

RUNNING HEAD: THE IMPACT OF EMOTIONAL ABUSE ON PSYCHOLOGICAL

The Impact of Emotional Abuse on Psychological Distress among Child Protective Services-
Involved Adolescents with Borderline-to-Mild Intellectual Disability

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Abstract

Childhood maltreatment is a robust contributing factor to mental health problems in adolescents. The current study examines the impact of childhood emotional abuse on adolescent psychological distress in 48 youths with borderline-to-mild intellectual disability (ID), as compared to 117 peers with average intellectual functioning. Both emotional abuse and intellectual functioning predicted the severity of youth psychological distress. Childhood emotional abuse has an impact on adolescent distress, and maltreated child welfare-involved youth with lower IQ levels may be more vulnerable to distress than youth with average IQ. This raises a question regarding the detection of subtle manifestations of ID and the need to attend to mental health within this sub-population receiving child welfare services.

Keywords: child abuse, child maltreatment, IQ, intellectual disability, mental health

The Impact of Emotional Abuse on Psychological Distress among Child Protective Services-Involved Adolescents with Borderline-to-Mild Intellectual Disability

Child maltreatment is a potentially long-term impairing condition brought on by the care-providing environment. Its impact ranges broadly from physical health (e.g., obesity) to mental health problems (Gilbert et al., 2009). To date, studies have focused on maltreatment as a unitary construct (see Arvidson, 2011, for research on maltreatment). When types are considered, the focus has been on sexual and physical abuse, which may be more clearly defined in injury terms (see Olafson, 2011, for research on child sexual abuse). Building evidence suggests that emotional abuse exerts a unique negative impact on child, adolescent, and young adult functioning (Yates & Wekerle, 2009), and needs to be considered further as a distinct type of maltreatment, albeit one that often overlaps with other forms. In Canada, emotional abuse has catapulted to the most common primary form of maltreatment among child welfare populations, accounting for about 40% of substantiated cases, including where emotional harm may be indirect (e.g., exposure to intimate partner violence) or directed towards the child (e.g., denigrating, inappropriate punishment as with lengthy time-outs or spanking an adolescent, etc.; Trocmé et al., 2005; see Swartz, Graham-Bermann, Mogg, Bradley, & Monk, this issue, for research on children exposed to intimate partner violence). Emotional maltreatment is acknowledged as a common event across childhood. To meet child welfare thresholds for intervention, it would need to be defined as high frequency, chronic, a direct cause of victim mental health problems, or coinciding with some degree of child vulnerability (e.g., infant or young child within a volatile domestic violence context; Ontario Child and Family Services Act, 1990; Wekerle, MacMillan, Leung, & Jamieson, 2008). However, age is not the only means for defining a more vulnerable victim. One factor that has not been considered is youth with mild

cognitive deficits. In the context of home chaos and violence, caregivers may not notice that a child has a mild cognitive impairment or may not consider the impact that such impairment can have for coping with victimization. Such youth, who generally feel less empowered and more readily overwhelmed, may find the unpredictable violence to be more threatening and psychologically disturbing. Youth with intellectual disabilities (ID) may experience more emotional abuse, being an easy target for ridicule, and less well-equipped at preventive action to protect against violence exposure (Home, Merz, & Merz, 2001).

Overall, impairment associated with maltreatment is considered to be an interplay among the child's individual strengths and weaknesses, the maltreatment experience, and the broader environmental contexts, which adapt dynamically with changing environmental and individual developmental demands. Person-environment interactions provide a framework for understanding congruence between the person and the environment, such that incongruence would be expected to lead to instability (Neufeld et al., 2006). One would expect that a person-environment interaction would be more prominent when the environment holds stable, as would be expected with certain types of maltreatment that are reflective of a type of parenting style (e.g., emotionally abusive), as compared to those tied to particular events, such as in the case of physical abuse (e.g., perceived misconduct and discipline context) or sexual abuse (e.g., proximity to perpetrator, or access to victim; Stevens, Ruggiero, Kilpatrick, Resnick, & Saunders, 2005; Trocmé et al., 2005). That is, emotional maltreatment tends to reflect a household climate of hostility (e.g., frequent denigrations to the child), and hostile, coercive and aggressive interactional style (e.g., being exposed to domestic violence). Although parental personality and child temperament "fit" has been identified (Wekerle & Wolfe, 1998), a limited

range of victim characteristics has been considered, especially within the adolescent developmental frame.

For instance, intellectual functioning is often found to be a robust protective factor contributing to positive outcomes in maltreated youth (Heller, Larrieu, D'Imperio, & Boris, 1999; Herrenkohl, Sousa, Tajima, Herrenkohl, & Moylan, 2008), and has been considered as a key individual resiliency factor. Other individual characteristics thought to contribute to resilience, to some degree, relate to a child's intelligence level, capturing conceptual, social, and school performance factors (e.g., an internal locus of control for positive events, high self-esteem, a strong commitment to school, a mentoring relationship with a caring adult, and good problem solving and social skills; Cicchetti, Rogosch, Lynch, & Holt, 1993; Garmezy, 1985; Garmezy & Rutter, 1983; Herrenkohl et al., 2008; Moran & Eckenrode, 1992; Rutter, 1983). Youth with ID also struggle with the social cognition element of relationships (Evans, 1998; Levy-Schiff, Kedem, & Sevilla, 1990; Widaman, Macmillan, Hemsley, Little, & Balow, 1992). Adolescents with ID likely have greater dependence on caregivers, less control over their lives, tendencies to follow and seek approval from others, and less age-appropriate knowledge about sex and social norms than average IQ peers, which places them at even greater risk of further victimization (Hershkowitz, Lamb, & Horowitz, 2007).

As lower intellectual functioning can be more prominent in socioeconomically disadvantaged families (Emerson & Hatton, 2007; McConnell, Matthews, Llewellyn, Mildon, & Hindmarsh, 2008), and such families are more visible to child protective services (Butchart, 2008; Coulton, Crampton, Irwin, Spillsbury, & Korbin, 2007), ID represents an under-attended victim characteristic that may impact the level of maltreatment-related impairment. In a population study of youth (up to 21 years of age) in Omaha, ID was identified in 25.3% of all

maltreated youth with disabilities, second only to behavioral disorders (at 37.4% of all maltreated students with disabilities; Sullivan & Knutson, 2000). A study of Canadian child protective services (CPS) cases found that children with ID made up 8.68% of all maltreatment cases, three times greater than what would be expected based on the prevalence of developmental delay in the general population (Fudge Schormans & Brown, 2003). Fuchs, Burnside, Marchneski, and Mudry (2007) examined substantiated cases of child maltreatment in Manitoba and found that one third ($n = 1,869$) of children in care had a disability, and that ID was the most frequently occurring type (75.1% of cases).

Within intellectual disability, youth with borderline-to-mild degrees of ID represent an understudied group, as they are less salient than youth with complex special needs. Youth with severe ID are identified earlier than those with borderline-to-mild ID (who may not be identified at all), and thus obtain services earlier, or to a greater extent (Vig & Kaminer, 2002). The types of deficits found in youth with borderline-to-mild ID may only emerge in the elementary school years. Without being identified, parents of youth with borderline-to-mild ID may misattribute behavior as wilful defiance, “provoking” hostile and potentially abusive discipline (Bugental, 2004). Parents of these youth have more uncertain expectations and may be less tolerant of their children’s behavior, as compared to parents of youth with severe ID (Benedict, White, Wulff, & Hall, 1990). It is unclear whether, and at what level, youth with ID are disadvantaged or advantaged in terms of coping with their traumatic backgrounds, as compared to non-ID youth (Bowers-Andrews & Veronen, 1993; Mansell & Sobsey, 1996; Tharinger, Horton, & Millea, 1990). Youth with ID may struggle to understand their maltreatment experiences, and may not have perceived as many of the details and implications of their maltreatment. Maltreatment may

be more confusing and destabilizing to youth with ID, who would respond positively to structured, predictable, and stable home experiences.

There are two pathways that may link such disability with maltreatment: (a) Youth with ID may represent a poor fit with the limited parenting skill and stress tolerance of the maltreatment-prone parent, yielding a greater likelihood of maltreatment (Fudge Schormans & Brown, 2003; Govindshenoy & Spencer, 2007; Sobsey, 1994; Sullivan & Knutson, 2000) and (b) ID may arise from the maltreatment episodes (e.g., head trauma; Lowenthal, 1998) and reduced access to health promotion activities (e.g., low parent-child verbal interaction and cognitive stimulation in the home environment; Bigelow, 2006; Fudge Schormans & Sobsey, 2007; Henry, Sloane, & Black-Pond, 2007; Hyter & Way, 2007). Maltreating families, overall, do not tend to adopt the “parent-as-educator” role (Fiese, Eckert, & Spagnola, 2006), and tend to allow higher rates of school truancy (Kendall-Tackett & Eckenrode, 1996; Scherr, 2007). Evidence for a differential pattern of cognitive and academic ability across types of maltreatment is mixed, with some large scale studies finding no difference in performance between physically abused, sexually abused, and neglected youth (Crozier & Barth, 2005), and others finding that neglect appears to have had a more substantial influence than abuse (Eckenrode, Laird, & Doris, 1993).

With most mental illness having an adolescent onset (Jaffee, Caspi, Moffitt, Polo-Tomás, & Taylor, 2007; Kessler et al., 2005; Lansford et al., 2002), evaluating the relationship between childhood maltreatment and adolescent mental health among borderline-to-mild ID adolescents involved in CPS is an underattended, but important area of inquiry. Ammerman, Van Hasselt, Hersen, and McGonigle (1989) found that out of 150 children and adolescents with ID consecutively admitted to an inpatient psychiatric hospital (between 3 and 19 years of age), 39% had experienced or suspected maltreatment. Physical abuse was the most frequent type of

maltreatment, followed by neglect and sexual abuse; however, emotional abuse was not assessed. Balogh and colleagues (2001) reviewed the cases of victimization and perpetration of sexual abuse by child and adolescent psychiatric inpatients with ID over a five-year period (9 to 21 years of age). Fourteen percent of patients were found to have substantiated cases of sexual abuse, and the issue of sexual abuse was often identified after admission. Half of victims were abused by a member of their close or extended family, and 62% were adolescents at the time of abuse. In their secondary analysis of data from the 1999 and 2004 British Office for National Statistics surveys (which included over 18,000 children), Emerson and Hatton (2007) found that of the 3.5% with ID ($n = 641$), 36% had a diagnosable psychiatric condition according to International Classification of Diseases-10 criteria, as compared to 8% for youth without ID. Youth with ID had significantly greater chance of having an anxiety, depressive, or oppositional/behavioral disorder, as compared to youth without ID. Although rates of emotional and behavioral disorders were associated with social/environmental risk factors (e.g., poor family functioning, income poverty, exposure to two or more negative life events) for both groups of youth, the risk factors occurred more frequently for youth with ID.

The impact of caregiver emotional abuse on adolescents with ID has yet to be examined (Conway, 1994; Nesbit, 1991). In cases where a child who already lags cognitively experiences an underengaged and emotionally abusive home environment, cognitive delays can be exacerbated by a lack of opportunities to learn at the same rate as nonmaltreated peers. Further, for maltreated youth who become CPS involved, frequent residential and school moves can provide further impediments to gaining lost learning ground. This is especially true for those with borderline-to-mild ID, who would otherwise function well in inclusive classes with appropriate remediation and support, rather than requiring special class placement or alternative

school environments (Eckenrode, Rowe, Laird, & Brathwaite, 1995; Larson, 2009; Shea, Zetlin, & Weinberg, 2009). Outside of the home, adolescent foci, such as peer relations, increasing autonomy, and romantic relationships, may yield greater levels of proximal distress for adolescents with ID and may represent a time of higher risk for mental health problems. The impact of emotional abuse experienced in the home may be compounded when other stigmatizing experiences occur, such as repeated failures in academic and social domains (Mansell, Sobsey, & Moskal, 1998; Reiss & Benson, 1984; Zigler & Hodapp, 1986).

The importance of examining maltreated youth in CPS cases is that these youth may have a combination of poorer environmental contexts for supporting learning and have multiple types of maltreatment. With CPS involvement, while severe ID is likely to be noted, borderline-to-mild ID may not be detected or be a prompt for formal evaluation. Consequently, the opportunity to provide ameliorative intervention may be missed. Further, if detected as a learning issue, the less verbal ID youth may not have their mental health issues addressed because they may struggle to articulate feelings and worries to caseworkers unless prompted. Individuals with borderline-to-mild ID are able to accurately report their overall experiences of distress and their internal states (Aman & Rojahn, 1994; Finlay & Lyons, 2001; Nadarajah, Roy, Harris, & Corbett, 1995; Prosser & Bromley, 1998), and many traditional self-report measures can be completed by adolescents and adults with this mild level of impairment (Finlay & Lyons, 2001), especially when the measures consist of multi-trait items that reflect overall global distress (Kellett, Beail, Newman, & Mosley, 1999). For example, the global indices of the Brief Symptom Index (BSI; Derogatis, 1994) have discriminated amongst community and clinical samples of adults with mild ID (Kellett, Beail, Newman, & Frankish, 2003), and have been

characterised as “clinically and empirically indispensable global indices of psychopathology” in a recent factor analysis with this population (Kellett, Beail, Newman, & Hawes, 2004, p. 280).

The current study aims to examine CPS-involved adolescents who range in IQ and to consider the person-environment interaction, focusing on the impact of emotional abuse. Based on a review of the literature, it is hypothesised that CPS-involved adolescents with intellectual functioning in the range of borderline-to-mild ID will report greater proximal psychological distress than their counterparts with average intellectual functioning. Based on recent evidence, we test whether emotional abuse interacts with intellectual functioning in predicting adolescent psychological distress, controlling for socioeconomic disadvantage and CPS factors.

Method

This article used data from the Maltreatment and Adolescent Pathways (MAP) Longitudinal Study, which randomly sampled adolescents with open CPS cases over a two-year timeframe (for other MAP study reports, see Wekerle, Leung, MacMillan, et al., 2009; Wekerle, Leung, Goldstein, Thornton & Tonmyr, 2009). Ethical clearance was obtained from CPS agencies and university research ethics boards. The current study identified youth with data available to consider ID. As a preliminary study in this area of research gap, MAP participant scores on an intelligence screening measure were used to select the majority group (average IQ) and a contrast group (borderline-to-mild ID). The MAP study follows teens, aged 14.0 to 17.0, over three years, testing them every six months. Although the initial testing is closed, testings thereafter are ongoing. The Kaufman Brief Intelligence Test (KBIT) was administered at the 1-year follow-up mark mainly by psychology doctoral students, who were trained and supervised by PhD-level psychologists. Most of the MAP study tasks, including KBIT scores, were transmitted (via laptop) at the testing site (typically the youths’ residence), where the data were

directly synchronized to a database accessed via cellular internet connection, and securely hosted on a local server, as an effort to maximize privacy and identity protection.

To overview the MAP selection process, youth were drawn via random numbers table from area CPS agency-provided master lists of all active cases aged 14.0 to 17.0, with information restricted to youth basic demographics and caseworker name, drawn from an Ontario, Canada, city centre. The first point of contact was the CPS agency staff liaison, who checked the case status (given the time lag from acquiring lists of active files to random selection to communication back to the CPS liaison), and if still open, connected with appropriate caseworkers. The caseworker first assessed the selected youth's possible ineligibility for involvement in the study, which included unmanaged or crisis-level mental health and residential permanency issues, as well as severe developmental disorder and disability that would impair the youth's ability to independently complete about two hours of assessment. At this point, 56% of CPS-involved youth who were randomly selected for initial involvement in the study were ineligible, mainly due to the case file being opened and closed over a very short period of time (i.e., less than six months – 58% of ineligible youth). Severe developmental delay (12% of ineligible youth) and substantial mental health issues (9%) were the next highest reasons for youth being considered ineligible to participate in the study. Caseworkers approached all those youth deemed eligible with a research opportunity (brief standard script) and obtained consent for MAP research staff to call the youth and provide more information about the study. A subgroup of the caseworkers ($n = 303$) completed a background information form on participating youth, indicating substantiated and risk of maltreatment. The recruitment rate was about 70%, with refusals mainly due to youth stating that they were “too busy” to participate. The rate of parents refusing to allow their children to participate in the study was relatively low (5%). In

comparing demographic differences between MAP study participants versus non-participants, no significant differences emerged on youth age, gender, or type of maltreatment. However, there was a significant difference in terms of out-of-home care ($\chi^2 (1, N = 560) = 112.02, p < .001$), with more youth coming from long-term, Society ward (adjusted residual = 7.1), and permanent care, Crown ward (adjusted residual = 4.0) categories¹ and fewer youth residing with their birth families (adjusted residual = -8.9). Youth were paid \$28, given refreshments, and reimbursed for any travel. Most youth (80%), though, elected to be tested in their place of residence.

Participants

Complete KBIT data were available for 251 youths; 14% ($n = 36$) had verbal IQ/performance IQ discrepancies that were noted as significantly large and clinically important (24 points or greater) according to the KBIT manual (Kaufman & Kaufman, 1990) and were removed from analyses, leaving a sample size of 215 youth. For this analyses, caution was exercised in terms of questionnaire completion validity; 46 youth received a Childhood Trauma Questionnaire (CTQ) Minimization-Denial score of one or greater and were removed from the sample (D. Bernstein, personal communication, July 26, 2009), leaving 169 youth.² To compare youth with borderline-to-mild ID to those with clearly average intellectual functioning, youth with IQ composite scores between 60 and 84 were identified as being in the borderline-to-mild IQ group ($n = 48$), with 40% of those youth having scores between 60 and 70, in the range of

¹ In the province of Ontario, Canada, CPS-involved youth are classified as either a: (1) Crown Ward through an order of the court, wherein the CPS agency is the legal guardian. Parents may seek access (i.e., visitation or contact) to their child who is a Crown Ward through a court application; (2) Society Ward, which refers to children & youth who are placed in the care of CPS by a court order for a period of less than 12 months; (3) Temporary Care Ward, where a child or youth may be the subject of a temporary order of care and custody or in care through a temporary care agreement, whereby they are brought into care at the request of or with the co-operation of his/her parents; (4) Community Family, wherein the CPS agency becomes involved to help a family while the youth remains in the custody of the family.

² The CTQ Minimization-Denial Scale point is given if a participant notes *Very Often* to any the following items: “There is nothing I wanted to change about my family”, “I had the perfect childhood”, and “I had the best family in the world.”

mild ID. Youth with IQ scores between 85 and 115 were placed in the average IQ group³ ($n = 117$).

Demographic characteristics for this MAP sub-sample are listed in Table 1. The average age at MAP entry was 15.8 years ($SD = 1.02$; 41% boys), which included diverse ethnicity (youth-identified ethnicity: 28% White only, 20% Black only, 38% reporting multi-ethnicity; and 18% other). Most youth (80%) were Crown Wards. On average, youth were engaged in CPS for 6.4 years ($SD = 4.1$), had an average of 3.1 CPS workers ($SD = 1.41$), and moved homes and schools about three times ($SD = 3.0$). Youth in the borderline-to-mild IQ group reported having fewer computers and cars in their homes than youth in the average IQ group, $t(156) = -2.07, p = .05$, $t(156) = -1.98, p = .05$, respectively. There were no significant group differences in age, gender, CPS involvement, type of residence, or other socioeconomic indicators (e.g., mother figure or father figure education levels, percent of caregivers who owned their own home). As expected, the borderline-to-mild IQ group had significantly lower composite, verbal, and performance IQ standard scores than youth in the average IQ group (all $p < .001$).

[Insert Table 1 Here]

Measures

IQ: KBIT. To estimate IQ, the norm-referenced KBIT was given (Kaufman & Kaufman, 1990). The KBIT has been shown to have adequate to excellent reliability (split-half = .74-.97, test-retest = .80-.97) and construct validity using other intelligence tests (Kaufman Assessment Battery for Children, Wechsler Intelligence Scale for Children-Revised, and Wechsler Adult Intelligence Scale-Revised) as criteria ($r = .58-.80$; Kaufman & Kaufman, 1990). The KBIT is a brief screening measure that is not meant to substitute for a comprehensive measure of intelligence.

³ There were no participants with composite IQ scores in the High average range (115 – 129).

Maltreatment: CTQ and Childhood Experiences of Violence Questionnaire (CEVQ).

Experiences of childhood maltreatment were assessed via the CTQ (Bernstein et al., 1994). The CTQ uses a standard stem (e.g., "While you were growing up..."), rating 28 items on a 5-point scale ranging from 1 (*never true*) to 5 (*very often true*) across five subscales: Emotional Neglect, Physical Neglect, Sexual Abuse, Physical Abuse, and Emotional Abuse. Three of the 28 questions are validity items and there are five items per subscale. The CTQ does not tap exposure to domestic violence. Two-week test-retest reliability of the CTQ for a MAP youth sub-sample ($n = 52$) was moderate across subscales, Physical Abuse ($r = .64$), Sexual Abuse ($r = .52$), Emotional Abuse ($r = .70$), Emotional Neglect ($r = .63$) and Physical Neglect ($r = .56$), while internal validity was good, Physical Abuse ($\alpha = .92$), Sexual Abuse ($\alpha = .88$), Emotional Abuse ($\alpha = .85$), Emotional Neglect ($\alpha = .87$), and Physical Neglect ($\alpha = .68$). Youth report and worker's rating of childhood maltreatment were significantly correlated in terms of Physical Abuse ($r = .48$), Sexual Abuse ($r = .58$), and Physical Neglect ($r = .26$) but not for the Emotional Abuse or the Emotional Neglect subscales, possibly owing to this jurisdiction including domestic violence exposure as emotional abuse.

Self-report of maltreatment experiences was also assessed with the CEVQ (Walsh, MacMillan, Trocmé, Jamieson, & Boyle, 2008). In contrast to the CTQ, the CEVQ assesses witnessing domestic violence. The CEVQ demonstrates good test-retest reliability (kappas ranging from .61 to .91), and validity, as determined by clinician assessment, with estimates falling in a similar range (kappas for physical and sexual abuse were .68 and .74, respectively). Two-week test-retest reliability of the CEVQ among the MAP youth ranged from moderate to good, physical abuse ($r = .88$), sexual abuse ($r = .71$), emotional abuse ($r = .51$), while internal validity ranged from moderate to high, physical abuse ($\alpha = .82$), sexual abuse ($\alpha = .70$),

emotional abuse ($\alpha = .68$). Three items from the CEVQ were used to reflect experiences of emotional maltreatment, involving witnessing verbal and physical domestic violence and experiencing caregiver verbal violence. Two items were used to reflect physical abuse, including being hit/kicked/punched and choked, burned or physically attacked in another way. Two items were also used to reflect sexual abuse, comprising experiencing unwanted touching of private parts and unwanted sex.

Given the interest in emotional maltreatment, and the challenges in quantifying behaviors at the abuse threshold, emotional abuse was evaluated through a combination of CTQ Emotional Abuse and CEVQ item responses. A summary statistic (Emotional Abuse Composite) was created by adding (a) the level of emotional abuse on the CTQ Emotional Abuse subscale based on category levels provided in the CTQ Manual (Bernstein et al., 1994; none = 0, mild = 1, moderate = 2, severe = 3), (b) the frequency of verbal domestic violence witnessed by youth on the CEVQ (never = 0; 1 to 2 times = 1; 3 to 5 times = 2; 6 to 10 times = 3; more than 10 times = 4), and the weighted frequency (i.e., multiplication by a factor of 2 to reflect greater severity than verbal domestic violence) of physical violence witnessed by youth on the CEVQ (never = 0; 1 to 2 times = 2; 3 to 5 times = 4; 6 to 10 times = 6; more than 10 times = 8). Emotional Abuse Composite scores were correlated with CTQ Emotional Abuse raw scores ($r = .66, p < .001$), CEVQ verbal domestic violence frequency ($r = .68, p < .001$), and CEVQ physical domestic violence frequency ($r = .59, p < .001$). A two-way (Gender x IQ) ANOVA confirmed no gender main effect, $F(1, 147) = 1.03, p = .31$, IQ main effect, $F(1, 147) = 1.75, p = .18$, or interaction, $F(1, 147) = .38, p = .54$.

Mental Health: BSI. A global estimate of mental health problems was assessed with the BSI (Derogatis, 1994). The BSI is a 53-item self-report symptom inventory designed to reflect

current, point-in-time psychological symptom status of individuals aged 13 and older. Each item of the BSI is rated on a five-point scale of distress ranging from 0 (*not at all*) to 4 (*extremely*). The BSI is scored and profiled in terms of nine primary symptom dimensions (Somatization, Obsessive-Compulsive, Interpersonal Sensitivity, Depression, Anxiety, Hostility, Phobic Anxiety, Paranoid Ideation, Psychoticism). Raw scores on the BSI are converted to standardized t-scores according to a comparison norm group, broken down by boys and girls (non-patient adolescents used for the results reported here). Three global indices of distress (Global Severity Index [GSI], Positive Symptom Total [PST], Positive Symptom Distress Index [PSDI]) are calculated to provide more flexibility in the overall assessment of psychopathological status and to provide psychometric appraisal at a more general level of psychological distress. The GSI is considered an indicator of youth overall distress level, combining the number of symptoms and intensity of distress. The PST reveals the number of symptoms the youth reports experiencing, and, when used in conjunction with the other global indices, helps communicate the extent of the individual's emotional distress. The PSDI reflects the severity of distress and is calculated by dividing the sum of the response values on the 53 BSI items by the number of items endorsed with a positive (i.e., non zero) response, thus producing a type of "symptom average rating." The three global indices demonstrate good test-retest reliability ($r = .80$ to $.90$; Derogatis, 1994). Research with the global indices has confirmed that they reflect distinct aspects of psychological disorder and are worthy of examination for the unique information they provide in understanding psychological distress (Derogatis, Yevzeroff, & Wittelsberger, 1975; Wood, 1986). Internal consistency was assessed on the overall 53 items used with the current sample of adolescents ($N = 147$) and indicated excellent reliability (Chronbach's $\alpha = .94$). The global indices are particularly relevant when examining distress among youth with borderline-to-mild IQ

impairments, given the previous indications of their use in assessing overall distress in this population (Kellett et al., 2004). In this report, we analyzed all three BSI global indices.

Results

Experience of Maltreatment

Based on the CEVQ endorsement of abuse for this subgroup of MAP youth, 35% were physically abused (of these, 96% were from a parent, step-parent, or parent's boyfriend or girlfriend), 25% were sexually abused (of these, 39% were abused by parent or relative), and 51% were emotionally abused (including 38% witnessing physical interparental violence). None of these youth reported maltreatment occurring presently. Based on the CTQ clinical cut-off scores, 59% of youth reported physical abuse at any level (including 37% at the Severe level), 25% reported sexual abuse (including 22% at the Moderate or Severe levels), and 67% reported emotional abuse (including 30% at the Severe level). The majority of these youths (70%) reported experiencing more than one form of abuse, based on any CTQ clinical cut-off levels.

A two-way (Gender x IQ) multivariate analysis of variance (MANOVA) was calculated to test for potential differences in history of maltreatment, as measured by the CTQ subscales. No differences were identified in the multivariate interaction, $F(5, 145) = .89, p = .49$, or gender $F(5, 145) = 1.77, p = .12$, or IQ main effects, $F(5, 145) = 1.24, p = .29$. None of the univariate interactions or main effects were significant (all $ps > .10$). Compared to average IQ youth, borderline-to-mild IQ youth did not report higher rates of maltreatment on Emotional Abuse, $F(1, 149) = 1.60, p = .21$; Emotional Neglect, $F(1, 149) = .30, p = .58$; Physical Abuse, $F(1, 149) = .02, p = .88$; Sexual Abuse, $F(1, 149) = .001, p = .98$; or Physical Neglect, $F(1, 149) = 1.29, p = .26$. Similarly, chi-square tests of independence confirmed that borderline-to-mild IQ and average IQ youth did not differ in the proportion of each group experiencing clinically

significant levels based on the CTQ clinical cutoff levels (all $ps > .10$). There were also no group differences in witnessing domestic violence according to the CEVQ verbal or physical items (both $ps > .10$).

Mental Health Symptoms

A two-way (Gender x IQ) MANOVA was used to test the hypothesis that youth in the borderline-to-mild IQ group would report a greater severity of mental health problems compared to youth in the average IQ group, in ratings on the BSI GSI, PSI, and PSDI indices. The multivariate interaction, $F(3, 147) = 2.89, p = .04$; gender main effect, $F(3, 147) = 3.11, p = .03$; and IQ main effect, $F(3, 147) = 2.61, p = .05$, were all significant. Subsequent univariate analyses revealed significant Gender IQ interactions in GSI, $F(1, 149) = 4.39, p = .04$, and PSDI scores, $F(1, 149) = 4.53, p = .04$, but not PSI scores, $F(1, 149) = .72, p = .40$. As well, youth with borderline-to-mild IQ, across gender, reported significantly higher PSDI severity of distress compared to youth with average IQ, $F(1, 149) = 5.12, p = .03$, although no difference in GSI, $F(1, 149) = 2.15, p = .15$, or PSI scores, $F(1, 149) = .03, p = .87$. Post hoc analyses confirmed that boys with borderline-to-mild IQ had significantly higher global distress as rated on the GSI ($p = .03$), and severity of distress as rated on the PSDI ($p = .008$), as compared to boys with average IQ. Girls with borderline-to-mild and average IQ did not differ from each other on either scale ($p = .59$ and $p = .91$, respectively). Boys with average IQ had significantly lower levels of global psychological distress ($p = .03$), and severity of distress ($p = .04$), compared to girls with average IQ, while boys with borderline-to-mild IQ did not differ significantly from girls with average IQ ($p = .25$ and $p = .20$, respectively).

To test the person-environment interaction between IQ level and emotional abuse in predicting mental health problems, a series of separate hierarchical multiple regression analyses

were calculated on GSI and PSDI scores, given the significant differences outlined previously. The following stepped entries were: (a) a measure of socioeconomic status (SES) that differed between borderline-to-mild IQ and average IQ groups (number of computers in the home) and gender, (b) childhood history of emotional abuse as reflected in the Emotional Abuse Composite, and IQ composite score, and (c) the interaction between the Emotional Abuse Composite and IQ. Data was examined for homoscedasticity and extreme outliers prior to analysis. To avoid multicollinearity associated with interaction terms, the IQ composite score was transformed into a z-score.

The overall regression model was significant in predicting overall distress as reflected by the GSI, $F(5, 137) = 3.39, p = .006$. Table 2 presents the results of the hierarchical regression analysis. After controlling for the effects of gender and SES, emotional abuse and IQ added a significant amount of variance to the model, 9%, $\Delta F(2, 138) = 7.17, p = .001$, although only emotional abuse was a unique significant predictor. The interaction between IQ and emotional abuse did not account for any additional variance in predicting global psychological distress.

[Insert Table 2 About Here]

The overall model was also a significant predictor of the severity of distress as reflected by the PSDI, $F(5, 141) = 2.78, p = .02$. As shown in Table 2, after controlling for gender and SES, emotional abuse and IQ added a significant amount of variance, 9%, $\Delta F(2, 142) = 5.61, p = .005$, with both emotional abuse and IQ acting as unique significant predictors of severity of distress (both $ps < .05$). The interaction of emotional abuse and IQ did not account for any additional variance in severity of distress.

Discussion

The primary goal of the current study was to investigate the role of intellectual functioning and emotional abuse on psychological distress in CPS-involved adolescents. Despite the increased risk of maltreatment and risk of mental health problems in youth with ID compared to typically developing peers, few investigations have sought to understand mental health outcomes in maltreated youth with ID. Although evidence is accumulating in the literature regarding the harmful distal effects of emotional maltreatment (Wright, 2007), this appears to be the first study of its effects in adolescents with borderline-to-mild ID. Prior research clearly indicates that ID is a substantial issue in CPS samples (Fuchs et al., 2007; Fudge Schormans & Brown, 2003).

Overall, our results partially support the hypothesis that maltreated youth with borderline-to-mild ID have more psychological distress compared to maltreated youth with average IQ, despite reporting similar levels of maltreatment experience. No differences in psychopathology were noted between boys and girls with ID, and one is cautioned to overinterpret a negative finding. In our group comparisons (i.e., MANOVA), boys in the borderline-to-mild IQ group reported a greater degree of mental health problems compared to boys in the average IQ group, both in terms of severity and global distress, and IQ was found to be linearly related to the severity of distress using multiple regressions to control for gender, SES, and history of emotional maltreatment. In our regression analyses, controlling for SES and gender, childhood emotional abuse predicted both global distress and symptom severity. Beyond maltreatment, IQ was predictive of symptom severity when emotional abuse was in the model, indicating that youth with borderline-to-mild ID have greater severity of symptoms, than do youth with average IQ. However, the interaction between emotional abuse and IQ was not significant. It is noted that finding significant interaction terms in regressions is difficult to establish when confronted

with low sample sizes (Frazier, Tix, & Barron, 2004; Stone-Romero, Alliger, & Aguinis, 1994). These results are noteworthy given that the more distressed and severely impaired CPS youth were considered ineligible from study participation.

The current study extends what is known about mental health issues in maltreated youth with ID, by being the first to compare these youth to a group of youth with average IQ who also experienced maltreatment. The pattern of differences in psychological distress found in the current study fits with what is known about IQ differences and gender differences in psychopathology in nonmaltreated adolescents. In terms of differences in psychopathology based on IQ, there is a robust evidence base to suggest that individuals with mild ID have significantly more mental health problems than typically developing matched peers (Cooper, Smiley, Morrison, Williamson, & Allan, 2007; Emerson & Hatton, 2007). As many youth with borderline-to-mild ID move into alternate care environments, their lack of severe cognitive deficits may give rise to conventional caregiver responses (e.g., use of louder voice, more stern approach, escalating disciplinary measures), when smaller information chunks and the use of nonverbal communication would be helpful augmentations. These youths' development would benefit from their residential stabilization and access to prior foster care providers with whom they felt attached, a practice that does not seem to be common in current child welfare (Legault, Anawati, & Flynn, 2006). Unfortunately, it is not uncommon for adolescents to return to family of origin once they have "aged out" of CPS support (Collins, Paris, & Ward, 2008), which may support neither the cognitive nor mental health trajectories of these potentially under-detected and under-served youths leaving the child system. These youths may require on-going CPS support, especially in the transition to the adult system.

These results raise a number of important questions. Given that groups were no different in terms of histories of maltreatment (whether it be sexual, physical, emotional, or neglect), and that emotional abuse was found to have an equal effect on youth regardless of IQ status, it is critical that future research examine why maltreated youth with borderline-to-mild ID (especially males) report higher rates of distress, compared to average IQ youth. It may be that these higher rates are attributable to more proximal life events than the distal effects of childhood maltreatment, and are related to an additive influence across a number of recent stressors (Flouri & Tzavidis, 2008). For example, the quality of recent relationships with caregivers (Roos, Meijer, Dekovic, & Aldenkamp, 2006) and peers (Bosquet & Egeland, 2006), youth attachment styles and cognitive attributions (Hankin, 2005), the stability and enriching nature of residential placements (Farmer, Mustillo, Burns, & Holden, 2008), and attainment of personal, family, and sociocultural protective factors (Ungar, Brown, Liebenberg, Cheung, & Levine, 2008) may be more challenged in youth with borderline-to-mild ID and may account for their higher levels of distress. In short, this study encourages further inquiry into the role of IQ in the adaptation of maltreated youth, and continued emphasis on the under-recognized harm associated with emotional abuse.

In considering borderline-to-mild ID youth, it is noteworthy that this level of impairment may be difficult to detect given the range of upheavals within a CPS youth's life. Disability-related information is often not a part of CPS caseworker training (Bonner, Crow, & Hensley, 1997; Cooke & Standen, 2002; Orelove, Hollohan, & Myles, 2000), and caseworkers note being ill equipped to support maltreated youth with disabilities (Cooke & Standen, 2002; Orelove et al., 2000). The first step in the process of supporting caseworkers is the valid identification of intellectual functioning and disability. It is critical to understand an adolescent's cognitive

ability to ensure that there is no under-identification of ID within the CPS system and that services can be tailored to youth needs (Manders & Stoneman, 2009). Given that most of the current sample had corporate parents, it is critical that educational assessments and supports are in place when parenthood is assumed legally. Education to enhance caregiver skills in building positive relationships and in parenting youth with disabilities would be an important preventative endeavor in reducing poor outcomes for youth in CPS care (Grogan-Kaylor, Ruffolo, Ortega, & Clarke, 2008). Specialized psychotherapeutic and educational interventions would also be key treatments for youth with borderline-to-mild ID exposed to domestic violence and abuse (Vickerman & Margolin, 2007). Although understanding a client's history of maltreatment continues to be an important factor in understanding current mental health issues, the current data suggest that IQ is also a significant predictor of distress in this population, beyond the contribution of experiences of maltreatment. Knowing the cognitive abilities of clients can help clinicians to tailor interventions more appropriately and highlight the need to examine how characteristics of victims contribute to maltreatment-related impairment in mental health (Sobsey, 1994).

These preliminary interpretations are tempered by a number of limitations. This study used adolescent self-report as the sole method of assessing youth psychological distress, and used retrospective reporting of child maltreatment. Other studies have found that self-report measures that are administered privately and confidentially (as in this study) can result in valid data with adolescents (Hawkins, Arthur, & Catalano, 1995). The small sample size impacted the number of variables that could be included in the regression analyses and the low power may have impacted the statistical significance of the results. Child welfare samples provide a range of maltreatment types and functioning issues that encourage further research in understanding the

role of IQ in adolescent adaptation from child maltreatment. Given that child welfare services terminate in adolescence, how to best support the most vulnerable among the vulnerable remains a scientific imperative.

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Table 1

Description of Overall, Borderline-to-Mild IQ and Average IQ samples

Variables	Total sample N = 165 M (SD)	Borderline- to-Mild IQ N = 48 M (SD)	Average IQ N = 117 M (SD)
Age in years	15.8 (1.02)	15.9 (.97)	15.8 (1.04)
Gender (% Male)	41	31	45
KBIT Composite score ***	90.9 (13.50)	73.2 (6.85)	98.2 (7.41)
KBIT Matrices score ***	93.4 (14.54)	74.7 (8.68)	101.0 (8.04)
KBIT Vocabulary score ***	90.3 (12.40)	76.8 (8.70)	95.9 (8.93)
Ethnicity:			
- White	28%	21%	30%
- Black	20%	32%	15%
- Other	14%	4%	18%
- Combination of two or more	38%	43%	37%
CPS Status:			
- Crown Ward (parent rights legally terminated)	80%	81%	80%
- Society Ward (parent-CPS sharing rights)	10%	11%	10%
- Temporary Care	2%	3%	2%
- Community Family/ Temporary Care	7%	5%	8%
Socioeconomic status:			
- # computers at home *	2.5 (.68)	2.3 (.70)	2.5 (.67)
- # cars in home *	2.2 (.78)	1.9 (.87)	2.3 (.74)
- In the place you lived most of your life, caregivers own or rent? (% Owned)	56%	44%	60%
Father figure education level:			
- Unknown / no father figure	23%	27%	21%
- Some elementary	13%	15%	12%
- Some high school	15%	18%	14%
- Graduate high school	30%	27%	32%
- Graduated College or University	19%	15%	21%
Mother figure education level:			
- Unknown / no mother figure	5%	9%	3%
- Some elementary	14%	14%	14%
- Some high school	25%	26%	25%
- Graduate high school	29%	31%	29%
- Graduated College or University	26%	20%	29%
Turbulence factors:			
- # of homes in 5 years	3.2 (3.11)	3.9 (3.74)	2.2 (2.79)
- # of school moves in 5 years	2.7 (1.48)	3.0 (1.55)	2.8 (1.46)
- # of CPS workers since CPS involvement	3.1 (1.41)	3.4 (1.78)	2.9 (1.23)
- # of years in CPS	6.4 (4.08)	5.8 (3.29)	6.5 (4.30)

Difference between Borderline-to-Mild IQ and Average IQ: * $p < .05$, ** $p < .01$, *** $p < .001$

Table 2

Hierarchical Multiple Regression Analyses Examining Predictors of GSI and PSDI Distress

Independent variables	Outcomes					
	Global Severity Index			Positive Symptom Distress Index		
	B	SE B	β	B	SE B	β
Step 1						
SES	-1.26	1.70	-.06	.79	1.47	.04
Gender	-3.19	2.32	-.12	-2.70	2.02	-.11
Step 2:						
SES	-.02	1.68	-.001	1.42	1.47	.11
Gender	-1.68	2.27	-.06	-1.93	2.00	-.06
Emotional Abuse	4.12	1.12	.30***	2.52	.99	.21*
IQ	-1.23	1.13	-.09	-2.37	1.00	-.20*
Step 3:						
SES	-.01	1.68	-.001	1.99	1.48	.11
Gender	-1.68	2.28	-.06	-1.51	2.00	-.06
Emotional Abuse	4.11	1.14	.30***	2.41	1.00	.20*
IQ	-1.22	1.17	-.09	-2.14	1.04	-.18*
Emotional Abuse X IQ interaction	.05	1.32	.003	.97	1.18	.07

Note.

GSI: $R^2 = .02$ for Step 1; $\Delta R^2 = .09$ for Step 2; $\Delta R^2 < .01$ for Step 3PSDI: $R^2 = .01$ for Step 1; $\Delta R^2 = .09$ for Step 2; $\Delta R^2 < .01$ for Step 3* = $p < .05$; ** = $p < .01$; *** = $p < .001$