J Fam Viol (2017) 32:189–196
DOI 10.1007/s10896-016-9863-6

ORIGINAL ARTICLE

The Impact of Child Abuse Potential on Adaptive Functioning: Early Identification of Risk

Benjamin D. Freer[1] · **Ginny Sprang**[2] · **Debbie Katz**[2] · **Clarissa Belle**[2] · **Kelsey Sprang**[3]

Published online: 19 September 2016

Abstract Previous research has investigated the deleterious effects of child maltreatment on child development; however, little research has examined the development of children who live with caregivers who are at risk of maltreatment on child development outcomes. This study utilized self-report data from caregivers that included the Child Abuse Potential Inventory (CAPI), Parenting Stress Inventory-Short Form (PSI/SF), and Adaptive Behavior Assessment System-2nd Edition (ABAS-II) for 116 children ages 3-12 from a rural, Appalachian community. Caregivers with lower child abuse potential, children who used fewer school services, older children, and caregivers with lower household income had better total adaptive skills. Caregivers with lower child abuse potential, children who used fewer school services and older children had better functioning on the academic skills subscale. Children who used fewer school services, were older, and had lower family income had greater self-care skills. Finally, children who used fewer school services had greater communication skills. Parent-child dysfunction was not related to child development outcomes. The findings demonstrate that educators are in a unique position to intervene and support children at risk of maltreatment.

Keywords Child maltreatment · Adaptive functioning · School services · Rural community

✉ Benjamin D. Freer
bfreer@fdu.edu

Ginny Sprang
sprang@uky.edu

Debbie Katz
Debra.katz@uky.edu

Clarissa Belle
Clarissa.belle@uky.edu

Kelsey Sprang
ks1596@nova.edu

[1] Fairleigh Dickinson University, Madison, NJ, USA

[2] University of Kentucky, Lexington, KY, USA

[3] Nova Southeastern University, Fort Lauderdale, FL, USA

Childhood experiences of maltreatment have been associated with long-term emotional, behavioral and physical health problems (Felitti et al. 1998; Frodi and Smetana 1984; Silverman et al. 1996; Springer et al. 2007). Children who are maltreated, especially in the first three years of life, are also at increased risk for developmental problems including changes in adaptive functioning, communication, cognition and language (Barth et al. 2008). It may be hard, especially as children age, to differentiate developmental problems from the impact of depression, anxiety, dissociation and behavior problems as well as the impact of other forms of adversity such as poverty, family disruption and lack of access to resources for treatment. However, there is increasing evidence that maltreatment itself may cause impaired development through its effect on the developing brain (Teicher et al. 2002). Traumatic stress leads to altered development through the activation of psychological and physiological stress-response systems, which, result in long-term neurobiological changes (Bremner 2003; DeBellis and Thomas 2003; McEwen 2000; Pechtel and Pizzagali 2011; Twardosz and Lutzker 2010).

While childhood maltreatment has been shown to definitively impact the developmental competence of young children (Enlow et al. 2013), there is a need to understand the development of children living with a caregiver who have not had a substantiated case of maltreatment but are living *at risk* of maltreatment. Elucidating the effects of living with a

potentially maltreating caregiver could bring attention to possible points of prevention for children prior to actual incidents of physical abuse or neglect. If there are deleterious developmental effects of living with a potentially maltreating caregiver, the risks to children in their care may be reduced by providing appropriate medical, educational or psychological services to the caregiver and child.

A widely used screening tool that assesses potential parental maltreatment is the Child Abuse Potential Inventory (CAPI) (Milner 1986, 1994). Elevated CAPI scores are associated with characteristics found in parents who are physically abusive. Caregivers with elevated CAPI scores often report experiences of being the victim of child abuse, of witnessing abuse, and of having poor social support, high physiological reactivity to stressful stimuli, low self-esteem and authoritarian disciplinary practices (Milner et al. 1984). Although the CAPI assesses child physical abuse potential, elevated CAPI scores are highly correlated with actual abuse occurrence (Chaffin and Valle 2003; Milner 1994). In addition, the CAPI has been found to better assess static predictive ability for abuse rather than dynamic predictive validity over time (Chaffin and Valle 2003).

Child maltreatment is abuse (physical, emotional, or sexual), neglect, or exploitation of children that results in actual or potential harm to a child's safety, health, development, or dignity. In attempting to understand the characteristics of parents with high child abuse potential, it is necessary to have a framework or model that accounts for the overlapping individual and environmental factors that lead to child maltreatment. Two models that have been studied are the developmental-ecological model (Bronfenbrenner 1977) and the cumulative risk model (Appleyard et al. 2005). The developmental-ecological model assumes that maltreatment is the result of multiple interacting factors from the three conceptual domains (developmental-psychological, immediate, and broader domain) including child, family, community and sociocultural characteristics. The developmental-psychological domain refers to the factors that are connected to the family setting, such as parental past experience of trauma or parental stress for the caregiver, and child age or disruptive behavior for the child. The immediate domain is based upon the family environment (i.e., living conditions, socioeconomic status) and parent-child interaction. Finally, the broad domain incorporates the more global nature of the family within the community and social support system. The correlational and causal relationships between the risk factors in the three domains must be taken into account when trying to understand the antecedents to child maltreatment (Belsky 1993).

The cumulative risk model assumes that the greater the number of risk factors present, the greater the risk is for a negative outcome. Unlike the developmental-ecological model, the cumulative risk model measures the total number of risk factors present rather than weighted scores on individual risk factors (Evans et al. 2013). The inclusion of the total number of risk factors, rather than focusing on each specific risk factor, is important due to the high likelihood of co-occurring risk factors. There has been increasing empirical support for the cumulative risk model for child maltreatment (Appleyard et al. 2005; Beagle et al. 2010). Caregiver risk factors for child maltreatment include having a personal history of child abuse, low parenting satisfaction, feelings of loss of control over childrens' behavior and negative attributions about the child. Parental substance abuse, depression and other mental health problems are also significant risk factors. Child risk factors include medical, intellectual or behavioral problems that increase caregiver burden (Evans et al. 2013; Masten and Shaffer 2006). While most severe maltreatment occurs in children from birth to age three, the risk of maltreatment increases with a child's age. Data from a 2011 national survey indicate that 13.8 % of children are maltreated each year and 25.6 % experience some form of maltreatment during childhood (Finkelhor et al. 2013). In recent statistics on child maltreatment in the U.S., there was no gender difference for maltreated children, and the vast majority (>80 %) of maltreating adults were parents (as opposed to unrelated adults) between the ages of 18–44 years (U.S. Department of Health and Human Services 2013). Sociocultural risk factors for child maltreatment include poverty, unemployment, social isolation, elevated levels of violence, and housing instability. Living in a rural community has not been considered a typical risk factor for maltreatment, and, in fact, may be considered as both a protective factor as well as a risk factor. Rural communities may have a close-knit system of support, a culture of self-reliance and engagement with faith-based organizations that could serve as protective factors. These positive aspects of rural communities may also impact negatively through a sense of wariness about outside intervention along with concerns around confidentiality and reporting. Thus, concern of community outsiders, in addition to limited job opportunities, high rates of poverty, and high rates of substance abuse may increase risk of child maltreatment by reducing the development or access to social or mental health services difficult.

While it is generally acknowledged that child maltreatment results in developmental problems, the extent and nature of those problems, especially in school age children, are unknown. It is further unknown what impact potentially maltreating parents have on their children. In studies comparing children with substantiated maltreatment to those with unsubstantiated maltreatment, the proportion with a low score on a developmental measure was similar. The children with unsubstantiated maltreatment, however, received fewer services (Barth et al. 2008; Drake 1995; Drake et al. 2003; NSCAW Research Group 2002). These studies confirm that developmental outcome does not differ with substantiation status. This raises the possibility that living with a potentially

maltreating parent is as deleterious to development as living with a parent who has a substantiated case of maltreatment.

This project was designed to examine several seldom studied groups: (1) children of parents with high child abuse potential (2) school age children and (3) children in rural communities. It examines the association between CAPI scores, demographic measures (age, gender, household income), service utilization and development as measured by the total score on the Adaptive Behavior Assessment System (ABAS) as well as subscales (communication, academic function and self-care skills). The ABAS is a comprehensive measure of adaptive behaviors and skills to understand child functioning.

It was hypothesized that higher child abuse potential scores in caregivers would predict lower child adaptive functioning scores in the areas of communication, academic function, and self-care, controlling for child age and gender, and family income. It was further predicted that the relationship between child abuse potential and child adaptive functioning would remain significant, controlling for parental stress using the caregiver perception of a dysfunctional parent-child relationship scale.

Methods

Procedure

Face-to-face interviews were completed with 190 consenting caregivers of children aged 3–12, in a rural, Appalachian region. Recruitment for the study took place at naturally occurring congregate sites for caregivers such as reading fairs, open houses, parent-teacher conference days, and other elementary school gatherings in the region via flyers that described the purpose of the study, and the logistics of participation (time needed, incentive offered). Potential respondent who responded affirmatively that they were interested in participating in the study were escorted to a private location where they completed informed consent procedures, and the interview. Interviewees were included in the study if they were the primary caregiver of a child between the ages of 3 and 12 that was a student in the school district. Consenting participants were logged on a participant roster to prevent duplicate enrollment in the study. In this study, a caregiver was considered to be the person primarily responsible for the child's care. This could include the child's biological parent, custodian, guardian or foster parent. If the interviewee was the primary caregiver for more than one child within the specified age range, additional interviews could be completed on each child. Following completion of the interview, the respondents were invited by mail to complete the Adaptive Behavioral Assessment System-II for each child included in the study. A total of 116 completed, useable ABAS measures were included in subsequent analyses.

Consenting caregivers were provided a $25 incentive to complete each interview. A Certificate of Confidentiality was obtained from the US Department of Health and Human Services to safeguard against violations of participant confidentiality, including court order or subpoena. Study personnel responsible for interviewing caregivers were masters or doctoral level clinicians who had completed a University required human subject's protection training. All protocols were approved by the University's Institutional Review Board.

Measurement

The Child Abuse Potential Inventory (CAPI; Milner 1990) is a 160-item questionnaire in a self-report form that includes a 77-item abuse scale, which yields a total score to quantify the degree to which the respondent shares interpersonal characteristics with known physical abusers. Higher total abuse scores indicate an increased risk of perpetrating acts of physical abuse. A third-grade reading level is required to complete the measure.

The CAPI also contains three validity scales that are used to calculate a response distortion indexes (if applicable): the faking-good, faking-bad, and random responding. Only valid CAPI profiles were included in the sample. The total abuse potential scale has high internal consistency reliabilities that range from .92 to .96 for controls and .95 to .98 for abusers.

Parenting Stress Inventory-Short Form (PSI/SF) (Abidin 1995) was used to quantify the level of parenting stress in specific caregiver-child dyads. The 36 item PSI-SF consists of three scales: the Total Parental Distress Score, the Difficult Child Characteristics, and the Dysfunctional Parent-Child Interaction, though only the latter was used in this study to avoid a tautology phenomenon. Higher scores on the PSI Dysfunctional Parent-Child Interaction subscale indicate higher levels of problematic parent-child interactions. Research by Haskett, Ahern, Ward, & Allaire (2006), and Loyd & Abidin (1985) supports the internal consistency of the subscale and adequate reliability.

The *Adaptive Behavior Assessment System-Second Edition (ABAS-II)* (Harrison and Oakland 2003) was used to evaluate adaptive skills in the area of communication, academic function, and self-care. Caregiver used a behavior rating scale (0 = is not able, 1 = never or almost never when needed, 2 = sometimes when needed, 3 = always or almost always when needed) to describe their child's adaptive functioning, so that higher score indicate a higher level of functioning. Reliability coefficients ranging from .94 to .97 have been noted for the subscales (Harrison & Oakland 2003).

Demographics Child age was coded as a continuous variable representing their age at their last birthday, gender was coded 1, female and 2, male. Combined family income was grouped into five categories (1, less than $10,000 year; 2, $10,000–$20,000; 3, > $20, 000- $35,000; 4= > $35,000 - $50,000; 5, > $50,000).

Sample

Children in this study ranged in age from 3 to 12 years with a mean of 5.87 (SD = 1.81). Additionally the caregivers in this study ranged from 23 to 83 years of ages with a mean of 37.43 (SD = 8.96). The sample of children represented was primarily female (74.2 %) and White (96 %) with the remainder identifying as Black or African American (2.4 %), Asian (.8 %), or Native Hawaiian (.8 %). Nearly three quarters of the caregiver sample were married (72.6 %), while the remainder reported being divorced, separated, widowed, or never married (27.4 %). The mean highest grade or year of school that the caregiver completed was 12.90 (SD = 2.97). Nearly a third completed high school (30.9) while 27.6 % ceased education before graduation. Additionally, 8.1 % completed an undergraduate degree with 11.3 % pursuing graduate education. Nearly half of caregivers (49.1 %) reported their annual household income to be $25,000 or less, with nearly a quarter (22.4 %) reporting $15,000 or less. However, 31.5 % claim an annual household income of $50,000 or more and the remaining caregivers (19.4 %) reporting income between $25,000 and $50,000.

Results

Descriptive Findings

As part of the data collection process, caregivers reported on whether, to their knowledge, their child qualified for or received school services. The study sample revealed an elevated rate of children who qualified for at least one school service with over a third of the caregivers (37.3 %) reporting that their child qualified. In addition, nearly half of the caregivers (47.4 %) reported that their child was receiving services for problems at school. Of the the children who were using school services, 45.5 % of children used 1 school service, 29.1 % of children used 2 or 3 school services, and 25.5 % of children used 4 or more school services. In addition, over a third of the caregivers (35.3 %) reported their child qualified for services and was utilizing services in the school, 5.2 % reported their child qualified for services but was not utilizing these available services, 15.5 % of caregivers reported that their child was using school services even though they reported that their child did not qualify for school services, and 48.3 % of caregivers reported their child did not qualify for nor use school services (see Table 1).

Relationship between CAPI and ABAS

The analyses were conducted in a two steps. First, bivariate correlations were conducted to identify demographic variables that were related to the parent-report on the ABAS. The demographic variables included in the correlations were child gender, child age, household income, parent age, and parent income. The bivariate correlations resulted in the inclusion of 3 of these demographic variables (child gender, child age, and household income) in the further analyses. Second, a hierarchical linear regression was conducted for each of the ABAS measures (total score, communication, academic function, and self-care) resulting in a total of 4 hierarchical regressions with the 3 demographic variables entered at Step 1, and the CAPI inventory total score, PSI parent-child interaction dysfunction, and index of school services used by the child at Step 2.

The relationship between the total score on the ABAS and each of the three subscales (communication, academic function, and self-care) to CAPI Total score was examined using four separate hierarchical linear regressions when controlling for demographic variables (child age, child gender, and household income). The overall model aimed at predicting the total score on the ABAS was significant, $F(6, 115) = 8.683$, $p < .001$, and accounted for 32.3 % of the variability. As predicted, the CAPI Total score ($\beta = -.212$, $p < .05$) accounted for significant variance above and beyond PSI Parent-Child Dysfunctional Interaction scale and child gender, such that caregivers with a lower child abuse potential had children with better total scores on the ABAS. In addition, the index for school services used ($\beta = -.307$, $p < .01$) and age of the child ($\beta = .241$, $p < .01$) were related to better total scores on the ABAS, such that children who used fewer school services and were older had better total scores on the ABAS. Surprisingly, an inverse relationship between family income and total scores on the ABAS was found ($\beta = -.159$, $p < .05$). As the family income of the caregivers decreased, there were increases in the total scores on the ABAS for these children (see Table 2).

Similar hierarchical linear regression models were then conducted with each of the three subscales of the ABAS

Table 1 Descriptive Statistics for ABAS, PSI Parent-Child Dysfunctional Interaction, and CAPI Total

	M	*SD*
ABAS Total	182.10	27.79
Academic Function	52.15	14.64
Communication	65.01	8.90
Self-Care	64.95	7.49
PSI Parent-Child Dysfunctional Interaction	42.18	31.75
CAPI Total	83.51	87.31
Total Service Utilization Index	1.08	1.56

Table 2 Results of Hierarchical Regressions for total score on ABAS

	ΔR^2	*p*	*β*	*p*
Step 1 (Demographics)	.084	< .05		
Step 2 (CAPI Total & PSI Parent-Child Dysfunction)	.239	< .001		
Total Model	.323	< .001		
Child Age			.241	< .01
Child Gender			-.112	*ns*
Family Income			-.159	< .05
PSI Parent-Child Dysfunctional Interaction			-.112	*ns*
Index of school services used			-.307	< .01
CAPI Total score			-.212	< .05

(communication, academic function, and self-care). The overall model for each of the three subscales were significant (communication: $F(5, 120) = 7.093$, $p < .001$, $r^2 = 28.1$ %; academic function: $F(5, 120) = 6.872$, $p < .001$, $r^2 = 27.4$ %; self-care: $F(5, 120) = 7.157$, $p < .001$, $r^2 = 28.3$ %). The findings for the communication subscale revealed no significant relationship with the CAPI total score ($\beta = -.090$, $p > .05$). However, the index of school services was significantly related ($\beta = -.392$, $p < .001$), indicating that children who used fewer school services were reported to have higher scores on the ABAS. For the academic function subscale, the CAPI total score was significantly related to the ABAS ($\beta = -.252$, $p < .05$), with higher scores on the CAPI related to lower scores on the ABAS. In addition, the index of school services ($\beta = -.234$, $p < .05$) and age of the child ($\beta = .196$, $p < .05$) were significantly related to ABAS scores. Children who used fewer services and older children were reported to have higher scores on the academic subscale of the ABAS. Finally, the self-care subscale was not significantly related to the CAPI total score ($\beta = -.187$, $p > .05$). The index of school services ($\beta = -.217$, $p < .05$) and age of the child ($\beta = .353$, $p < .001$) were both significantly related to ABAS scores. Surprisingly, family income was inversely related to ABAS scores ($\beta = -.229$, $p < .01$), indicating that as caregiver family income decreased, caregivers reported that their children had higher scores on the ABAS self-care scale (see Tables 3, 4, and 5).

Discussion

This study investigates the interplay of child abuse potential, caregiver perceptions of a dysfunctional parent child relationship, and a child's adaptive functioning. Within the domains of a child's communication skills, academic functioning, and self-care practices, the study hypotheses were supported. This community sample of young, rural children with diverse school-based service utilization patterns provided a useful database of information about how these predictor variables operate to create risk for poor adaptive functioning in a heterogeneous group of children. Despite considerable research and practical interest in child development in many service systems, the role of child abuse potential on adaptive functioning has not been fully explored, making this investigation one of the first to explore this link.

Much of the research literature focuses on predictors of risk versus the impact of abuse potential on the well-being and functioning of children. This study determined that adaptive functioning can be predicted by the caregiver's child abuse potential scores- a variable that includes both negative aspects of caregiving (physiological reactivity, inadequate knowledge of child development, negative affect and attitudes, maladaptive behavior, lack of responsiveness, etc.) with the absence of abuse buffering factors such as healthy social support (Milner 1994). The findings of this study extend the previous work

Table 3 Results of Hierarchical Regressions for Communication subscale of the ABAS

	ΔR^2	*p*	*β*	*p*
Step 1 (Demographics)	.047	*ns*		
Step 2 (CAPI Total & PSI Parent-Child Dysfunction)	.234	< .001		
Total Model	.281	< .001		
Child Age			.133	*ns*
Child Gender			-.072	*ns*
Family Income			-.055	*ns*
PSI Parent-Child Dysfunctional Interaction			-.134	*ns*
Index of school services used			-.392	< .001
CAPI Total score			-.090	*ns*

Table 4 Results of Hierarchical Regressions for Academic Functioning subscale of the ABAS

	ΔR^2	*p*	β	*p*
Step 1 (Demographics)	.062	*ns*		
Step 2 (CAPI Total & PSI Parent-Child Dysfunction)	.212	< .001		
Total Model	.274	< .001		
Child Age			.196	< .05
Child Gender			-.111	*ns*
Family Income			-.151	*ns*
PSI Parent-Child Dysfunctional Interaction			-.105	*ns*
Index of school services used			-.234	< .05
CAPI Total score			-.252	< .05

that documents child abuse as a robust predictor of a host of maladaptive behavioral and developmental outcomes in children (Rogosch et al. 2011; Kim and Cicchetti 2010; Cicchetti and Toth 2005) by identifying child abuse potential, a marker of potential harmful caregiving, that can be used to identify children who are at risk of poor adaptive functioning outcomes, prior to the abuse occurring.

Previous studies investigating the role of child abuse potential on family functioning have found that parents who report higher levels of child abuse potential have disrupted attachment relationships with their children (Rodriguez and Tucker 2011), exhibit significantly more negative parenting behavior (Haskett et al. 1995) and endorse higher levels of parenting stress (Smith et al. 2001). Although studies by Thompson et al. (2003) and Rodriguez and Eden (2008) connect negative parenting characteristics to adverse behavioral outcomes in children, this study indicates the impact may be more pervasive. These findings suggest the effects of negative parenting extend beyond disruptions in parental functioning and relational interactions, impacting the child's developmental trajectory, specifically in the areas of self-care practices and academic functioning. Since these domains of adaptive functioning are targets for repeated performance assessment in young children throughout their life, achievements (or the lack thereof) in these areas are the foundations of self-worth, self-efficacy, and from a transactional perspective, may create risks of future child maltreatment. Dix (1991) explains, "children from every distressed family type exhibit more difficult interaction patterns than average children" (p. 12). He goes on to explain that children with poor adaptive skills may engage in plan-violating behavior, thereby eliciting greater negative affect from their parents (Dix 1991). In this way, interrupting the impact of negative parenting on child adaptive functioning by identifying and intervening early with parents with high child abuse potential scores may have the added benefit of disrupting the transactional process that leads eventually to child maltreatment if unchecked.

In addition to the findings that supported our a priori hypotheses, we also found an unexpected but significant inverse relation between family income with the total ABAS and self-care ABAS subscale. Importantly, there were no differences found for the communication or academic function subscale suggesting that the difference on the total ABAS was due to self-care, and as such, our attempt to understand this finding is focused upon the self-care subscale. As stated, this finding was unexpected; however, past research that examined the role of child care and child outcomes may offer some insight. Research from the NICHD Early Child Care Report (1998) found that higher quality of child care was connected to greater social competence for children at 2 years of age and greater compliance at 3 years of age, both factors likely to be essential to improved self-care. These findings are important when

Table 5 Results of Hierarchical Regressions for Self-Care subscale of the ABAS

	ΔR^2	*p*	β	*p*
Step 1 (Demographics)	.154	< .001		
Step 2 (CAPI Total & PSI Parent-Child Dysfunction)	.128	< .001		
Total Model	.283	< .001		
Child Age			.353	< .001
Child Gender			-.115	*ns*
Family Income			-.229	< .01
PSI Parent-Child Dysfunctional Interaction			-.050	*ns*
Index of school services used			-.217	< .05
CAPI Total score			-.187	*ns*

considering that child care has been found to be less beneficial for children compared to caregiver care, especially when the child enters child care prior to 1 year of age (Desai et al. 1989). It is possible that low income families in rural settings are more likely to use caregiver care which result in children with greater self-reliance and thus, greater levels of reported self-care.

Finally, the finding that children using fewer school services and older children had greater adaptive functioning suggests the adaptive functioning scale used in the present study, ABAS, is effectively measuring developmental performance for communication, academic function, and self-care. In addition, children who utilized more school services were reported to have more severe adaptive functioning deficits suggesting that the school districts are more likely to provide in-school services to children developmentally behind their peers.

Educators are among the first service providers to interact with the family system and they are in a unique position to intervene and support children who have been maltreated. Unfortunately, fulfilling the obligation of mandatory reporting is the extent of many educators' behavior when faced with issues of child maltreatment. The use of mandatory reporting in the educational system is helpful but alone insufficient. School personnel need to develop a more comprehensive and sophisticated understanding of child abuse and its correlates, such as psychological profile of child abusers. This is a rarely discussed area in the educational setting, and a better understanding of this psychological profile can aid educators in identifying at risk families, as well as providing education, modeling, and referral services to assist parents in understanding how their disposition and psychological presentation might lead to negative outcomes. Some educational based programs have been successful in reducing parental maladaptive psychological factors associated with negative child outcomes. For instance, Chazan-Choen, Ayoub, Pan, Roggman, and Raikes (2011) found that over time a comprehensive intervention program that provided services to children and parents within the educational and home setting, specifically Early Head Start, had a positive impact on maternal depression.

Some may argue that an attempt to understand and enhance parent's psychological functioning is beyond the scope of the educational system. However, addressing student's educational and developmental needs outside the context of their life experiences will likely lead to minimal improvements (Nation et al., 2003). In order to maximize the educational potential of students, school personnel need to be cognizant of and address child, as well as caregiver factors that may impede educational and developmental growth such as, maladaptive caregivers' behaviors and dispositions.

Teachers can also assist students by creating a healthy socialization experiences and modeling emotional and behavioral control in their classroom. A predictable, responsive, and flexible classroom environment can act as protective factors for students, and Baker (2006) found that the protective potential of the positive student-teacher interactions was more evident for vulnerable students with behavioral and emotional problems. Therefore, the student-teacher relationship will likely be an influential factor for children reared by parents with rigid behavioral and emotional regulation patterns (Rodriguez & Eden, 2007; Lopez, Moreland, Begle, Dumas, & de Arellano, 2012).

Limitations

Several study limitations must be acknowledged. First, the generalizability of the study is limited given that the study was conducted in one rural community and thus there is a possibility that these findings may be unique to this community. However, due to the extreme paucity of research in rural communities, the present study serves as evidence of the unique experiences of people in rural communities. It is our hope that this research will motivate others to examine understudied communities to extend these findings. Secondly, the data collected were all self-report from the caregivers and thus are open to possible misrepresentations of the true state of the child's experiences and performance, the home environment, and the caregiver's opinion. For instance, members of rural communities, the participants of the present study, may be more wary of outsiders, and thus provide information in an effort to appear more socially desirable to the researchers. Finally, caregivers who had multiple children between the ages of 3–12 reported on all of these children. This resulted in some children having identical caregiver data in the analyses (i.e., the children had the same caregiver). While this could have resulted in the data being biased, and should be considered for future research, the importance of including as many children in the community as possible was deemed of greater importance to the study.

In spite of these limitations, we conclude that our findings demonstrate that caregivers with a greater child abuse potential have deleterious effects on the adaptive functioning of children, above and beyond parent-child dysfunction. With this knowledge, utilizing child abuse potential as a marker for negative parenting may effectively function as a way to identify children at risk prior to child maltreatment. The early identification of children at-risk for maltreatment offers the opportunity for school or clinical interventions to provide medical, educational, or psychological services to the caregiver and child. These findings are especially important as they add to the dearth of research in rural communities.

References

Appleyard, K., Egeland, B., van Dulmen, M., & Sroufe, A. (2005). When more is not better: the role of cumulative risk in child behavior outcomes. *The Journal of Child Psychiatry, 46*, 235–245.

Abidin, R. R. (1995). *Parenting Stress Index* (3rd ed.): *Professional Manual*. Psychological Assessment Resources, Inc.: Odessa, FL.

Barth, R. P., Scarborough, A., Lloyd, E. C., Losby, J., Casanueva, C., & Mann, T. (2008). *Developmental status and early intervention service needs of maltreated children*. Washington, DC: U.S. Department of Health and Human Services, Office of the Assistant Secretary for Planning and Evaluation Retrieved April 18, 2014 from http://aspe.hhs.gov/hsp/08/devneeds/report.pdf.

Beagle, A. M., Dumas, J. E., & Hanson, R. F. (2010). Predicting child abuse potential: an empirical investigation of two theoretical frameworks. *Journal of Clinical Child and Adolescent Psychology, 39*, 208–219.

Belsky, J. (1993). Etiology of child maltreatment: A developmental-ecological analysis. *Psychological Bulletin, 114*, 413–434.

Bremner, J. D. (2003). Long-term effects of childhood abuse on brain and neurobiology. *Child and Adolescent Psychiatric Clinics of North America, 12*, 271–292. doi:10.1016/S1056-4993(02)00098-6.

Bronfenbrenner, U. (1977). (1977). Toward an experimental ecology of human development. *American Psychologist, 32*, 513–531.

Chaffin, M., & Valle, L. A. (2003). Dynamic prediction characteristics of the Child Abuse Potential Inventory. *Child Abuse & Neglect, 27*, 463–481.

Cicchetti, D., & Toth, S. (2005). Child maltreatment. *Annual Review of Clinical Psychology, 1*, 409–438.

DeBellis, M., & Thomas, L. (2003). Biologic findings of post-traumatic stress disorder and child maltreatment. *Current Psychiatry Reports, 5*, 108–117.

Desai, S., Chase-Lansdale, P., & Michael, R. (1989). Mother or market? Effects of maternal employment on the intellectual ability of 4-year-old children. *Demography, 26*, 545–561.

Dix, T. (1991). The affective organization of parenting: Adaptive and maladaptative processes. *Psychological Bulletin, 110*(1), 3–25.

Drake, B. (1995). Associations between reporter type and assessment outcomes in child protective services referrals. *Children and Youth Services Review, 17*(4), 503–522.

Drake, B., Jonson-Reid, M., Way, I., & Chung, S. (2003). Substantiation and recidivism. *Child Maltreatment, 8*, 248–260.

Early child care and self-control, compliance, and problem behavior at twenty-four and thirty-six months. The NICHD Early Child Care Research Network. (1998). *Child* Development, 69(4), 1145–1170.

Enlow, M. B., Blood, E., & Ireland, B. (2013). Sociodemographic risk, developmental competence, and PTSD symptoms in young children exposed to interpersonal trauma I early life. *Journal of Traumatic Stress, 26*, 686–694.

Evans, G. W., Li, D., & Whipple, S. S. (2013). Cumulative risk and child development. *Psychological Bulletin, 139*(6), 1342–1396.

Felitti, V. J., Anda, R. F., Nordenberg, D., Williamson, D. F., Spitz, A. M., Edwards, V.,.. . & Marks, J. S. (1998). Relationship of childhood abuse and household dysfunction to many of the leading causes of death in adults: The adverse childhood experiences (ACE) study. American Journal of Preventive Medicine, 14, 245–258. doi:10.1016/S0749–3797(98)00,017–8.

Finkelhor, D., Turner, H. A., Shattuck, A., & Hamby, S. L. (2013). Violence, crime, and abuse exposure in a national sample of children and youth. *JAMA Pediatrics, 167*, 614–621.

Frodi, A., & Smetana, J. (1984). Abused, neglected, and nonmaltreated preschoolers' ability to discriminate emotions in others: The effects of IQ. *Child Abuse & Neglect, 8*(4), 459–465.

Harrison, P. L., & Oakland, T. (2003). *Adaptive Behavior Assessment System* (2nd ed.). Western Psychological Services: Torrance, CA.

Haskett, M., Ahern, L., Ward, C., & Allaire, J. (2006). Factor Structure and Validity of the Parenting Stress Index-Short Form. *Journal of Clinical Child and Adolescent Psychology, 35*, 302–312.

Haskett, M. E., Scott, S. S., & Fann, K. D. (1995). Child Abuse Potential Inventory and parenting behavior: Relationships with high-risk correlates. *Child Abuse & Neglect, 19*(12), 1483–1495.

Kim, J., & Cicchetti, D. (2010). Longitudinal pathways linking child maltreatment, emotion regulation, peer relations, and psychopathology. *Journal of Child Psychology and Psychiatry, 51*(6), 706–716.

Loyd, B. H., & Abidin, R. R. (1985). Revision of the Parenting Stress Index. *Journal of Pediatric Psychology, 10,* 169–177.

Masten, A. S., & Shaffer, A. (2006). How Families Matter in Child Development: Reflections from Research on Risk and Resilience. In A. Clarke-Stewart, J. Dunn, A. Clarke-Stewart, & J. Dunn (Eds.), *Families count: Effects on child and adolescent development* (pp. 5–25). New York: Cambridge University Press.

McEwen, B. S. (2000). The neurobiology of stress: from serendipity to clinical relevance. *Brain Research, 886*, 172–189.

Milner, J. (1986). *The child abuse potential inventory: Manual* (2nd ed.). Psytec.: Webster, NC.

Milner, J. S. (1990). *An interpretive manual for the Child Abuse Potential Inventory.* Psytec.: Webster, NC.

Milner, J. (1994). Assessing physical child abuse risk: The Child Abuse Potential Inventory. *Clinical Psychology Review, 14*, 547–583.

Milner, J. S., Gold, R. G., Ayoub, C., & Jacewitz, M. M. (1984). Predictive validity of the Child Abuse Potential Inventory. *Journal of Consulting and Clinical Psychology, 52*, 879–884.

NSCAW Research Group (2002). Methodological lessons from the national survey of child and adolescent wellbeing: The first three years of the USA's first national probability study of children and families investigated for abuse and neglect. *Children and Youth Services Review, 24*, 513–541.

Pechtel, P., & Pizzagalli, D. A. (2011). Effects of early life stress on cognitive and affective function: an integrated review of human literature. *Psychopharmacology, 214*, 55–70.

Rodriguez, C. M., & Eden, A. M. (2008). Disciplinary style and child abuse potential: Association with indicators of positive functioning in children with behavior problems. *Child Psychiatry and Human Development, 39*(2), 123–136.

Rodriguez, C. M., & Tucker, M. C. (2011). Behind the cycle of violence, beyond abuse history: A brief report on the association of parental attachment to physical child abuse potential. *Violence and Victims, 26*(2), 246–256.

Rogosch, F. A., Dackis, M. N., & Cicchetti, D. (2011). Child maltreatment and allostatic load: Consequences for physical and mental health in children from low-income families. *Development and Psychopathology, 23*(04), 1107–1124.

Silverman, A. B., Reinherz, H. Z., & Giaconia, R. M. (1996). The long-term sequelae of child and adolescent abuse: A longitudinal community study. *Child Abuse & Neglect, 20*, 709–723. doi:10.1016/01,452,134(96)00,059–2.

Smith, T. B., Oliver, M. N., & Innocenti, M. S. (2001). Parenting stress in families of children with disabilities. *American Journal of Orthopsychiatry, 71*(2), 257–261.

Springer, K. W., Sheridan, J., Kuo, D., & Carnes, M. (2007). Long-term physical and mental health consequences of childhood physical abuse: Results from a large population-based sample of men and women. *Child Abuse & Neglect, 31*, 517–530. doi:10.1016/j.chiabu.2007.01.003.

Teicher, M. H., Andersen, S. L., Polcari, A., Anderson, C. M., & Navalta, C. P. (2002). Developmental neurobiology of childhood stress and trauma. *The Psychiatric Clinics of North America, 25*(2), 397–426 vii–vii.

Thompson, A., Hollis, C., & Richards, D. (2003). Authoritarian parenting attitudes as a risk for conduct problems. *European Child & Adolescent Psychiatry, 12*(2), 84–91.

Twardosz, S., & Lutzker, J. R. (2010). Child maltreatment and the developing brain: A review of neuroscience perspectives. *Aggression and Violent Behavior, 15*, 59–68. doi:10.1016/j.avb.2009.08.003.

U.S. Department of Health and Human Services. (2013). Child Maltreatment 2012. Retrieved April 18, 2014, from http://www.acf.hhs.gov/sites/default/files/cb/cm2012.pdf