious illness, and the leading causes of death. For example, people with six or more ACEs died nearly 20 years earlier on average than those without ACEs (Centers for Disease Control and Prevention, 2019). Moreover, 61% of adults had at least one ACE, and 16% had four or more types of ACEs (Merrick et al., 2019).

Since the publication of the ACEs study by the CDCP and Kaiser Permanente over two decades ago, a large body of research has emerged on the association of ACEs with health and well-being across the life span (CDCP, 2019; Jones, Merrick, and Houry, 2019; Merrick et al., 2019). Recently, researchers of the CDCP Vital Signs report examined the associations between ACEs and 14 negative outcomes (Merrick et al., 2019). Data were analyzed from the Behavior Risk Factor Surveillance System (BRFSS) from 2015 through 2017 across 25 states, and ACE questions in the state survey data were used to estimate long-term health and social outcomes in adults that contribute to leading causes of illness and death and reduced access to life opportunities. Key findings from this first-ever analysis of comprehensive estimates of the potential to improve the health of Americans by preventing ACEs include the following. First, adults reporting the highest level of ACEs exposure had increased odds of having chronic health conditions, depression, current smoking, heavy drinking, and socioeconomic challenges like current unemployment, compared to those reporting no ACEs. Second, American Indian/Alaskan Native women, and African American/Black women were more likely to experience four or more ACEs. Third, preventing ACEs could have contributed to reducing the number of adults who had heart disease by as much as 13% (up to 1.9 million avoided cases, using 2017 national estimates), who were overweight/obese by as much as 2% (up to 2.5 million avoided cases of overweight/obesity), and the number of adults with depression by as much as 44% (up to 21 million avoided cases of depression).

Researchers have also examined the prevalence and impact of child maltreatment, comprised of physical abuse, emotional abuse, and neglect. Researchers of the National Survey of Children's Exposure to Violence (NatSCEV) conducted a cross-sectional study in 2011, involving United States telephone interviews with caregivers of children aged one month to 17 years and with youth aged 10 to 17 years. Finkelhor and colleagues (2013) found that 13.8% of youth aged one month to 17 years, who lived in the United States, had experienced maltreatment (abuse and/or neglect) in the last year, and one in four children (25.6%) had experienced maltreatment in their lifetime. Over two years later, the same research team conducted telephone interviews of a representative sample of United States telephone numbers from August 28, 2013, to April 30, 2014. Caregivers of children aged 0 to 9 years old and youth aged 10 to 17 years in 2011 were interviewed using the Juvenile Victimization Questionnaire (Finkelhor et al., 2005) for information about exposure to violence, crime, and abuse. Out of 4,000 children, 37.3% of youth experienced a physical assault in the study year, and 9.3% of youth experienced an assault-related injury. Two percent of girls experienced sexual assault or sexual abuse in the study year, while the rate was 4.6% for girls 14 to 17 years old. Overall, 15.2% of children and youth experienced maltreatment by a caregiver, including 5.0% who experienced physical abuse. Over four out of ten children had more than one direct experience of violence, crime, or abuse, and 10.1% had six or more.

Evidence has linked childhood maltreatment to increased risk for many psychiatric disorders. In nearly a third of cases, psychiatric disorders are attributable to childhood maltreatment. Specifically, researchers have found that childhood abuse contributes to risk for common psychiatric disorders by increasing vulnerabilities to express internalizing and externalizing psychopathology (Keyes et al., 2012). Moreover, childhood maltreatment has a cascading, negative impact on cognition, socialization, and psychopathology, in addition to educational outcomes including school discipline, absenteeism, and academic achievement (Petersen et al., 2014).

Students receiving special education services under the category of emotional and behavioral disorders (EBD; Forness and Knitzer, 1992) are at increased risk for past maltreatment experience, given that these youth experience both significant emotional, behavioral, and social challenges along with academic challenges (Mattison et al., 2012). Indeed, Mattison (2004) found an overall maltreatment rate of 60.4% in 238 students newly classified with serious emotional disturbance (SED), a past federal special education category that was also a forerunner to EBD), which was significantly higher than the rate of 36.0% for 101 comparison students evaluated for, but not labeled with, SED. Some research has also found that maltreatment at enrollment among students labeled with EBD is not a predictive factor (positive or negative) for long-term educational success or failure (Mattison et al., 1998), implying that many children with maltreatment experience benefit from EBD services. Nevertheless, despite these earlier findings of the likely high occurrence of experiencing maltreatment in students recently labeled with EBD, and the promise that these students may benefit from specialized services, there remains a paucity of literature on students classified with EBD who have experienced maltreatment (Del Viscovo, 2013).

Because of this dearth of needed research knowledge, this report will analyze the database used in the aforementioned 8-year prospective study of students newly classified with SED (Mattison et al., 1998). The first purpose of this investigation was to explore baseline characteristics between students with EBD who have experienced maltreatment and those who have not. The second purpose was to explore predictors of long-term educational outcomes for students with EBD who have experienced maltreatment. The professional, programmatic, and research implications of our findings will be discussed.

Method

Participants. This study included 149 students who had been evaluated and subsequently labeled with the special education category of SED, which is a past federal special education category and a forerunner to the current EBD category. Two participants were excluded because of incomplete maltreatment data. All participants were involved in a previous longitudinal study of newly enrolled students classified SED (Mattison et al., 1998). These students received the label of SED through a standardized evaluation procedure by multidisciplinary teams (MDT) that included comprehensive testing and a child psychiatric interview of child and parents. They were classified as SED according to the federal (P.L. 94-142) and state criteria for that category at that time. They began their SED programming between 1982 and 1986 and were followed up in 1993.

At enrollment, the mean age of the 149 participants was 12.2 ± 2.9 years (range = 6 - 16), and the group was predominantly male (84.6%) and Caucasian (89.3%). Their mean socioeconomic level (SES), which is a 7-point scale, was 5.0 (SD = 1.4) which appeared generally consistent for the semi-rural geographic area in which the participants lived. Their mean Full-Scale IQ was 94.6 (SD = 11.7). The average length of follow up was 8 years. The mean duration of SED services in school months that the students had received over time was 37.4 for students who had begun in elementary school and 20.8 for those who had begun in secondary school.

Programming for Youth with EBD. Services were delivered in self-contained classrooms and self-contained schools, all operated by one special education agency. Each classroom contained a certified SED teacher, a trained aide, and 8 to12 students. Classroom hours, token-reinforcement programs, and curricula were individualized to each student's needs. Classroom staff, students, and families were supported by agency psychologists and social workers, and a consulting child psychiatrist. See Mattison et al., 1997, for a more extended description of the SED programming.

Measures and Procedure. At follow-up, the central files for the participants were reviewed for enrollment data (as detailed below), as well as placement data that had been annually updated by the agency. Approval had been granted by the local IRB and the special education agency.

Educational Testing. During the evaluation process for need of SED special education services, IQ had been determined with the Wechsler Intelligence Scale for Children – Revised (WISC-R; Wechsler, 1974). Achievement in reading recognition had been tested with either the Wide Range Achievement Test (WRAT; Jastak, Bijou, and Jastak, 1978) or the WRAT-R (Jastak and Wilkinson, 1984).

Parent and Teacher Checklists. At the time of the student's evaluation for SED services, two measures of behavioral health were obtained that were widely used at the time of the original study. Parents completed the Child Behavior Checklist (CBCL; Achenbach, 1983) and teachers completed the Conners Teacher Rating Scale (CTRS; Trites et al., 1982). The CBCL is a 113-item checklist on which parents rate each item zero to two in children (ages 6 – 18) over the last six months. On the CTRS, the teacher rates the child on 39 items from zero to three for their current functioning in school. Both instruments were judged to have adequate psychometric properties.

Child Psychiatric Evaluation. The child psychiatric evaluation consisted of separate interviews of each student and parent, supplemented by input from the child's school staff, central school file, and educational testing (Mattison, 1993). Psychiatric diagnoses were determined according to operational criteria from the Diagnostic and Statistical Manual of Mental Disorders at the time – DSM-III (American Psychiatric Association, 1980). Its Axis V was also used to rate highest level of adaptive functioning in the past year on a 7-point scale (1 = superior to 7 = grossly impaired). Major diagnostic categories are used in this report rather than specific diagnoses.

Data Analysis. The first set of analyses focused on the identification of any enrollment variables (described above) that significantly distinguished those students with maltreatment experience from those who had not experienced maltreatment, and then their subsequent predictive power. During the psychiatric interview component of their special education evaluation, students and their families and school staff, were queried with questioning (by the MDT social worker and child psychiatrist) for any history of maltreatment experience (past and/or present, primarily physical, sexual, and domestic abuse, and guided by existent definitions) and/or any contact with a child protective agency. (At times this maltreatment component uncovered unreported maltreatment which necessitated referral to the local child protective agency.) Two groups were then formed based on the elicited presence or absence of maltreatment experience.

For the second set of analyses, the participants who had experienced maltreatment were further divided into two groups of successful or unsuccessful educational outcomes based on educational disposition at the time of the completion of their educational services (Mattison et. al, 1997). Successful educational outcome was defined by results such as graduated high school while receiving SED services, returned to general education without SED classification, or reclassification by MDTs into another special education category not indicative of serious emotional and/or behavioral problems. Unsuccessful educational outcome included those who dropped out of school or transferred to a more intensive community treatment program (such as a juvenile justice program or a psychiatric residential treatment facility). Baseline variables were then analyzed for their predictive ability of educational outcomes.

Means are provided with their standard deviation (SD). Group comparisons used a *t*-test for continuous variables and chi-square for dichotomous variables to determine significant differences. Logistic regression analyses were employed to determine the predictive power of significant baseline variables. The accepted level of confidence was $p < .05$.

Results

Enrollment Characteristics for Students Classified EBD Who Experienced Maltreatment.
For the total sample of 149 students, 86 (57.7%) were found to have experienced maltreatment, and 65 (42.3%) did not experience maltreatment. When enrollment characteristics were initially investigated, the maltreatment group overall showed complex emotional/behavioral problems, serious levels of dysfunction at both school and home, frequent verbal and likely reading issues, and noteworthy family stresses in addition to maltreatment experience. This maltreatment group was primarily male and Caucasian, and approximately 12 years old on average. Their mean Full-scale IQ was 95 with lower Verbal IQ, further reflected by 22.5% showing Verbal IQ ≥ 11 points lower than Performance IQ, which is considered a significant difference (Wechsler, 1974). The Reading SS (n=113) was low average and lagged behind Full IQ by 5 points.

Table 1
Comparison of Enrollment Characteristics for Students Classified EBD with and without Maltreatment Experience

Enrollment Variables	Maltreatment Experience (N = 86)	No Experience (N = 63)
Demographics:		
Age (years)	11.9 ± 3.0	12.5 ± 2.6
Male	84.9%	84.1%
Caucasian	87.7%	92.1%
SES Level	4.9 ± 1.4	5.2 ± 1.2
Educational Testing:		
Verbal IQ	93.2 ± 12.8	92.4 ± 12.4
Performance IQ	98.0 ± 12.7	97.7 ± 11.2
Full Scale IQ	94.8 ± 12.4	94.3 ± 10.7
[P>V] ≥ 11	22.5%	31.8%
[V>P] ≥ 11	5.0%	12.7%
Reading SS (n=113)	90.3 ± 17.8	90.7 ± 13.0
Family Stressor:		
Not Living with Both Natural Parents	66.3%	44.4% [a]
Mother without HS Diploma or GED (n=138)	38.7%	39.7%
Either Natural Parent with Psychiatric Disorder	94.0%	65.1% [b]
DSM-III Disorders:		
Any ADHD	32.6%	39.7%
Any Conduct Disorder or ODD	47.7%	36.5%
Any Anxiety or Depressive Disorder	48.8%	50.8%
>1 Disorder	41.9%	39.7%
Past or Present Treatment	43.5%	47.6%
Severity of Emotional and/or Behavioral Problems:		
Parent CBCL T-scores (n=136)		

Internalizing	66.2 ± 9.3	65.9 ± 8.6
Externalizing	72.1 ± 8.4	70.4 ± 7.6
Total Problems	71.9 ± 10.0	70.2 ± 8.7
Teacher CTRS		
Total Raw Score (n=124)	57.4 ± 16.0	57.0 ± 16.3
Clinician DSM-III Axis V		
Raw Score	5.3 ± 0.7	5.1 ± 0.8

Note:
[a] $X^2 (1,149) = 7.07$, $p=.008$
[b] $X^2 (1,146)$, $p<.0001$ (Fisher's Exact Test)

Family stresses, in addition to maltreatment experience, were significant. Two-thirds were not living with both natural parents, and 94% had at least one natural parent with a psychiatric disorder.

The range of DSM-III psychiatric disorders for the maltreated group was balanced between externalizing/behavioral disorders (ADHD, Conduct Disorder, and/or ODD) and internalizing/emotional disorders (anxiety and/or depressive disorders), and comorbidity was common (41.9%). Parent CBCL ratings of emotional and behavioral problems were 1.5 SD above the mean for the broad-band scales of Internalizing and 2 SD above the mean for both Externalizing and Total Problems, while the mean raw score for Total Problems of CTRS was 57 out of a possible 117. The DSM-III clinical rating of severity was in the "poor" range (i.e., 5.3), though the occurrence of any mental health treatment ever was only 43.5%.

However, when the two groups were examined for any significant differences in enrollment characteristics, their profiles differed little. Significant differences were only found for two family stresses: more maltreated participants were not living with both natural parents, and more had at least one natural parent with a psychiatric disorder. Thus, the participants with maltreatment experience did not differ from the non-maltreated participants in demographics or in educational or clinical presentation at the time of enrollment into EBD services.

When the above two significant baseline variables were investigated with logistic regression analysis to predict membership in the maltreatment abused group at the time of enrollment into EBD services, only the occurrence of a psychiatrically ill natural parent was predictive (parameter estimate 1.9761, $p=.0003$, and OR 7.22 (95%CI = 2.50-20.8). However, the concordance rate was only 52.3%, indicating overall limited predictive power.

Enrollment Predictors of Successful Educational Outcome in Students Classified EBD with Maltreatment Experience. The group who experienced maltreatment (n = 86) was divided into one group who showed successful educational outcome after the 8-year follow up period (n = 45; 52.3%) and a second group with unsuccessful outcome (n = 41; 47.7%). Thus, despite their serious dysfunction in school at the time of enrollment, approximately half of the maltreated group went on to a successful educational outcome.

The two groups were then compared on the same enrollment variables that are listed in Table 1. At baseline, the successful group demonstrated the following three significant differences: More common presence of a DSM-III Anxiety and/or Depressive Disorder, younger, and less

significant lag in Verbal IQ (Table 2). Three additional trending differences ($p<.10$) were also noted for the successful group (Table 2): Higher SES along with higher Verbal and Full-Scale IQ scores. No significant differences were found for other family stresses or severity results according to the three different raters.

Table 2
Enrollment Variables That Significantly Distinguished Educational Outcome for Students Classified EBD with Maltreatment (N = 86)

	Educational Outcome			
	Successful (N = 45)	Unsuccessful (N = 41)	t/X^2	$p=$
Demographics:				
Age (years)	11.2 ± 3.1	12.7 ± 2.7	2.35	.02
SES Level	4.6 ± 1.5	5.2 ± 1.4	1.90	(.06)
Educational Testing:				
Verbal IQ	95.6 ± 11.6	90.6 ± 13.6	-1.77	(.08)
Full Scale IQ	97.0 ± 12.1	92.4 ± 12.5	-1.72	(.09)
[PIQ – VIQ] ≥ 11	11.9%	34.2%	FET	.03
Family Stresses:	None			
DSM-III Disorders:				
Any DSM-III Anxiety/				
Depressive Disorder	62.2%	34.2%	6.77	.009
Severity of EBD:	None			

Note. FET = Fisher's Exact Test (two-sided). *P* values in parentheses note trends (<.10)

The above three significant enrollment variables were then studied with logistic regression analysis for their predictive power of successful outcome (Table 3). The presence of a DSM-III Anxiety and/or Depressive Disorder and younger age emerged as significantly predictive, with a concordance rate of 76.0%. To further explain the OR results, the baseline presence of an Anxiety and/or Depressive Disorder increased the chances for a successful education outcome in a student classified by EBD with maltreatment experience by almost 6 times (OR = 5.72). Also, for each year of age younger at enrollment, the chances for a new student with maltreatment experience to have a successful outcome increased by 8% (OR = 0.80).

Table 3
Baseline Predictors of Successful Educational Outcome in Students Classified EBD with Maltreatment (N = 86)

	Logistic Regression Results			
Baseline Variable	Parameter Estimate	*p* value	Odds Ratio	95% CI

Any DSM-III Anxiety or Depressive Disorder	1.7437	.002	5.72	1.95-16.80
Age (years)	-0.2229	.03	0.80	0.66-0.97
[PIQ – VIQ] ≥ 11	-1.2844	.06	0.28	0.07-1.04

Concordance = 76.0%

Discussion

Researchers have not previously examined the academic and clinical presentations at enrollment of students classified EBD who have experienced maltreatment, whether they can be differentiated at that time from fellow students labeled with EBD who have not experienced maltreatment, or whether baseline enrollment variables exist that can predict successful educational outcome for these especially vulnerable students. If such distinguishing factors exist, they could help to improve identification and intervention planning at the beginning of EBD programming. Therefore, the authors of this report analyzed extant data to explore these questions. In this context, the first purpose of this investigation was to explore any significant differences in baseline characteristics between students with EBD who have experienced maltreatment and those that have not. The second purpose was to explore predictors of long-term educational outcomes for students with EBD who have experienced maltreatment. We found several findings that warrant discussion.

First, as expected, the maltreatment occurrence rate of 57.7% in this EBD sample was high, more than four times the past-year rate and double the estimated lifetime rate (26%) found in the general population (Finkelhor et al., 2013). This frequency was also similar to the past finding of over 50% maltreatment in students classified with Behavior Disorders (Sullivan & Knutsen, 2000). Thus, this result further emphasizes for EBD educators that a large percentage of their students will likely have experienced maltreatment at their time of enrollment, and that the training of their teachers should include an adequate working knowledge of maltreatment (beyond that of regular education teachers) to understand and intervene appropriately with such students.

Second, the maltreated group was not well-distinguished at enrollment from the non-maltreated group; that is, only by the family stress indicator of having at least one natural parent with a psychiatric disorder (with a modest concordance rate of 52.3%). Nevertheless, importantly, parental psychiatric disorder is considered as one negative outcome predictor among maltreated children (IOM, 2014), and should indicate to the EBD staff to ensure that the parent is receiving adequate mental health services as part of their maltreated student's comprehensive treatment plan.

Both the maltreated and non-maltreated participants showed noteworthy dysfunction in school, such as verbal and reading lags, a range of psychiatric diagnoses with frequent comorbidity, and serious levels of both internalizing and externalizing problems/diagnoses according to multiple raters; however, the maltreated group was not differentiated by their academic or clinical presentation. In general, they matched the representative profile of any newly classified EBD student for their geographic area. Furthermore, their overall school profile appears common for maltreated children who are not progressing well prospectively (IOM, 2014). Thus, as will be

discussed later, adequate screening at enrollment for maltreatment experience emerges as potentially the most important and practical step to determine if a new student with EBD has experienced maltreatment, and should subsequently be integrated into the student's treatment planning.

Third, despite their serious school dysfunction and their background experience of maltreatment, slightly more than half of the maltreated participants (52.3%) experienced a successful educational outcome after an average eight-year follow-up from enrollment. This is a noteworthy percentage for a category of special education students which at the time was annually showing a dropout rate of 40% or more, the highest among special education categories (Mattison, 2004). This positive outcome finding should be encouraging to EBD educators because of the progress shown by new students, who not only demonstrated marked school dysfunction at enrollment, but also the accompanying presence of maltreatment experience. Indeed, their enrollment level of dysfunction and related need of special education services likely indicated a group of children whose maltreatment effects would lead to at least one poor educational outcome (Coohey et al., 2011).

Furthermore, the general outline of the EBD programming at that time (see Mattison et al., 1997) likely indicates important components that contributed to the positive educational outcome for many of the maltreated students. For example, services were delivered in self-contained classrooms and self-contained schools, all operated by one special education agency. Each classroom contained a certified SED teacher, a trained aide, and 8 to12 students. Classroom hours, token-reinforcement programs, and curricula (delivered both 1:1 and in small groups) were individualized to each student's needs. Classroom staffs, students, and families were supported by agency psychologists and social workers, and a consulting child psychiatrist.

Fourth, the presence of Anxiety and/or Depressive Disorder and of younger age at enrollment emerged as two baseline variables that significantly predicted successful educational outcome within the maltreated students (with good concordance at 76.0%). Thus, the presence of an emotional/internalizing disorder and early identification as EBD indicated enrollment characteristics for those maltreated students who benefited educationally from EBD services. Positive prediction by younger age at enrollment would agree with the general finding of the value of early treatment for maltreated children (IOM, 2014).

However, our finding of positive prediction by an Anxiety or Depressive Disorder at enrollment was in retrospect an incomplete finding, leaving out an important part of the story. That is, our methodology did not sufficiently investigate for the common occurrence in childhood maltreatment of comorbid PTSD symptoms/disorder (a known important mediator toward adverse outcomes; IOM, 2014). PTSD could well have been a large part of the clinical presentation in school which would have responded positively to the generally supportive, safe, and predictable environment that existed in EBD classrooms at that time (as described above). However, the study of PTSD in children and the development of related measures were just beginning at that time and consequently made our methodology incomplete for the adequate investigation of PTSD. For example, reflecting the knowledge base at the time of its publishing in 1980, DSM-III mainly focused on PTSD in adults, and it provided almost no guidance on the diagnosis of PTSD in children (such as symptoms and age-related presentations) or how PTSD should be separated from depression and other anxiety diagnoses in children. Thus, the

occurrence of PTSD as symptoms or a full disorder was not adequately investigated or reported in the original study, which future research with students classified EBD should remedy.

Finally, poorer language dysfunction (as represented by Verbal IQ significantly lower than Performance IQ) was a borderline predictor. *W*hile predictors of overall educational outcome have not been widely investigated for maltreated children, Coohey and colleagues (2011) have found some association with IQ. They examined for the effects of a range of risk and protective factors (hypothesized in the literature to affect achievement) on reading and math achievement over three years in a national sample of 702 maltreated children ages 6-10 years. These researchers found that exposure to domestic violence, poorer daily living skills (using a measure of adaptive behaviors), and lower IQ accounted for 54% of the variance in reading achievement, while chronic maltreatment, poorer daily living skills, and lower IQ explained 39% of the variance in math. Coinciding with the well-established negative effects that maltreatment can have on cognitive development (DeBellis and Zisk, 2014) and with the VIQ finding in the present investigation, the need is underscored to determine and address any cognitive deficits of new students with EBD who have maltreatment history.

Limitations

This archival study did not have maltreatment as the primary focus of investigation. The current report re-examines the abuse data that was originally collected and was undertaken in hopes of advancing the continuing lack of research into students classified EBD who have maltreatment experience. When the original study began in 1982, research on maltreatment was in the nascent stages (i.e., scientific instrumentation was under development) and longitudinal studies (for outcome and predictors) were just commencing (IOM, 2014). Also, the DSM-III (APA, 1980) marked the introduction of PTSD as a disorder with few descriptors for unique characteristics in childhood. Thus, the abuse components of this project were of limited sophistication and breadth, although maltreatment history for every participant was questioned as part of the standard child psychiatric interviewing at the time of evaluation for enrollment.

Future research in maltreated students classified with EBD can now benefit from improved definitional criteria for the different types of abuse and neglect (Gee, 2020; IOM, 2014). Diagnostic criteria for PTSD in children have improved in DSM-V (APA, 2013), as has instrumentation for identifying PTSD symptoms (Strand et al., 2005). More longitudinal studies of maltreated youth have been completed and furnish more knowledge about potential outcome predictors and protectors, as well as impact on specific areas of cognitive, social, and emotional development (IOM, 2014).

Thus, a modern research re-design of the current longitudinal study by EBD researchers could provide much more information to aid EBD educators' understanding at enrollment of their students who have been maltreated, in particular further characteristics of maltreatment experience and secondary responses, and cognitive profiles (especially related to emotional processing and executive function that can affect the ability of the brain to integrate information). Occurrence of PTSD symptoms must be emphasized, as such symptoms may signify that a child is in the process of developing maladaptive responses (i.e., anxiety, cognitive distortions, dissociation, aggression, and/or suspicion) and is at increased subsequent risk for suicidal behavior, substance abuse, and a range of psychiatric disorders (Kearney et al., 2010).

The authors have observed that the original definition of educational success was of practical importance but general (Mattison et al., 1998), and accompanying community treatment was not tracked. New follow-up methodology (using as many time points as feasible during the course of EBD programming) should clarify with appropriate objective measures the ongoing school responses for academic skills, achievement, social interaction, and PTSD and other emotional and/or behavioral problems to determine more specifically what EBD services are and are not accomplishing. Specifics of EBD services should be followed, such as level of intervention, trauma-focused training of EBD teachers, and accompanying trauma-focused interventions within the EBD classroom and student's school. The simultaneous tracking of co-occurring community services is also important as multisector collaborative treatment has been deemed essential (IOM, 2014).

Implications

Several practical implications will be discussed under two categories: professional and programmatic.

Professional Implications. We begin with professional implications targeted at educators of maltreated students with EBD. First, further demonstration in this study of a high occurrence of maltreatment (almost 60%) in students newly enrolling in EBD services re-emphasizes the need for universities and professional development providers to include appropriate working knowledge of childhood trauma for EBD teachers. Basic current knowledge of what teachers of students with EBD should know about their students who have experienced maltreatment should be mandatory. In particular, pre- and in-service professional learning for educators who serve youth with EBD should include resources like the Child Trauma Toolkit for Educators (National Child Traumatic Stress Network, 2008), books and chapters targeting specialized supports for students from backgrounds of trauma (Rivera, 2012; Rossen and Hall, 2013), and descriptions of successful school-based groups for children who have witnessed community or domestic violence, e.g., Cognitive Behavioral Intervention for Trauma in Schools or CBITS (Stein et al., 2003).

The second professional implication is that youth with EBD should receive trauma-responsive care not only in the community (with their parents), but also in their EBD classrooms. Thus, in addition to the basic working knowledge about students who have experienced maltreatment that we have mentioned earlier, teachers of students with EBD will require more extensive knowledge about interventions that complement trauma-focused cognitive behavioral therapy (T-F CBT) that their students will be receiving through community services, which will ideally require parallel application by their EBD teachers in school. T-F CBT is the strongest evidence-based treatment to date for maltreated youth (IOM, 2014). The informative book on treatment application of T-F CBT (Cohen et al., 2012) explains both assessment and intervention protocols of which teachers of students with EBD must be aware and ready to reinforce as their students and their parents are being treated by community T-F therapists.

T-F CBT might be best summarized by the acronym PRACTICE: Psychoeducation and parenting skills training, relaxation training, affect expression and modulation training, cognitive coping, trauma narrative development and processing, *in vivo* exposure, conjoint parent-child sessions, and enhancing safety and future development. Advancement through the sequence is

gradual and flexible, and reinforced by the parents practicing at home as well as the therapists modeling during sessions. Thus, ideally, EBD teachers would be working in sync with and reinforcing what students and their parents are learning, in particular the first four steps P-R-A-C. Other approaches might conflict with what their students are bring coached to do during T-F CBT and might confuse their students and disrupt progress.

The third professional implication is to increase educators' knowledge of social and emotional learning (SEL) strategies to aid in their delivery of trauma-informed care. The authors of this study suggest that students may benefit from educators' knowledge and utilization of specific evidence-based strategies focused on relationship building to enhance the educational experience, and resultant outcomes, of this population. The Centers for Disease Control and Prevention (2019) indicated that safe, stable, nurturing relationships and environments are essential for preventing child maltreatment (e.g., ACEs). As such, specific SEL strategies also may improve outcomes for students labeled with EBD who have experienced ACEs related to maltreatment. A body of experimental research has identified common SEL strategies, called kernels of behavioral influence, that are effective in building nurturing environments and relationships and affecting specific behavioral changes (Jones, 2017; Embry, 2002, 2004, 2008). Many kernels, including response cost, precision requests, and verbal praise are specific high-leverage behavioral practices found to have a positive impact on students with EBD (Bailey et al., 2019; Cook et al., 2003; Sutherland et al., 2019). Integration of these kernels may likewise promote social and emotional health in the vulnerable population of students who have endured past maltreatment focused upon in this study.

Programmatic Implications: In addition to professional implications, we also propose several programmatic recommendations for maltreated students with EBD. First, the enrollment process for a new student classified EBD should include a step to identify students who have experienced maltreatment so that their EBD teachers can better understand and intervene with them appropriately. This study did not find that baseline factors which were examined for were that helpful in distinguishing students newly labeled EBD who had experienced maltreatment from those new students who had not. Therefore, at this point the ascertainment of maltreatment exposure relies on MDTs or EBD clinical staff paying special attention during the evaluation/enrollment process to records they review, available functional behavioral analyses that should include a survey of distal or permanent factors such as maltreatment, and communication with referring school staff, as well as raising the topic of maltreatment experience with referred students and their families. To further assist in the specific questioning process for experiencing maltreatment and/or other important traumatic events, a screening instrument such as the Adverse Childhood Experiences (ACE) (Felitti et al., 1998) or the Traumatic Events Screening Inventory (TESI) (Edwards et al., 1996) could be used with both students and families.

Second, programmatically, after enrollment, students with known maltreatment experience should be sensitively assessed for PTSD symptoms (such as intrusive distressing memories, flashbacks, dissociation, and irritability), which can clarify their possible role in a student's current school dysfunction, i.e., in the emotional and/or behavioral problems they are showing in school. Identification of such specific PTSD symptoms can help the teachers of students labeled with EBD understand some of a new student's emotional and behavioral reactions, and to individualize interventions accordingly. To help with PTSD assessment after the occurrence of

trauma experience has been determined, the EBD clinical member could use an instrument such as the UCLA PTSD Reaction Index (Steinberg et al., 2004) to obtain a baseline of PTSD symptoms and then monitor regularly. In addition, an early FBA (if one has not been completed) may further clarify an emotional/behavioral problem's relationship to maltreatment. Thus, instructors of EBD teachers must ensure that as part of their trainees' working knowledge of maltreated students, they know how targeted assessments for maltreatment experience and PTSD symptoms should be conducted for their new students.

Third, programmatically, teachers of students labeled with EBD and with maltreatment experience will likely need to work with either a team member or a specialist of the special education agency (Farmer et al., 2016) who has substantial background in TF-CBT and could serve as an intermediary between the teacher and a community TF therapist, or who could coach EBD teachers for those maltreated students without community therapists. Optimally, communication should occur with the community TF therapist to understand what the therapist is learning about the student's reactions at each step of the treatment protocol, which could in turn help the teacher and EBD staff further understand contributions from the student's trauma experience that are affecting classroom actions (e.g., triggers as well as withdrawal/dissociation reactions). As the teacher learns what coping techniques the student is being taught, these could be reinforced in the classroom, much like the parent is doing at home. Finally, the teacher could provide ongoing feedback to the community therapist, in particular whether the student is understanding and practicing what is being taught in the TF therapy, and whether the parent is reinforcing the student as well as reducing stresses in the home.

The fourth programmatic implication relates to the borderline predictive finding of deficits in Verbal IQ, which agrees with findings of other longitudinal studies of maltreated children. This result emphasizes the need to identify in students with EBD and maltreatment experience any associated cognitive deficits that must be addressed and monitored, especially language, attention, and executive function that have not only been identified as consequences of maltreatment (De Bellis & Zisk, 2014), but also involved in the development of learning disabilities (Catts et al., 2006). They have also been shown to frequently occur in students classified as EBD (Mattison et al., 2009).

Substantial evidence exists that explicit instruction is a powerful tool available to teachers seeking to improve the academic outcomes of students with EBD (Nelson et al., 2008). Explicit instruction is an unambiguous, direct approach to teaching with an emphasis on providing students a clear statement about what is to be to be learned, proceeding in small steps with concrete and varied examples, checking for student understanding, and achieving active and successful participation of students (Baker et al., 2010; Carnine & Kame'enui, 1992; Nelson et al., 2008; Rosenshine & Stevens, 1986). More specifically, reviews of the reading literature for students with EBD identify moderate to large effect-size estimates for both group and single-case studies and reading interventions delivered via core, explicit, supplemental, and individually (Author et al., 2010; Garwood, 2018; Nelson et al., 2011). Given the impact of cognitive deficits such as language, attention, and executive function on successful outcomes for youth with EBD, we recommend explicit reading and language instruction. There is growing evidence that students with EBD are responsive to effective language and reading instruction (e.g., Gresham, 2015; Lane et al., 2001, 2007; Nelson et al., 2005; Rogevich & Perin, 2008; Sanders et al., 2019; Scott & Shearer-Lingo, 2002; Staubitz et al., 2005; Strong et al., 2004; Wehby et al., 2003).

The fifth and final programmatic implication is to implement a structured youth mentoring approach to provide another outlet for positive adult relationships and to longitudinally track and support positive school outcomes and home life (e.g., monitor for recurrence of maltreatment and/or PTSD symptoms) for students with EBD and a history of maltreatment. This approach would provide a long-term framework for ensuring that both current and future school staff are aware of these students' unique needs and provide individualized responsive supports to promote academic, social, and emotional well-being. One exemplar program that could be modified to fit the needs of this specific population is the Check & Connect program, an evidence-based and comprehensive K-12 student engagement intervention (Institute on Community Integration, 2020). Among dropout prevention interventions reviewed by the U.S. Department of Education's What Works Clearinghouse, Check & Connect is the only program found to have strong evidence of positive effects on staying in school (Institute of Education Sciences, 2015). To date, findings from three randomized trials and four replication studies of K-12 students with and without disabilities have indicated the success of this program (Anderson et al., 2004; Kaibel et al., 2008; Lehr et al., 2004; Sinclair et al., 1998; Sinclair et al., 2005; Sinclair & Kaibel, 2002). This program relies on a monitor, whose primary goal is to promote regular school participation and to keep education a salient issue for students, parents, and teachers. The monitor extends the school's outreach services to the student and family in an effort to better understand the circumstances affecting their connection to school and works with them to overcome barriers that have kept them estranged from school and learning. The "check" component is designed to facilitate the continuous assessment of student levels of engagement with the school and to guide intervention. The "connect" component includes two levels of student-focused interventions developed to maximize the use of finite resources: *basic intervention,* which is the same for all students, and *intensive interventions,* which are more frequent and individualized, with student needs dictating what specific intervention strategy is used.

Finally, as has been noted throughout this report, more research is needed to focus on those students labeled with EBD who have experienced maltreatment, especially to improve and grow the working knowledge for EBD teachers of such students. While this study and its results should be considered as a first-step, they appear to indicate that EBD programming can positively contribute to the educational success of some maltreated students, even though they originally showed a degree of school dysfunction that necessitated special education services. In conclusion, the authors of this study pose further questions to guide directions for future research in this area: For which students with a maltreatment background is EBD programming helping to stabilize the deterioration of cognitive and PTSD issues and thereby reducing/reversing impairment and enabling more educational success? Which of these students most benefit from collaborative work by knowledgeable EBD teachers with TF therapists? When should maltreated students who already show noteworthy school dysfunction in regular education be evaluated for EBD services? What specific instructional strategies are effective in promoting both academic and socio-emotional outcomes for this particular subset of students with EBD?

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