

Childhood Maltreatment and Educational Outcomes

TRAUMA, VIOLENCE, & ABUSE
2015, Vol. 16(4) 418-437
© The Author(s) 2014
Reprints and permission:
sagepub.com/journalsPermissions.nav
DOI: 10.1177/1524838014537908
tva.sagepub.com



Elisa Romano¹, Lyzon Babchishin¹, Robyn Marquis¹,
and Sabrina Fréchette¹

Abstract

Children (0–18 years) with maltreatment histories are vulnerable to experiencing difficulties across multiple domains of functioning, including educational outcomes that encompass not only academic achievement but also mental well-being. The current literature review adopted Slade and Wissow's model to examine (1) the link between childhood maltreatment and academic achievement, (2) the link between childhood maltreatment and mental health outcomes (i.e., emotional and behavioral difficulties), and (3) the bidirectional relationship between childhood academic achievement and mental health. In addition, we reviewed variables that might influence or help explain the link between childhood maltreatment and educational outcomes, drawing on developmental perspectives and Bronfenbrenner's ecological model. Finally, whenever possible, we presented findings specific to maltreated children in out-of-home care to highlight the unique challenges experienced by this population. Results indicated that children with maltreatment histories often experience impairments in both their academic performance (e.g., special education, grade retention, lower grades) and mental well-being (e.g., anxiety, low mood, aggression, social skills deficits, poor interpersonal relationships). These impairments appeared to be particularly pronounced among maltreated children in out-of-home care. Findings, albeit sparse, also indicated that mental health difficulties are negatively associated with children's academic achievement and, similarly, that academic achievement deficits are linked with mental health problems. The link between childhood maltreatment and educational outcomes may be partly explained through the disruption of key developmental processes in children, such as attachment, emotion regulation, and sense of agency. As well, maltreatment characteristics and the functioning of various systems in which children are embedded (e.g., family, school, child welfare) can serve to positively or negatively influence the educational outcomes of maltreated children. The theoretical, research, and applied implications stemming from the findings are considered.

Keywords

maltreatment, education, achievement, mental health, child welfare, children, adolescents

In this literature review of the relationship between childhood maltreatment and educational outcomes, we focused on children (defined as individuals younger than 18 years of age) who experienced childhood maltreatment in the form of abuse and neglect. These experiences occur primarily within the family context and typically include sexual abuse, physical abuse, emotional abuse, exposure to intimate partner violence, and neglect. Maltreatment experiences are relatively common among children. The 2008 Canadian Incidence Study of Reported Child Abuse and Neglect (Trocmé, Fallon, MacLaurin, Hélie, & Turcotte, 2010) tracked child maltreatment investigations in a representative sample of 112 Canadian child welfare agencies during the fall of 2008. Estimates indicated that 235,842 investigations were conducted in Canada (39.16 per thousand 0- to 16-year-olds). Of those investigations that were substantiated (an estimated 85,440 investigations or 14.19 per 1,000 children), the incidence rates were the following: exposure to intimate partner violence (34%), neglect

(34%), physical abuse (20%), emotional maltreatment (9%), and sexual abuse (3%). In the United States, data on children referred to Child Protective Services (9.2 per 1,000 children) in 2010 indicated the following incidence rates: neglect (78.3%), physical abuse (17.6%), sexual abuse (9.2%), and emotional maltreatment (8.1%; U.S. Department of Health and Human Services, 2011).

Children with maltreatment experiences are sometimes placed in out-of-home care, such as with foster or kinship caregivers. Recent Canadian data indicate that 47,885 children were living in out-of-home care (Statistics Canada, 2011). Not

¹ University of Ottawa, Ottawa, Ontario, Canada

Corresponding Author:

Elisa Romano, University of Ottawa, 136 Jean Jacques Lussier, School of Psychology, Ottawa, Ontario, Canada K1N 6N5.
Email: eromano@uottawa.ca

including children in group homes (which represent about 1% of all substantiated cases of maltreatment in Canada; Trocmé et al., 2010), the breakdown across Canada was as follows: 8,590 (17.9% of the total) 0- to 4-year-olds; 8,855 (18.5% of the total) 5- to 9-year-olds; 12,150 (25.4% of the total) 10- to 14-year-olds; and 11,455 (23.9% of the total) of the 15- to 19-year-olds. Children in out-of-home care are an especially vulnerable group of maltreated children because of their removal from biological caregivers, which is often due to multiple adversities that have compromised their well-being and which often results in a number of transitions to various out-of-home placements (McDonald, Allen, Westerfelt, & Piliavin, 1996).

Childhood maltreatment can have a devastating developmental impact both on a short- and long-term basis. Research has found that children with maltreatment histories are at greater risk for difficulties across a range of domains, including mental health (emotional and behavioral) functioning as well as cognitive and language development (Hoch, 2009; Kaplan, Pelcovitz, & Labruna, 1999; Manly, Cicchetti, & Barnett, 1994; Pantin & Flynn, 2006; Pears & Fisher, 2005; Petrenko, Friend, Garrido, Taussiga, & Culhanea, 2012; Snow, 2009). Maltreatment tends to exert such a far-reaching impact because these domains of functioning are all interrelated and mutually influential (English et al., 2005). As such, it is not surprising that the educational outcomes of maltreated children are often compromised, even though childhood maltreatment occurs primarily within the family home (Leiter & Johnsen, 1994; Slade & Wissow, 2007; Trout, Hagaman, Casey, Reid, & Epstein, 2008). These findings are important because early school experiences help shape expectations for future success, not only on the part of children themselves (Veltman & Browne, 2001) but also on the part of significant others, such as caregivers and teachers (Tideman, Vinnerljung, Hintze, & Isaksson, 2011). Moreover, without mastery of basic academic skills, maltreated children may be at increased risk for short- and long-term academic failure, school dropout, involvement in criminal activity, incarceration, dependency on welfare programs, and homelessness (Snow, 2009; Trout et al., 2008). In fact, a growing body of literature has underscored the importance of improving academic achievement for children who have experienced maltreatment as it represents one of the greatest needs for this population, especially among maltreated children in out-of-home care (Snow, 2009; Trout et al., 2008).

Research on the educational outcomes of children with maltreatment histories has tended to focus on academic achievement, but a child's school success is dependent on various interrelated and mutually influential factors. As such, we adopted a holistic approach that defined educational outcomes in terms of both children's academic achievement and mental well-being (i.e., emotional and behavioral functioning). This approach is consistent with Slade and Wissow's (2007) three-factor heuristic model that (1) links childhood maltreatment to the development of difficulties in both children's mental health and academic achievement, (2) posits a bidirectional relationship between mental health and academic achievement

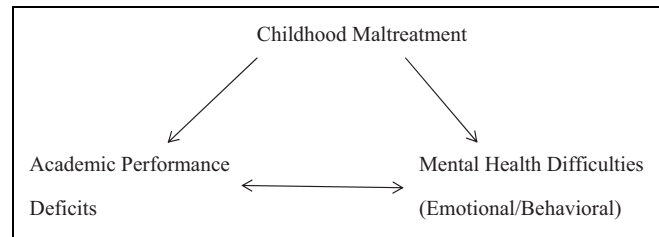


Figure 1. Simplified heuristic model linking childhood maltreatment with later academic performance and mental health outcomes (Slade & Wissow, 2007).

(both of which play a role in educational outcomes and success), and (3) acknowledges that mental health may mediate the link between childhood maltreatment and academic achievement and, likewise, that academic achievement may mediate the link between childhood maltreatment and mental health (see Figure 1).

Within this context, our objective was to review the empirical literature on childhood maltreatment and educational outcomes as a way of better understanding this complex and dynamic relationship. As part of this review, we also examined variables that might help explain the relationship between maltreatment and educational outcomes, using Bronfenbrenner's (1979) ecological model as our theoretical framework. Finally, whenever possible, we presented findings specific to maltreated children in out-of-home care to highlight the unique challenges experienced by this population. However, it should be noted that we were not able to systematically make comparisons on the educational outcomes of maltreated children living with their biological families versus those in out-of-home care because of the relatively underdeveloped state of current research on this topic.

Method

For the current literature review, we considered articles that examined the association between childhood maltreatment and educational outcomes. The included studies were identified through (a) electronically searching databases (i.e., PsycINFO, PsycARTICLES, ERIC, International Bibliography of the Social Sciences, MEDLINE, PubMed), (b) hand searching relevant journals (e.g., *Child Abuse & Neglect*, *Children and Youth Services Review*), and (c) reviewing articles identified in the reference lists of relevant articles. Key words used for the electronic searches included maltreatment, victimization, child abuse, neglect, physical abuse, sexual abuse, emotional abuse, out-of-home care, foster care, education, educational outcomes/difficulties, academic achievement, school performance, emotional, and behavioral outcomes/difficulties. The inclusion criteria were empirical articles and research syntheses (e.g., literature reviews, systematic reviews, meta-analyses) published between 1990 and 2013 on the subject of educational and mental health outcomes in children (age 0–18) with maltreatment histories. We focused on articles and syntheses in which children's maltreatment was determined

in a relatively objective manner, such as through their contact with child welfare services or their removal from the care of biological parents. As such, articles that examined the educational outcomes of children in out-of-home care were considered. Articles not in the English language or contained in the gray literature (e.g., conference papers) were not considered.

Theoretical Framework

In order to better understand the relationship between childhood maltreatment and educational outcomes, we considered a number of variables that have been organized using Bronfenbrenner's (1979) ecological framework. This framework describes five systems that influence children's development and functioning, albeit in a more proximal (direct) or distal (indirect) manner. The two more distal systems include the *macrosystem*, which refers to the cultural beliefs and values influencing general lifestyles as well as services offered in any given society, and the *exosystem*, defined as different structures or settings in the community that do not directly involve the developing individual (e.g., neighborhoods, availability of services, support groups, socioeconomic climate; Bronfenbrenner, 1979; Cicchetti & Toth, 1997; Cicchetti & Valentino, 2006). The two more proximal systems include the *microsystem*, which represents all immediate settings in which the developing individual directly evolves (e.g., family, school) as well as any activities, roles, and interpersonal relationships experienced by this individual, and *ontogenic development*, which refers to characteristics within the individual that influence his or her development and adaptation (e.g., resolution of developmental tasks; Cicchetti & Toth, 1997; Cicchetti & Valentino, 2006). Finally, the *mesosystem* represents the interactions among the different systems in which the developing individual is nested, such as the relationship between the child's parents and his or her school setting (Bronfenbrenner, 1979).

Results

Childhood Maltreatment and Academic Achievement

Using our search criteria, we located 16 empirical articles (Table 1) and four research syntheses (Table 2) which included information on academic achievement for maltreated children. For the empirical articles, Table 1 indicates that most studies (70.6%) were conducted in the United States, followed by Canada (23.5%) and Israel (5.9%). There was variability in sample characteristics (e.g., sample size, age range, placement in out-of-home care, convenience vs. more representative sample), study methodology (e.g., primary vs. secondary data, cross-sectional vs. longitudinal design, inclusion of a comparison group), and data collection measures (e.g., multiple informant reports, standardized testing, administrative databases, school records). This variability undoubtedly resulted in a range of outcomes related to the academic achievement of maltreated children. We have attempted to distill main findings as follows: Children and adolescents with maltreatment histories often exhibit impairments in their academic performance, as

evidenced through markers such as involvement in special education interventions, poor performance across a range of school subjects and on standardized achievement measures, lower grade point averages, higher grade retention, and frequent school absences and/or changes. In terms of child characteristics, risk of academic achievement deficits appears to be greater for boys (than girls) and for adolescents (than younger children). In terms of maltreatment characteristics, there appear to be several differential effects. Children who have experienced primarily neglect seem to have greater impairments in academic achievement than children with primarily other types of maltreatment, in particular physical abuse. In addition, multiple maltreatment experiences and earlier age of maltreatment onset appear associated with greater academic difficulties. In terms of placement characteristics, there were few studies that compared the academic achievement of maltreated children as a function of their living arrangement. However, Attar-Schwartz (2009) found that children and adolescents in family-based out-of-home settings performed better academically than those in group-based care.

Turning to the research syntheses in Table 2, findings mirrored and extended those in Table 1. Specifically, there was an association between childhood maltreatment and a number of academic-related outcomes, including lower grades, higher grade repetition, achievement below expectations, given one's intellectual capacities, greater cognitive and language delays, and greater involvement in special education interventions. Most research has not investigated the association between childhood maltreatment and academic achievement in a comprehensive and consistent manner that takes into account variables that might potentially modify this association. However, preliminary findings indicate that difficulties in academic achievement may be particularly pronounced among children with the following characteristics: multiple maltreatment experiences, certain types of maltreatment (e.g., neglect), early onset maltreatment, unsubstantiated maltreatment allegations, residential mobility, and out-of-home care.

What might account for the relationship between childhood maltreatment and difficulties in academic achievement? As a prelude, we wish to mention that we relied on Bronfenbrenner's ecological framework to organize this section and that we drew on any findings from Tables 1 and 2 that speak to the issue. However, it should again be noted that few studies have empirically tested mediating and/or moderating models to understand the link between maltreatment and achievement among children. Beginning with Bronfenbrenner's *ontogenic* level, childhood maltreatment often interrupts normal brain development and, in this way, can disrupt such basic cognitive processes as concentration, memory, and language as well as the organizational abilities needed by children to function well in school (Cole et al., 2005; Eisen, Goodman, Qin, Davis, & Crayton, 2007; Toth & Cicchetti, 2006). Each of these difficulties, alone or in combination, can increase the risk of academic difficulties because they have been found to interfere with children's ability to learn. Lowenthal (2000) identified the two following ways in which neurodevelopment can be influenced or

Table 1. Summary of Empirical Studies on the Relationship Between Childhood Maltreatment and Academic Achievement.

Reference	Sample	Measures	Main Results
Attar-Schwartz (2009) Israel	<ul style="list-style-type: none"> Four thousand sixty-one 6- to 20-year-olds with maltreatment histories in out-of-home care 	<ul style="list-style-type: none"> Social worker reports on children's academic and mental health functioning Residential care quality control supervisor reports on facility characteristics 	<ul style="list-style-type: none"> Most (62%) had at least one problem in school functioning, including low achievement and behavior problems One third had special education needs Children and youth in small family-like settings had fewer academic problems than those in group settings Boys had greater problems in school functioning than girls Problems in school functioning were less frequent in facilities that had lower levels of peer violence and that emphasized after-school activities and education
Cheung, Lewin, and Jenkins (2012) Canada	<ul style="list-style-type: none"> Six hundred and eighty seven 10- to 15-year-old maltreated youth in out-of-home care Data from the Ontario Looking After Children (OnLAC) project 	<ul style="list-style-type: none"> Youth, foster caregiver, and child welfare worker reports on youth functioning across various domains (including education and emotional/behavioral development) 	<ul style="list-style-type: none"> Younger children performed better academically than older children Girls had better academic achievement than boys Greater foster caregiver academic involvement, better literacy environment, and greater academic expectations were significantly associated with increases in academic achievement
Crozier and Barth (2005) United States	<ul style="list-style-type: none"> Two thousand four hundred and ninety-eight 6- to 15-year-olds with maltreatment histories Subsample from the National Survey of Children and Adolescent Well-Being, a national probability study of children receiving welfare services for allegations of child maltreatment Mixed sex and culturally diverse 	<ul style="list-style-type: none"> Standardized testing for cognitive functioning and achievement Caregiver and teacher reports on children's emotional/behavioral outcomes 	<ul style="list-style-type: none"> Foster caregiver school-based involvement was not significantly related to school achievement One third had below-average cognitive, reading, and mathematics scores. There were no significant differences as a function of child sex, age, or maltreatment type The following family-level factors were significantly associated with lower cognitive or academic scores: poverty, previous welfare services, and caregiver mental health difficulties Behavior problems were related with lower academic and cognitive scores

(continued)

Table 1. (continued)

Reference	Sample	Measures	Main Results
Eckenrode, Laird, and Doris (1993) United States	<ul style="list-style-type: none"> • Four hundred and twenty children with maltreatment histories, as indicated by the local Child and Maltreatment Register • Comparison sample of 420 nonmaltreated children • The samples included children from kindergarten to Grade 12 and were matched on sex, age, grade level, neighborhood, and, when possible, classroom 	<ul style="list-style-type: none"> • Archival data drawn from the State Central Registry and school records from 1987 to 1988 • Children's social services records for information on maltreatment history and demographic variables • School records for information on children's standardized test scores for math and reading, grade point averages (GPAs) for reading and math, number of repeated grades, number of discipline referrals, and number of suspensions 	<ul style="list-style-type: none"> • Maltreated children had lower math and reading grades, compared to nonmaltreated peers • Interaction effect for public assistance, with the difference in grades between maltreated and nonmaltreated children being more pronounced in children who did not receive public assistance • Interaction effect for maltreatment type, with maltreated children with sexual abuse alone receiving higher grades compared to maltreated children with neglect alone or with neglect and physical abuse • Maltreated children scored significantly lower on standardized math and reading scores, compared to nonmaltreated peers • Interaction effect for grade level, with the effects of maltreatment on children's test scores more pronounced in lower grades • Maltreated children were 2.5 times more likely than nonmaltreated peers to repeat a grade. This was particularly pronounced for children with neglect and/or physical abuse, compared to sexual abuse • Maltreated children had a greater number of discipline referrals and suspensions, compared to nonmaltreated peers. Older children had a greater number of discipline referrals, and older children and boys had a greater number of suspensions • Maltreated children who did not receive public assistance had a greater number of discipline referrals than maltreated children who did receive public assistance • Physically abused children had more suspensions and discipline referrals, compared to children with sexual abuse or neglect only

(continued)

Table 1. (continued)

Reference	Sample	Measures	Main Results
Flynn and Biro (1998) Canada	<ul style="list-style-type: none"> Forty-three 0- to 19-year-old maltreated children/youth in out-of-home care in rural setting Mixed sex Data from the OnLAC project Data from the Canadian National Longitudinal Survey of Children and Youth to serve as general population comparison group 	<ul style="list-style-type: none"> Child/youth, foster caregiver, and child welfare worker reports on child/youth functioning across various domains (including education and emotional/behavioral development) Caregiver and older children reports for the comparison group 	<ul style="list-style-type: none"> Children/youth in care had grade repetitions (41% compared to 9% in general population), special education (43% compared to 7% in general population), and frequent school transitions (mean 3.9 compared to 2.0 in general population) No significant differences between groups on family relationships (e.g., getting along with caregivers, amount of praise received by caregivers) Children/youth in care spent less time with friends outside of school (mean 1.6 compared to 2.5 in general population) For mental health outcomes, there were no significant group differences on prosocial behavior. However, children/youth in care had significantly greater problems on hyperactivity/inattention, depression/anxiety, conduct disorder/physical aggression, indirect aggression, and property offences
Flynn, Ghazal, Legault, Vandermeulen, and Petrick (2004) Canada	<ul style="list-style-type: none"> 340 children aged 10–15 (46% girls) 132 children aged 5–9 (43% girls) Maltreated children in out-of-home care Data from the OnLAC project Data from the Canadian National Longitudinal Survey of Children and Youth to serve as general population comparison group 	<ul style="list-style-type: none"> Child/youth, foster caregiver, and child welfare worker reports on child/youth functioning across various domains (including education and emotional/behavioral development) Caregiver and older children reports for the comparison group 	<ul style="list-style-type: none"> There were no significant group differences on self-esteem, prosocial behavior, and health For academic performance, 80% of children in care (5–15 years) scored in the same range as the lowest third of children in general population. Children in care received special education (48% of 5- to 9- year-olds compared to 6% in general population), had 4+ school absences (50% of 5- to 9-year-olds compared to 13% in general population) For relationships with friends, 49% of 10- to 15-year-olds in care scored in the same range as the lowest third of children in general population For anxiety and emotional distress, half of the children in care (5–15 years) scored in the same range as the most distressed third of children in general population

(continued)

Table 1. (continued)

Reference	Sample	Measures	Main Results
Jonson-Reid, Drake, Kim, Porterfield, and Han (2004) United States	<ul style="list-style-type: none"> Seven thousand nine hundred and forty 7.5- to 16-year-old children who received Aid to Families with Dependent Children (AFDC) from 1993 to 1994 Longitudinal study until 2001 Subsample of AFDC children with reported maltreatment ($n = 3,987$) and children with AFDC only ($n = 3,953$) 	<ul style="list-style-type: none"> Seven administrative databases were reviewed (i.e., Medicaid child health records, Medicaid adult health records, AFDC records, maltreatment reporting records, child welfare services information, special education records, census data) Dependent variables were eligibility for special education (yes/no) and type of disability (i.e., learning disability, emotional disturbances, mental retardation, speech, early childhood special education, and other) 	<ul style="list-style-type: none"> Maltreatment was associated with special education, even after controlling for developmental risk, poverty, and other demographic factors Physical abuse and children with recurring reports had the highest likelihood of emotional disturbances compared to other maltreatment types Children who primarily experienced neglect had the highest rates of a later mental retardation diagnosis Children with a history of sexual abuse had the highest rates of learning disabilities Children exposed to multiple types of maltreatment had the worst outcomes, with the highest rates of childhood delay and other health impairments Boys were particularly at risk for special education and educational disabilities compared to girls Maternal high school completion was a protective factor for maltreated children, reducing the likelihood of entry in special education
Kendall-Tackett and Eckenrode (1996) United States	<ul style="list-style-type: none"> 420 Maltreated children sample identified through a central registry for child abuse and maltreatment 420 Nonmaltreated general population children Samples were matched on sex, age, grade level, neighborhood, and when possible, classroom Maltreatment group was further divided into maltreatment type 	<ul style="list-style-type: none"> Archival data from 1987 to 1988 from the State Central Registry School records for reading and math GPAs, number of repeated grades, number of discipline referrals, and number of suspensions 	<ul style="list-style-type: none"> Neglected and neglect/abused children had significantly lower grades, compared to nonmaltreated peers Neglected and neglected/abused children had significantly greater grade repetitions, greater disciplinary referrals, and greater suspensions than nonmaltreated peers Older children had a greater number of grade repetitions, suspensions, and disciplinary referrals than younger children

(continued)

Table 1. (continued)

Reference	Sample	Measures	Main Results
Kurtz, Gaudin, Howing, and Wodarski (1993) United States	<ul style="list-style-type: none"> • Longitudinal sample of fifty-nine 8- to 16-year-old maltreated children (physical abuse, neglect) • 60 nonmaltreated children 	<ul style="list-style-type: none"> • Caregiver and teacher reports on children's emotional/behavioral functioning • Caregiver reports on children's adaptive functioning • Child reports on self-concept, aggression • Child and caregiver reports on children's school/home/peer adjustment and educational aspirations • School records 	<ul style="list-style-type: none"> • Maltreated children had lower overall school performance, compared with nonmaltreated peers. Academic deficits were especially pronounced among neglected children • Neglected children had greater school absences than nonmaltreated children • Physically abused children had significantly more behavior problems than neglected and nonmaltreated children • Maltreated children had greater grade repetition (55% of physically abused and 60% of neglected children, compared with 24% of nonmaltreated peers)
Leiter (2007) United States	<ul style="list-style-type: none"> • Random sample of 2,315 children from all those with maltreatment reports in 1983–1989, living in North Carolina • A subsample of children with data from at least two data points were identified ($n = 715$) 	<ul style="list-style-type: none"> • Archival data from the State Child Protection Services records and school district records, specifically GPAs and absenteeism 	<ul style="list-style-type: none"> • Maltreatment reports were associated with greater absenteeism, and this effect was greater in younger children • GPAs fell with age regardless of maltreatment events. This decline was more pronounced in children with unsubstantiated reports, suggesting that a public response after a maltreatment report has a beneficial or blunting effect on this educational variable
Leiter and Johnsen (1994) United States	<ul style="list-style-type: none"> • Three samples were examined, namely a maltreated sample, a clinical sample, and a general population sample • Maltreatment sample was randomly drawn from the central registry of Child Abuse and Neglect and included 2,219 children in North Carolina • Comparison clinical sample included 280 children for nonmaltreatment reason • Comparison general population sample included 387 randomly selected children 	<ul style="list-style-type: none"> • Archival data from school district records, Division of Social Services records, and child protection records • School outcomes assessed by GPAs, absenteeism, drop-out rates, and standardized achievement scores 	<ul style="list-style-type: none"> • Maltreated sample did significantly worse on all school outcomes, compared with general population. However, demographic differences between samples may account for these differences, with ethnic minorities, nonintact families, low family income, and lower parental education overrepresented in the maltreated sample • With the exception of lower GPAs, the maltreated and clinical samples did not differ on school outcomes. The impact of maltreatment on school outcomes might not be that different from the impact related to other childhood nonmaltreatment adversities

(continued)

Table 1. (continued)

Reference	Sample	Measures	Main Results
Leiter and Johnsen (1997) United States	<ul style="list-style-type: none"> • Random sample from the central registry of Child Abuse and Neglect in 1989 (North Carolina) • 967 Children with maltreatment histories who were followed for their entire school career • Mixed sex and diverse ethnic background 	<ul style="list-style-type: none"> • Archival data on school outcomes included GPAs, dropout and absenteeism rates, elementary grade behavior problems, grade retention, and special program involvement 	<ul style="list-style-type: none"> • A number of children experienced a significant decline after the maltreatment report. Specifically, 43% had a decline in GPA (more pronounced after age 14); 32% dropped out of school; 47% had greater absenteeism; 27% exhibited behavior problems in elementary grades; and 24% were either eligible, referred to, or placed in a special education program • Academic problems increased with age and was particularly high at the beginning of adolescence • The following maltreatment characteristics were associated with differences in school performance: (a) accumulated reports of maltreatment, capturing the severity of maltreatment, was significantly associated with greater absenteeism and dropout rates; (b) more recent maltreatment reports was significantly related with lower GPAs as well as greater absenteeism and dropout rates; (c) early onset maltreatment was associated with greater behavior problems in elementary grades, involvement in special education programs, and grade retention • School outcomes were not significantly different as a function of whether the maltreatment report was/was not substantiated

(continued)

Table 1. (continued)

Reference	Sample	Measures	Main Results
Miller, Flynn, and Vandermeulen (2008) Canada	<ul style="list-style-type: none"> • One hundred and seventy 0- to 4-year-olds; Five hundred and thirty-one 5- to 9-year-olds; One thousand six hundred and nine 10- to 15-year-olds; Six hundred and sixty-eight 16- to 20-year-olds • Mixed sex sample of maltreated children in out-of-home care • Data from the OnLAC project • Data from the Canadian National Longitudinal Survey of Children and Youth to serve as general population comparison group 	<ul style="list-style-type: none"> • Child/youth, foster caregiver, and child welfare worker reports on child/youth functioning across various domains (including education and emotional/behavioral development) • Caregiver and older children/adolescent reports for the comparison group 	<ul style="list-style-type: none"> • 0- to 4-Year-olds: 18% in care received special education, compared to 3% in general population • 5- to 9-Year-olds: Children in care had grade repetitions (13%), 3+ school changes (31%), 11+ school absences in the past year (13% compared to 2% in general population), special education (48% compared to 4% in general population), and tutoring outside of school (25% compared to 6% in general population) • 27–40% performed poorly in school subjects, compared to 2–7% in general population • 10- to 15-Year-olds: Youth in care had grade repetitions (22%), 3+ school changes (68%), 11+ school absences in the past year (10% compared to 1% in general population), special education (63% compared to 7% in general population), and tutoring outside of school (26% compared to 4% in general population) • 19–31% performed poorly in school subjects, compared to 7% in general population • 16- to 20-Year-olds: Youth in care had grade repetitions (27%), 3+ school changes (68%), 11+ school absences in the past year (27%), and special education (42%). No general population comparison group was available • 22–28% performed poorly in school subjects. No general population comparison group was available • 16% performed poorly overall in school, compared to 9% in general population

(continued)

Table 1. (continued)

Reference	Sample	Measures	Main Results
Rowe and Eckenrode (1999) United States	<ul style="list-style-type: none"> • Eight hundred and forty 5- to 18-year-old mixed sex sample • 420 maltreated children (56.1% neglect, 7.3% physical abuse, 9.2% sexual abuse, 27.4% neglect and abuse) • 420 nonmaltreated children • 67% of families received income-based public assistance 	<ul style="list-style-type: none"> • School records on grade repetitions, reading, and math grades 	<ul style="list-style-type: none"> • After controlling for sex and public assistance: Maltreated children were 2.04 times more likely to repeat a grade than nonmaltreated children across all school years. The risk of repeating a grade was highest in kindergarten and first grade • Maltreated children were 1.67 times more likely to receive a poor English/reading grade than nonmaltreated peers • Maltreated children were 1.53 times more likely to receive a poor math grade than nonmaltreated children
Shonk and Cicchetti (2001) United States	<ul style="list-style-type: none"> • Two hundred and twenty-nine 5- to 12-year-old, mixed sex, low socioeconomic status (SES) sample • 146 maltreated children in out-of-home care and 83 nonmaltreated • Diverse racial and ethnic background 	<ul style="list-style-type: none"> • Teacher reports on children's peer relationships, social skills, and behavioral functioning • Camp counselor reports on children's behavioral functioning • School records 	<ul style="list-style-type: none"> • Maltreated children had higher levels of school problems, compared with nonmaltreated peers. In particular, they had higher grade retention, greater school absences, greater referrals for special services/higher placement in special education, lower achievement test scores, and more failure in core academic subjects • Maltreated children had significantly higher externalizing and internalizing behavior problems, compared with nonmaltreated peers • Compared with nonmaltreated peers, maltreated children had significantly lower academic engagement, social competence, and ego resiliency, all of which have been found to be associated with academic and behavioral maladjustment • Academic engagement mediated the link between maltreatment and academic maladjustment, whereas social competence and ego resiliency mediated the link between maltreatment and behavioral maladjustment

(continued)

Table 1. (continued)

Reference	Sample	Measures	Main Results
Wodarski, Kurtz, Gaudin, and Howing (1990) United States	<ul style="list-style-type: none"> • One hundred and thirty-nine 8- to 16-year-old mixed sex sample (living with either their biological family or in out-of-home care) • 69 maltreated (physical abuse or neglect), as substantiated by the Children's Services offices, and 70 nonmaltreated children • Diverse racial and ethnic background 	<ul style="list-style-type: none"> • Caregiver reports on children's behavioral functioning • Child reports on self-concept • Teacher reports on children's behavioral functioning • Standardized achievement testing • School records 	<ul style="list-style-type: none"> • Compared with nonmaltreated peers, maltreated children scored significantly lower on overall school performance and on mathematics. Children who experienced neglect scored lower on language and reading • Children who experienced physical abuse had significantly higher grade repetition, whereas neglected children had significantly greater school absences, compared with nonmaltreated children • Physically abused children had greater behavior problems than neglected and nonmaltreated children (based on parent reports) • Maltreated children had greater behavior problems than nonmaltreated peers (based on teacher reports) • Physically abused children had lower self-concept and greater feelings of aggression, compared with neglected and nonmaltreated children (based on self-reports) • Maltreated children had lower home adjustment scores, whereas physically abused children had lower school-, peer-, and self-adjustment scores and higher delinquency scores (compared with neglected and nonmaltreated children)

Table 2. Summary of Research Syntheses on the Relationship Between Childhood Maltreatment and Academic Achievement.

Reference	Methods	Results
Staudt (2001) United States	<ul style="list-style-type: none"> • Literature review of 21 studies published between 1979 and 1994 on outcomes associated with maltreated children • 8 studies examined internalizing and externalizing behavior • 10 studies examined peer relationships • 3 studies examined school functioning 	<ul style="list-style-type: none"> • There was a cumulative effect of maltreatment on children's symptoms of depression, hopelessness, and low self-esteem • Maltreatment was associated with conduct disorder and school difficulties (grade repetition, lower grades, lower standardized test scores, greater discipline referrals) • Neglected boys had more relationship problems, compared with abused and nonmaltreated children (boys and girls) • Children who had multiple victimization experiences were at greater risk of experiencing difficulties across various domains of functioning (psychopathology, peer relations, school functioning), especially when they were also involved with child welfare services
Stone (2007) United States	<ul style="list-style-type: none"> • Literature review of 15 years (1990–2005) of research associated with childhood maltreatment, out-of-home placement, and academic outcomes 	<ul style="list-style-type: none"> • There are a number of methodological limitations that impair the generalizability of results. For example, few studies control for variables that might impact the relationship between maltreatment and academic outcomes, such as the child's cognitive skills and the extent of child welfare involvement • Despite these limitations, studies showed that three factors are robustly associated with the academic performance of maltreated children, namely maltreatment characteristics, sociodemographic risk (residential mobility), and living without one's biological parents • Grade retention was a prominent issue across all maltreated children, regardless of the type of maltreatment experienced • Maltreatment experienced early in life had a particularly strong association with behavioral problems and grade repetition • Maltreated children with a history of foster care placement tended to have greater academic difficulties than those who had not been removed from their biological home
Trout, Hagan, Casey, Reid, and Epstein (2008) United States	<ul style="list-style-type: none"> • Literature review of studies published between 1940 and 2006 on academic- and school-functioning behaviors for children/adolescents in out-of-home care • Conducted an electronic search of the PsychINFO and ERIC databases 	<ul style="list-style-type: none"> • The review included 29 studies (36 data sets) that reported on 13,401 students • These students represented a fairly even sex distribution (52% males) and a mean age of 12.9 • The majority of students were in a foster home placement, rather than in group care • There were high levels of involvement in special education and low to average IQ scores. These students tended to perform below expectations, given their grade level • The studies did not provide consistent information on variables that might impact the relationship between maltreatment and academic outcomes, such as socioeconomic status (SES; school and care) placement history, special education status, and involvement in remediation programs

(continued)

Table 2. (continued)

Reference	Methods	Results
Veltman and Browne (2001) United Kingdom	<ul style="list-style-type: none"> • Literature review of 30 years (1969–1999) of research on the association between childhood maltreatment and school experiences • Conducted an electronic search of the Psychlit and Medline databases 	<ul style="list-style-type: none"> • The review included 92 studies • Maltreatment was a risk factor for cognitive and language delays and for poor academic performance. However, it was unclear to what extent these problems might be the result of other variables, such as actual cognitive ability, motivation, or organic problems • A great number of maltreated children were placed in special education classes, typically because of behavioral problems • Research is often limited by the inability to determine the <i>relative</i> contribution of social stressors, SES, maltreatment, family-related factors, and protective factors

even interrupted by maltreatment and can therefore lead to impairments in brain regions responsible for physical, social, and cognitive functioning: (a) insufficient sensory experiences during sensitive periods of brain development (e.g., neglect) and (b) atypical activation of neurons caused by early life stress (e.g., physical abuse, sexual abuse).

Maltreatment characteristics, such as onset, type, and duration, may also influence the extent to which children experience academic difficulties (English et al., 2005; Layne, Bernat, Victor, & Bernstein, 2009; Manly et al., 1994; Veltman & Browne, 2001). With regard to onset, it has been suggested that children who experience maltreatment early in life may exhibit the most pervasive deficits because the brain is developing very rapidly and in a diversity of ways during the first few years of life (Keiley, Howe, Dodge, Bates, & Pettit, 2001). As shown in Table 1, Leiter and Jonsen (1997) found that earlier maltreatment onset was, in fact, associated with an increased likelihood of receiving a special education placement and a greater probability of grade retention. These researchers also found that early maltreatment onset, coupled with a recent maltreatment incident (an indicator of chronicity), was related to the greatest problems in academic achievement, as measured by grade point average, involvement in special education programs, and school dropout. It may be that there is a cumulative effect for individuals who experience early and chronic maltreatment such that the accumulation of their experiences “reaches a threshold and spills out of the confines of family life to affect the child’s school life adversely” (Leiter & Johnsen, 1997, p. 581). Finally, the predominant type of maltreatment experienced by children might also influence the extent to which academic difficulties are observed. Several studies on younger (3- to 6-year-olds; Pears, Kim, & Fisher, 2008) and older (9- to 11-year-olds; Petrenko et al., 2012) maltreated children in out-of-home care found that those who experienced neglect (with or without physical abuse) were at greatest risk for cognitive delays, which are undoubtedly linked with academic achievement. These findings are consistent with a number of reviewed studies (Table 1) and research syntheses (Table 2). Neglect appears to be a particularly severe form of maltreatment as it

typically begins and spans a child’s early years, thereby impacting various critical periods of brain development linked with such foundational processes as attachment, cognitive functioning, and emotion regulation (Culp et al., 1991; Hildyard & Wolfe, 2002; Kurtz, Gaudin, Howing, & Wodarski, 1993).

Within Bronfenbrenner’s *microsystem* and, more specifically, the family setting, research has underscored the importance of the caregiver–child relationship in influencing the association between childhood maltreatment and academic achievement. Negative caregiver–child interactions characterized by authoritarian or inconsistent/unpredictable parenting are frequently found in homes where maltreatment has occurred. This type of caregiving environment can interfere with children’s healthy development in a number of ways, including attachment, emotion regulation, and sense of agency. With regard to the latter, an impaired sense of agency is critical for children’s developing view of themselves as competent and successful in school-related (and more general) tasks (Lowenthal, 2000). This occurs because a sense of agency fosters exploration of the environment, autonomous functioning, and a feeling of self-efficacy (Cicchetti & Toth, 1995; Cicchetti & Valentino, 2006). When children grow up in an inconsistent and unpredictable caregiving environment, they have difficulty developing a sense that they can influence what happens to them and in the world around them, which may contribute to passivity as well as a sense of helplessness and hopelessness (Cole et al., 2005).

Within the family setting, a caregiver’s involvement and expectations may also influence the association between childhood maltreatment and academic achievement. As shown in Table 1, Cheung, Lewin, and Jenkins (2012) found that caregiver education-related variables, including involvement in school-related activities, home literacy environment, and expectations around the value and use of education, were significantly associated with their children’s academic success. The researchers posit that caregiver involvement may promote a stronger caregiver–child relationship, indicate greater sensitivity to the child’s individual needs, and/or help children

internalize the value of education. The findings from Cheung et al. are consistent with others which have found maltreating caregivers to be often unresponsive to their children's academic abilities, interests, and needs, so that appropriate academic support and encouragement are frequently lacking (Berridge, 2012; Hattie, 2009; Veltman & Browne, 2001). Maltreating caregivers may also struggle to provide children with the cognitive and emotional resources to engage and perform well in school (Cicchetti & Toth, 1995, 1997). Indeed, this lack of stimulation has often been proposed to account for the poor school performance that is frequently experienced among children with maltreatment histories (Lowenthal, 2001).

The school setting, which also falls within Bronfenbrenner's microsystem, may also play an instrumental role in influencing the association between childhood maltreatment and academic achievement. The school setting represents one of the most consistent institutions in children's lives (Cicchetti & Toth, 1997), and it can offer an important form of stability and continuity for children who have experienced maltreatment and family disruption (Berridge, 2012). In addition, by offering a structured environment with adults and peers who can serve as role models and supportive figures, the school setting can help buffer some of the detrimental impact of childhood maltreatment. It should also be noted that variables outside of the actual classroom setting may help promote academic success. For example, research has found that children's participation in organized extracurricular activities is linked with the development of personal, social, and cognitive skills, all of which undoubtedly impact academic achievement (Durlak & Weissberg, 2007; Durlak, Weissberg, & Pachan, 2010; Zielinski & Bradshaw, 2006). Finally, a teacher's involvement and expectations can impact children's academic achievement (Hattie, 2009). In sum, it would appear that positive school experiences can help reduce the effects of a stressful home environment, increase children's sense of agency, and promote resilience among children with maltreatment histories (Zielinski & Bradshaw, 2006).

Most of the research on variables that might influence maltreatment effects has focused on ontogenic- and microsystem-level factors, which is understandable, given that these two systems have the most direct impact on children's development and functioning. Nevertheless, for maltreated children and especially for those living in out-of-home care, *exosystem* variables related to child welfare policies and decisions would also appear to be quite important. However, little is known about the manner in which child welfare variables might influence children's outcomes, especially those related to academic success (Conger, Rebeck, & Vera Institute of Justice, 2001). Emerging evidence suggests that placement type may be related to the academic achievement of maltreated children in out of care (Attar-Schwartz, 2009; Cheung, Lewin, & Jenkins, 2012). Cheung et al. (2012) reported that placement type accounted for 12–15% of the variance in academic success among 10- to 15-year-olds. However, the researchers noted that certain types of placements may be more likely associated with the care of children with particular characteristics (e.g., age, sex,

externalizing behaviors), thus suggesting that the influence of placement type on academic success may be explained by these child characteristics. In fact, findings supported this suggestion because the inclusion of child-level variables into the statistical model predicting academic outcomes resulted in the amount of variance explained by placement type becoming statistically insignificant (Cheung et al., 2012).

The limited research on placement type tends to support the beneficial impact of home-based care (i.e., kinship care, nonrelative foster home placement) on academic success, compared to group-based care because the former may provide children with a greater sense of stability and safety (Conger et al., 2001; Stone, 2007). It may also be that the more restrictive nature of group-based care plays a role, as children in such settings have been found to complete fewer years of school and to present with lower educational aspirations in young adulthood (Conger et al., 2001; Mech & Che-Man Fung, 1999). Conger, Rebeck, and Vera Institute of Justice (2001) examined New York City's child welfare database and found no difference between kinship and foster care on children's school attendance, even though kinship caregivers appeared to be less educated and to live in more disadvantaged neighborhoods than foster caregivers. Foster placement, however, was associated with an increased risk of school transfer within the same year of placement, suggesting that placement stability also plays an important role in influencing the academic success of maltreated children in substitute care. In fact, Conger et al. found that children who remained in foster care for a full semester after placement showed improved attendance rates, whereas those with shorter placements (<90 days) were more likely to reenter care, thereby contributing to even more instability. Additional research (Pecora et al., 2003) has also emphasized the importance of placement stability in predicting school success and high school completion.

Childhood Maltreatment and Mental Health

As previously mentioned, we defined educational outcomes as including both academic achievement and mental well-being (i.e., emotional and behavioral functioning). As noted in Slade and Wissow's (2007) model, childhood maltreatment can impair children's mental well-being, which can then influence (and be influenced by) academic achievement. Regarding the relationship between childhood maltreatment and mental health, there is overwhelming research evidence attesting to the deleterious short- and long-term impact of maltreatment on children's mental well-being across a range of emotional (e.g., anxiety, mood) and behavioral (e.g., aggression, social skills deficits, peer relations, substance use) domains (Attar-Schwartz, 2009; Cicchetti & Toth, 1994; Cicchetti & Valentino, 2006; English et al., 2005; Flynn, Ghazal, Legault, Vandermeulen, & Petrick, 2004; Haskett, Nears, Ward, & McPherson, 2006; Kaplan et al., 1999; Kurtz et al., 1993; Shonk & Cicchetti, 2001; Staudt, 2001; Stone, 2007; Veltman & Browne, 2001; Wodarski, Kurtz, Gaudin, & Howing, 1990). Findings indicate that the prevalence of clinically significant

mental health difficulties among maltreated children ranges from 40% to 80% (Burge, 2007; Czincz & Romano, 2009), which is in stark contrast to rates of 14–18% reported for non-maltreated children (Stein, Rae-Grant, Ackland, & Avison, 1994; Waddell, Offord, Shepherd, Hua, & McEwan, 2002).

What explains the relationship between childhood maltreatment and mental health? Several of the same variables previously considered within the context of academic success would also appear to be at play. For example, maltreatment characteristics (Bronfenbrenner's *ontogenic* level), such as onset, type, and duration, have been found to impact children's mental well-being in differential ways and with varying degrees of severity (English et al., 2005; Manly et al., 1994; Newton & Vandeven, 2008; Staudt, 2001). To illustrate, Newton and Vandeven (2008) found that children who experienced maltreatment prior to 6 years of age reported greater depression and anxiety through childhood and into adulthood. In contrast, maltreatment during middle childhood had a greater association with antisocial and externalizing behaviors over time. Information processing biases in children with maltreatment histories are also linked with mental well-being. Maltreated children (especially those who have experienced physical and emotional abuse) have a tendency to perceive greater hostility, threat, danger, and/or aggression in their interactions with others (Cicchetti & Valentino, 2006; Hamby & Grych, 2013). While such perceptions may have served them well within the context of their maltreating caregiving environment, they can seriously interfere with their emotional and behavioral functioning. Relatedly, maltreated children have learned that others cannot be trusted because they can be sources of danger and harm. These perceptions are often carried forth into peer interactions so that maltreated children often exhibit certain interpersonal behaviors (e.g., approach avoidance, hostility/aggression, less prosocial behavior) that make it difficult to develop and/or maintain satisfying relationships (Blaustein & Kinniburgh, 2010; Cicchetti & Valentino, 2006; Shonk & Cicchetti, 2001).

At the level of the *microsystem*, maltreatment almost always implies a level of family dysfunction, which can seriously compromise children's attainment of important developmental tasks. Maltreated children often have an insecure attachment to their primary caregiver, which has implications for their sense of self, of others, and of themselves in relation to others. These representations undoubtedly impact children's expectations with regard to future interactions and relationships with other individuals, which is inextricably linked with mental well-being (Bowlby, 1982; Cicchetti & Valentino, 2006; Stroufe, 1989). Another developmental process that is related to attachment and that is often problematic among maltreated children is that of emotion regulation (Cicchetti & Toth, 1995; Cicchetti & Valentino, 2006; Hamby & Grych, 2013; Haskett et al., 2006). This is not altogether surprising, given that the safe context and effective parenting required to foster adaptive emotion regulation strategies are often inadequate in homes where maltreatment has occurred (Blaustein & Kinniburgh, 2010). Moreover, children who experience

maltreatment live under conditions of continual stress and/or fear so more extreme emotional states (e.g., shutting down, constantly looking for signs of danger) may have become an adaptive and conditioned way of interacting in their environment (Cole et al., 2005). Finally, children learn emotion regulation strategies by observing the various ways in which their caregivers cope with their own feelings. In homes where maltreatment has occurred, caregivers often have their own difficulties with emotion regulation and, as such, their ability to serve as effective role models of how to recognize, identify, regulate, and express emotions can be seriously compromised (Cicchetti & Valentino, 2006; Haskett et al., 2006).

As another example of the link between maltreatment and children's mental health, socioeconomic disadvantage (an *exo-system* variable) is important because such stressful conditions as poverty often compromise effective parenting practices (Cicchetti & Valentino, 2006; Zielinski & Bradshaw, 2006). Moreover, social support, which can help buffer the negative effects of stress, is often limited in families struggling with poverty. Zielinski and Bradshaw's (2006) literature review noted that families in which maltreatment has occurred typically have fewer friends, less contact with other family members, and more short-lasting and nonreciprocal relationships with others. This situation often serves to further exacerbate the detrimental impact of socioeconomic adversity on parenting practices and, subsequently, on children's mental well-being (Cicchetti & Valentino, 2006; Zielinski & Bradshaw, 2006).

The Link Between Children's Academic Achievement and Mental Health

Now that we have considered the association between childhood maltreatment and academic achievement/mental health as well as several variables that might influence these associations, we turn to the final link in Slade and Wissow's (2007) model, namely that of the bidirectional association between children's academic achievement and their mental well-being. We must preface this section by noting that few studies have directly examined this association. Among those studies that have investigated the link between academic achievement and mental health, they have not focused on samples of maltreated children, and they have focused primarily on the impact of mental health difficulties on academic achievement (and not vice versa). To illustrate, Halonen, Aunola, Ahonen, and Nurmi (2006) studied the impact of internalizing difficulties (i.e., anxiety/depression) on academic achievement in a community-based sample of 196 children. Internalizing problems and reading performance were assessed when the children were aged 5–6 (in preschool) and in first grade. Results indicated that internalizing problems predicted subsequent problems in reading performance, both during the transition from preschool to primary school and while in primary school.

Hinshaw (1992) conducted a review of the literature examining the association between externalizing difficulties (i.e., aggression, oppositional behavior, inattention/hyperactivity) and academic achievement in general population samples of

children. Overall findings indicated that externalizing problems were associated with academic underachievement and that the link between childhood inattention/hyperactivity and academic delays was strongly related with later adolescent delinquency and school failure. The author noted that the overlap between externalizing problems and academic underachievement appears to occur early in life (often during the preschool years), suggesting that there may be similar etiological factors, such as language deficits, neurodevelopmental delays, and/or poor verbal skills. Other empirical studies and research syntheses have also lent support to the impact of emotional and behavioral impairments on a variety of academic-related outcomes, including learning delays, lower standardized achievement scores, lower school grades, and school dropout (Crozier & Barth, 2005; Kauffman, 2001; Roeser, Eccles, & Strobel, 1998; Trout, Nordness, Pierce, & Epstein, 2003). In their review of 65 articles published between 1961 and 2000 on the association between children's academic status and emotional/behavioral difficulties, Trout, Nordness, Pierce, and Epstein (2003) found that students with emotional or behavioral difficulties performed below their peers on tasks of reading, math, and writing. These authors concluded that, without targeted interventions, children's emotional and behavioral difficulties are likely to persist over time. Moreover, these children are likely to continue experiencing lower academic scores, lower graduation rates, and lower pursuit of postsecondary education.

Discussion

Children with maltreatment histories often experience difficulties in their educational settings, and these difficulties can span academic achievement as well as mental well-being. The extent to which educational outcomes are impacted by childhood maltreatment is the result of complex and dynamic processes that include the disruption of key developmental processes (e.g., attachment, emotion regulation, sense of agency), the interplay among ecological systems (e.g., families, schools) in which children are embedded, and the bidirectional link between children's academic success and mental health. These various forces that serve to shape educational outcomes become even more complicated among children who not only have experienced maltreatment but who have also been removed from the care of their biological parents, because of serious attachment disruptions and often frequent out-of-home care placements.

What are the implications stemming from this literature review? From a theoretical perspective, it would seem important to conceptualize educational success among maltreated children in terms of both academic achievement and mental well-being, as these domains of functioning are often both impacted by maltreatment and they mutually influence one another. With such a perspective, related research efforts would benefit from a more comprehensive definition of educational success that also incorporates children's mental health functioning as well as a more concerted focus on the ways in which

academic achievement and mental health among maltreated children might work together to promote educational success. This latter point suggests (1) understanding educational success among children with maltreatment histories as the product of a number of emotional and behavioral skills that complement and interact with academic achievement (and associated cognitive abilities) and (2) examining these skills within a broader framework that considers the moderating and mediating roles of developmental and ecological influences.

From an applied perspective, our findings suggest that a number of individuals play important and complementary roles in advancing the educational success of children who have experienced maltreatment, including caregivers (biological and substitute), school personnel, and child welfare professionals (in cases of reported or substantiated maltreatment cases). As such, they must work together in a coordinated manner to ensure that the most appropriate plan is developed (and regularly monitored) to address the multiple academic and mental health needs that are so often found among maltreated children. To this end, these individuals need to create a positive culture of expectations with regard to educational success because this will influence the attitudes and motivation of maltreated children with whom they interact either as caregivers or professionals. Part of this culture would seem to imply engagement and continued involvement in children's educational outcomes (Berridge, 2012).

Another important consideration is that the organizations in which professionals work, such as schools and child welfare agencies, must be committed to efforts aimed at creating trauma-sensitive school environments and promoting educational success among maltreated children. One such example can be found in the report *Helping Traumatized Children Learn* (Cole et al., 2005), which developed a framework with multi-level recommendations (i.e., school-wide infrastructure, culture, and policies; staff training; cross-sectoral links; academic and nonacademic strategies) to assist schools in helping promote the educational success of children with trauma histories. These include recommendations such as the following: (1) identifying/correcting barriers among school personnel (e.g., believing that trauma is a home and not a school problem, providing personnel with resources for handling trauma and also for dealing with its impact on their own well-being) in order to develop a school environment that is sensitive to the needs of children with trauma histories and (2) training school personnel (especially teachers) to recognize/address trauma-related manifestations by helping children with emotion regulation, creating a safe environment through the establishment of routines and rules that are fair and consistently enforced, appropriately managing disruptive behavior and reinforcing acceptable behavior, helping build children's sense of agency (e.g., by building on strengths) and avoiding biases related to the experience of trauma. It would seem critical to invest in such efforts as a way to underscore the important goal of educational success for maltreated children and to develop procedures to ensure that all relevant stakeholders can contribute to this goal.

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The author(s) disclosed receipt of the following financial support for the research, authorship, and/or publication of this article: This article is based on a report provided to the Crown Ward Championship Team of Ottawa as part of a contract to the first author.

References

- Attar-Schwartz, S. (2009). School functioning of children in residential care: The contributions of multilevel correlates. *Child Abuse and Neglect*, 33, 429–440. doi:10.1016/j.chiabu.2008.12.010
- Berridge, D. (2012). Educating young people in care: What have we learned? *Children and Youth Services Review*, 34, 1171–1175. doi:10.1016/j.chilyouth.2012.01.032
- Blaustein, M. E., & Kinniburgh, K. M. (2010). *Treating traumatic stress in children and adolescents*. New York, NY: The Guilford Press.
- Bowlby, J. (1982). *Attachment and loss: Vol. 1. Attachment* (2nd ed.). New York, NY: Basic Books.
- Bronfenbrenner, U. (1979). *The ecology of human development: Experiments by nature and design*. Cambridge, MA: Harvard University Press.
- Burge, P. (2007). Prevalence of mental disorders and associated service variables among Ontario children who are permanent wards. *Canadian Journal of Psychiatry*, 52, 305–314. Retrieved from <http://web.ebscohost.com/ehost/pdfviewer/pdfviewer?vid=3&sid=1f501613-3cdb-4985-ae5-300ec53cd0bb%40sessionmgr12&hid=19>
- Cheung, C., Lewin, K., & Jenkins, J. M. (2012). Helping youth in care succeed: Influence of caregiver involvement on academic achievement. *Children and Youth Services Review*, 34, 1092–1100. doi:10.1016/j.chilyouth.2012.01.033
- Cicchetti, D., & Toth, S. L. (1994). Introduction. In D. Cicchetti & S. L. Toth (Eds.), *Rochester symposium on developmental psychopathology: Disorders and dysfunctions of the self* (Vol. 5, pp. 9–19). Rochester, NY: University of Rochester Press.
- Cicchetti, D., & Toth, S. L. (1995). A developmental psychopathology perspective on child abuse and neglect. *Journal of the American Academy of Child and Adolescent Psychiatry*, 34, 541–565. doi:10.1097/00004583-199505000-00008
- Cicchetti, D., & Toth, S. L. (1997). Transactional ecological systems in developmental psychopathology. In S. S. Luthar, J. Burack, D. Cicchetti, & J. Weisz (Eds.), *Developmental psychopathology: Perspectives on adjustment, risk, and disorder* (pp. 317–349). New York, NY: Cambridge University Press.
- Cicchetti, D., & Valentino, K. (2006). An ecological transactional perspective on child maltreatment: Failure of the average expectable environment and its influence upon child development. In D. Cicchetti & D. J. Cohen (Eds.), *Developmental psychopathology (2nd ed.): Risk, disorder, and adaptation* (Vol. 3, pp. 129–201). New York, NY: John Wiley.
- Cole, S. F., O'Brien, J. G., Gadd, M. G., Ristuccia, J., Wallace, D. L., & Gregory, M. (2005). *Helping traumatized children learn: Supportive school environments for children traumatized by family violence*. Boston: Massachusetts Advocates for Children. Retrieved from <http://www.massadvocates.org>
- Conger, D., Rebeck, A., & Vera Institute of Justice. (2001). *How children's foster care experiences affect their education*. New York: New York City Administration for Children's Services.
- Crozier, J. C., & Barth, R. P. (2005). Cognitive and academic functioning in maltreated children. *Children & Schools*, 27, 197–206. doi:10.1093/cs/27.4.197
- Culp, R. E., Watkins, R. V., Lawrence, H., Letts, D., Kelly, D. J., & Rice, M. L. (1991). Maltreated children's language and speech development: Abused, neglected, and abused and neglected. *First Language*, 11, 377–389. doi:10.1177/014272379101103305
- Czincz, J., & Romano, E. (2009). Examining how the mental health needs of children who have experienced maltreatment are addressed within Ontario Children's Aid Societies. *Canadian Journal of Family and Youth*, 2, 25–51. Retrieved from <http://ejournals.library.ualberta.ca/index/php/cjfy>
- Durlak, J. A., & Weissberg, R. P. (2007). *The impact of after-school programs that promote personal and social skills*. Chicago, IL: Collaborative for Academic, Social, and Emotional Learning.
- Durlak, J. A., Weissberg, R. P., & Pachan, M. (2010). A meta-analysis of after-school programs that seek to promote personal and social skills in children and adolescents. *American Journal of Community Psychology*, 45, 294–309. doi:10.1007/s10464-010-9300-6
- Eckenrode, J., Laird, M., & Doris, J. (1993). School performance and disciplinary problems among abused and neglected children. *Developmental Psychology*, 29, 53–62. doi:0012-1649/93
- Eisen, M. L., Goodman, G. S., Qin, J., Davis, S., & Crayton, J. (2007). Maltreated children's memory: Accuracy, suggestibility, and psychopathology. *Developmental Psychology*, 43, 1275–1294. doi:10.1037/0012-1649.43.6.1275
- English, D. J., Upadhyaya, M. P., Litrownik, A. J., Marshall, J. M., Runyan, D. K., Graham, J. C., & Dubowitz, H. (2005). Maltreatment's wake: The relationship of maltreatment dimensions to child outcomes. *Child Abuse & Neglect*, 29, 597–619. doi:10.1016/j.chiabu.2004.12.008
- Flynn, R. J., & Biro, C. (1998). Comparing developmental outcomes for children in care with those for other children in Canada. *Children & Society*, 12, 228–233. Retrieved from <http://journals1.scholarsportal.info/tmp/5287630569342740019.pdf>
- Flynn, R. J., Ghazal, H., Legault, L., Vandermeulen, G., & Petrick, S. (2004). Use of population measures and norms to identify resilient outcomes in young people in care: An exploratory study. *Child and Family Social Work*, 9, 65–79. doi:10.1111/j.1365-2206.2004.00322.x
- Halonon, A., Aunola, K., Ahonen, T., & Nurmi, J. (2006). The role of learning to read in the development of problem behavior: A cross-lagged longitudinal study. *British Journal of Educational Psychology*, 76, 517–534. doi:10.1348/000709905X51590
- Hamby, S., & Grych, J. (2013). *The web of violence: Exploring connections among different forms of interpersonal violence and abuse*. New York, NY: Springer.
- Haskett, M. E., Nears, K., Ward, C. S., & McPherson, A. V. (2006). Diversity in adjustment of maltreated children: Factors associated

- with resilient functioning. *Clinical Psychology Review*, 26, 796–812.
- Hattie, J. (2009). *Visible learning: A synthesis of over 800 meta-analyses relating to achievement*. London, England: Routledge.
- Hildyard, K. L., & Wolfe, D. A. (2002). Child neglect: Developmental issues and outcomes. *Child Abuse & Neglect*, 26, 679–695. doi:10.1016/S0145-2134(02)00341-1
- Hinshaw, S. P. (1992). Academic underachievement, attention deficits, and aggression: Comorbidity and implications for intervention. *Journal of Consulting and Clinical Psychology*, 60, 893–903.
- Hoch, A. L. (2009). Trauma-focused cognitive behavioral therapy for children. In A. Rubin & D. W. Springer (Eds.), *Treatment of traumatized adults and children: Clinician's guide to evidence-based practice* (pp. 179–253). New York, NY: John Wiley.
- Jonson-Reid, M., Drake, B., Kim, J., Porterfield, S., & Han, L. (2004). A prospective analysis of the relationship between reported child maltreatment and special education eligibility among poor children. *Child Maltreatment*, 9, 382–394. doi:10.1177/1077559504269192
- Kaplan, S. J., Pelcovitz, D., & Labruna, V. (1999). Child and adolescent abuse and neglect research: A review of the past 10 years. Part I: Physical and emotional abuse and neglect. *Journal of the American Academy of Child and Adolescent Psychiatry*, 38, 1214–1222. doi:10.1097/00004583-199910000-00009
- Kauffman, J. M. (2001). *Characteristics of emotional and behavioral disorders in children and youth* (7th ed.). Upper Saddle River, NJ: Merrill/Prentice Hill.
- Keiley, M. K., Howe, T. R., Dodge, K. A., Bates, J. E., & Pettit, G. S. (2001). The timing of child physical maltreatment: A cross-domain growth analysis of impact on adolescent externalizing and internalizing problems. *Development and Psychopathology*, 13, 891–912. Retrieved from <http://journals1.scholarsportal.info/tmp/12478465848982026122.pdf>
- Kendall-Tackett, K. A., & Eckenrode, J. (1996). The effects of neglect on academic achievement and disciplinary problems: A developmental perspective. *Child Abuse & Neglect*, 20, 161–169. doi:10.1016/S0145-2134(95)00139-5
- Kurtz, P. D., Gaudin, J. M., Howing, P. T., & Wodarski, J. S. (1993). The consequences of physical abuse and neglect on the school age child: Mediating factors. *Children and Youth Services Review*, 15, 85–104. doi:10.1016/0190-7409/93
- Layne, A. E., Bernat, D. H., Victor, A. M., & Bernstein, G. A. (2009). Generalized anxiety disorder in a non-clinical sample of children: Symptom presentation and predictors of impairment. *Journal of Anxiety Disorders*, 23, 283–289. doi:10.1016/j.janxdis.2008.08.003
- Leiter, J. (2007). School performance trajectories after the advent of reported maltreatment. *Children and Youth Services Review*, 29, 363–382. doi:10.1016/j.childyouth.2006.09.002
- Leiter, J., & Johnsen, M. C. (1994). Child maltreatment and school performance. *American Journal of Education*, 102, 154–189. doi:10.1016/0195-6744/94/0202-0002
- Leiter, J., & Johnsen, M. C. (1997). Child maltreatment and school performance declines: An event-history analysis. *American Educational Research Journal*, 34, 563–589. doi:10.3102/00028312034003563
- Lowenthal, B. (2000). Child maltreatment: Effects on development and learning. In D. Rothenberg (Ed.), *Issues in early childhood education: Curriculum, teacher education, & dissemination of information* (pp. 365–372). Proceedings of the Lillian Katz Symposium. Champaign, IL: Early Childhood and Parenting Collaborative.
- Lowenthal, B. (2001). *Abuse and neglect: The educator's guide to the identification and prevention of child maltreatment*. Baltimore, MD: Paul H. Brooks.
- Manly, J. T., Cicchetti, D., & Barnett, D. (1994). The impact of subtype, frequency, chronicity, and severity of child maltreatment on social competence and behavior problems. *Developmental Psychology*, 6, 121–143. doi:10.1017/S0954579400005915
- McDonald, T., Allen, R., Westerfelt, A., & Piliavin, I. (1996). *Assessing the long-term effects of foster care: A research synthesis*. Washington, DC: Child Welfare League of America.
- Mech, E. V., & Che-Man Fung, C. (1999). Placement restrictiveness and educational achievement among emancipated foster youth. *Research on Social Work Practice*, 9, 213–228. doi:10.1177/104973159900900206
- Miller, M., Flynn, R. J., & Vandermeulen, G. (2008). *Looking after children in Ontario: Good parenting, good outcomes: Ontario provincial report (Year Six)*. Reports for 0-4, 5-9, 10-15, and 16-20 year olds. Ottawa: Centre for Research on Educational and Community Services, University of Ottawa.
- Newton, A. W., & Vandeven, A. M. (2008). Update on child maltreatment. *Current Opinion in Pediatrics*, 20, 205–212. doi:10.1097/MOP.0b013e328329263d
- Pantin, S., & Flynn, R. J. (2006). *Financial and educational interventions for improving foster youths' postsecondary educational achievement: A review of the literature and proposed policy study*. Report submitted to Human Resources and Social Development Canada, Strategic Partnerships and Program Design, Canada Education Savings Program (Gatineau, QC). Ottawa: Centre for Research on Community Services, University of Ottawa.
- Pears, K., & Fisher, P. A. (2005). Developmental, cognitive, and neuropsychological functioning in preschool-aged foster children: Associations with prior maltreatment and placement history. *Journal of Developmental and Behavioral Pediatrics*, 26, 112–122. doi:10.1097/00004703-200504000-00006
- Pears, K. C., Kim, H. K., & Fisher, P. A. (2008). Psychosocial and cognitive functioning of children with specific profiles of maltreatment. *Child Abuse and Neglect*, 32, 958–971. doi:10.1016/j.chiabu.2007.12.009
- Pecora, P.J., Williams, J., Kessler, R.C., Downs, A.C., O'Brien, K., Hiripi, E., & Morello, S. (2003). *Assessing the effects of foster care: Early results from the Casey National Alumni Study*. Seattle, WA: Casey Family Programs.
- Petrenko, C. L. M., Friend, A., Garrido, E. F., Taussiga, H. N., & Culhanea, S. E. (2012). Does subtype matter? Assessing the effects of maltreatment on functioning in preadolescent youth in out-of-home care. *Child Abuse & Neglect*, 36, 633–644. doi:10.1016/j.chiabu.2012.07.001
- Roeser, R. W., Eccles, J. S., & Strobel, K. R. (1998). Linking the study of schooling and mental health: Selected issues and empirical illustrations at the level of the individual. *Educational Psychologist*, 33, 153–176. doi:10.1207/s15326985ep3304_2

- Rowe, E., & Eckenrode, J. (1999). The timing of academic difficulties among maltreated and nonmaltreated children. *Child Abuse & Neglect*, 23, 813–832. doi:10.1016/S0145-2134(99)00044-7
- Shonk, S. M., & Cicchetti, D. (2001). Maltreatment, competency deficits, and risk for academic and behavioral maladjustment. *Developmental Psychology*, 37, 3–17. doi:10.1037//0012-1649.37.1.3
- Slade, E. P., & Wissow, L. S. (2007). The influence of childhood maltreatment on adolescents' academic performance. *Economics of Education Review*, 26, 604–614. doi:10.1016/j.econedurev.2006.10.003
- Snow, P. C. (2009). Child maltreatment, mental health and oral language competence: Inviting speech-language pathology to the prevention table. *International Journal of Speech-Language Pathology*, 11, 95–103. doi:10.1080/17549500802415712
- Statistics Canada. (2011). *Families and households highlights table, 2011 census*. Retrieved from www12.statcan.gc.ca/census-recensement/2011/dp-pd/hltfst/fam/Pages/highlight.cfm?TabID=1&&Asc=1&PRCode=01&OrderBy=999&Sex=1&tableID=304
- Staudt, M. M. (2001). Psychopathology, peer relations, and school functioning of maltreated children: A literature review. *Children & Schools*, 23, 85–100. doi:10.1093/cs/23.2.85
- Stein, E., Rae-Grant, N., Ackland, S., & Avison, W. (1994). Psychiatric disorders of children "in care": Methodology and demographic correlates. *Canadian Journal of Psychiatry*, 39, 341–347.
- Stone, S. (2007). Child maltreatment, out-of-home placement and academic vulnerability: A fifteen-year review of evidence and future directions. *Children and Youth Services Review*, 29, 139–161. doi:10.1016/j.childyouth.2006.05.001
- Stroufe, L. A. (1989). Pathways to adaptation and maladaptation: Psychopathology as developmental deviation. In D. Cicchetti (Ed.), *Rochester symposium on developmental psychopathology: The emergence of discipline* (Vol. 1, pp. 13–40). Hillsdale, NJ: Lawrence Erlbaum.
- Tideman, E., Vinnerljung, B., Hintze, K., & Isaksson, A. A. (2011). Improving foster children's school achievements: Promising results from a Swedish intensive study. *Adoption & Fostering Journal*, 35, 44–56. doi:10.1177/030857591103500106
- Toth, S. L., & Cicchetti, D. (2006). Promises and possibilities: The application of research in the area of child maltreatment to policies and practices. *Journal of Social Issues*, 62, 863–880. doi:10.1111/j.1540-4560.2006.00490.x
- Trocme, N., Fallon, B., MacLaurin, B., Hélie, S., & Turcotte, D. (2010). *Canadian incidence study of reported child abuse and neglect—2008: Major findings*. Ottawa, Canada: Public Health Agency of Canada.
- Trout, A. L., Hagaman, J., Casey, K., Reid, R., & Epstein, M. H. (2008). The academic status of children and youth in out-of-home care: A review of the literature. *Children and Youth Services Review*, 30, 979–994. doi:10.1016/j.childyouth.2007.11.019
- Trout, A. L., Nordness, P. D., Pierce, C. D., & Epstein, M. H. (2003). Research on the academic status of students with emotional and behavioral disorders: A review of the literature from 1961–2000. *Journal of Emotional and Behavioral Disorders*, 11, 198–210. Retrieved from <http://journals2.scholarsportal.info/tmp/12803648074091756074.pdf>
- U.S. Department of Health and Human Services. (2011). *Child maltreatment 2010*. Washington, DC: Government Printing Office.
- Veltman, M. W. M., & Browne, (2001). Three decades of child maltreatment: Implications for the school years. *Trauma, Violence, & Abuse*, 2, 215–239. doi:10.1177/1524838001002003002
- Waddell, C., Offord, D. R., Shepherd, C. A., Hua, J. M., & McEwan, K. (2002). Child psychiatric epidemiology and Canadian public policy-making: The state of the science and the art of the possible. *Canadian Journal of Psychiatry*, 47, 825–832. Retrieved from <http://web.ebscohost.com/ehost/pdfviewer/pdfviewer?vid=3&sid=2e9ffbbd-192a-4d78-97d7-7429afed9dc2%40sessionmgr10&hid=19>
- Wodarski, J. S., Kurtz, P. D., Gaudin, J. M., & Howing, P. T. (1990). Maltreatment and the school-age child: Major academic, socioemotional, and adaptive outcomes. *Social Work*, 35, 506–513. Retrieved from <http://search.proquest.com/docview/215269557/fulltextPDF/13DE67C3ABF598E2A42/1?accountid=14701>
- Zielinski, D. S., & Bradshaw, C. P. (2006). Ecological influences on the sequelae of child maltreatment: A review of the literature. *Child Maltreatment*, 11, 49–62. doi:10.1177/1077559505283591

Author Biographies

Elisa Romano is an Associate Professor in the School of Psychology at the University of Ottawa. She is also a registered clinical psychologist in Ontario, Canada. Her primary interests are in implementing and evaluating interventions that improve the well-being of maltreated children.

Lyzon Babchishin is a clinical psychology doctoral student at the University of Ottawa. Her research interests lie in better understanding childhood multiple victimization, including its ecological risk factors and psychosocial correlates.

Robyn Marquis received her clinical psychology doctoral degree from the University of Ottawa in 2013. She has a special interest in research and clinical work with children and families who have experienced maltreatment, depression, anxiety, behavioral disruptions, and social skills problems.

Sabrina Fréchette is a clinical psychology doctoral student at the University of Ottawa. Her research interests are in studying child physical punishment, including its prevalence and impact on children's behavioral and emotional well-being.