The assessment of early trauma exposure on social-emotional health of young children☆

Christina Campbell [a],[*], Yvonne Roberts [b], Frank Synder [c], Jordan Papp [a], Michael Strambler [d], Cindy Crusto [d]

[a] University of Cincinnati, United States
[b] Annie E. Casey Foundation, United States
[c] Central Michigan University, United States
[d] Yale University, United States

ABSTRACT

Children exposed to traumatic events (e.g., violence in the home, school, community) report more adverse physical and mental health outcomes than children who have not been exposed to trauma. Caregiver reports provide an opportunity for early identification of intervention needs to aid healthy development of children exposed to trauma. The goal of this study was to determine unique social-emotional profiles and examine how traumatic events vary across these developmental profiles among a sample of caregivers who live in socioeconomically disadvantaged neighborhoods. Caregivers ($N = 223$) provided responses regarding their young children's (aged 3 years through 5 years) social-emotional health. Latent Profile Analysis was used to develop three distinct social-emotional profiles: Typical Social-emotional Health (low-risk), Some Social-emotional Challenges (moderate-risk), and Social-emotional Problems (high-risk). Results revealed that children exposed to increased non-family-based traumatic events had a greater likelihood of being a member of the moderate-risk group, whereas children exposed to increased family-based traumatic events had a greater likelihood of being a member of the high-risk group than of the low-risk group. The high-risk group was more likely to consist of older children and girls as compared to the low-risk group. There were no significant differences across profiles relative to ethnicity, caregiver education, and income. This research may aid in early identification and the distribution of services to youth at risk for trauma exposure and highlight pathways of resiliency.

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1. Introduction

The overwhelming stress caused by exposure to traumatic events can pose innumerable challenges against the healthy psychological development of a young child. Most often, traumatic events experienced in early childhood is the result of child abuse, neglect, and/or domestic violence. The number of children abused, neglected or exposed to domestic violence exceeds three million cases annually in the U.S. (National Child Traumatic Stress Network, 2014) with the majority of maltreatment and family violence occurring during the first five years of life (Fantuzzo & Fusco, 2007). In 2014, according to the U.S. Department of Health and Human Services (2016), the majority

(78.1%) of perpetrators of child abuse or neglect were a parent of their victim. Exposure to traumatic events in early childhood often sets in motion a chain of events – a negative trajectory that places those children who have the greatest exposure and the fewest positive mediating or ameliorating factors at greatest risk for negative effects throughout their lifespans (e.g., Eth & Pynoos, 1985; Goodwin & Stein 2004; Heim, Newport, Mletzko, Miller and Nemeroff, 2008; Perry, 2001 Pynoos, Steinberg and Piacentini, 1999). One previous analysis estimated the annual financial burden to society of childhood abuse and trauma is approximately 103 billion dollars in the U.S. (Wang & Holton, 2007). For these reasons, research that addresses early signs of trauma exposure is needed to be able to intervene before trauma event leads to even more serious problems, thus improve trajectories in young children.

The rate of trauma exposure is unsettling, it is estimated that among a healthy cohort of children, 26% will witness or experience a trauma event (e.g., witnessing violence in the family or neighborhood, seriously injured, bitten by a dog, or being involved in a car accident) before 4-years of age (Briggs-Gowan, Ford, Fraleigh, McCarthy, & Carter, 2010). Among young vulnerable children—those who are at risk for poor health outcomes because they live in socioeconomically disadvantaged communities and have fewer resources to dedicate to their health—the

prevalence of traumatic events has been reported to be 49% (Briggs-Gowan et al., 2010) and as high as 75% (Roberts, Campbell, Ferguson and Crusto, 2013). Given the impact exposure to traumatic events can have on physical, social-emotional, and behavioral health, it is important to understand the manifestation of trauma in early childhood populations that are most vulnerable and at greatest risk for health disparities (Roberts et al., 2013). This study will accomplish this by examining unique social-emotional profiles and examining how traumatic events vary across these profiles among a disadvantaged, at-risk group of children.

1.1. Defining trauma

Trauma is an event or experience that is emotionally disturbing and distressing and impedes on an individual's ability to cope (Briere & Scott, 2006). For this study, we conceptualize trauma using a "complex trauma" framework. Complex trauma may occur early in childhood and typically within the context of interpersonal, caregiving/parent-child relationships. This form of trauma usually involves exposure to multiple forms of distress which may include abuse and chronic neglect (Cook, Blaustein, Spinazzola & van der Kolk, 2003; Cook et al., 2005). Complex trauma is characterized as being ongoing, pervasive, and invasive; thus it has wide-ranging, short and long-term effects on multiple domains of child development (e.g. mental and physical health; Cook et al., 2003; Cook et al., 2005; D'Andrea, Ford, Stolbach, Spinazzola & van der Kolk, 2012; Wamser-Nanney, & Vandenberg, 2013). This is in opposition to acute sources of trauma, which are single, non-recurring forms of trauma such as a car accident or crime victimization (Creedy, Shochet and Horsfall, 2000).

Most often, complex trauma experienced by young children is experienced in the home. This is the case because the vast majority of a young child's time and socializing is done in the home with their family. For this reason, this study will examine family versus non-family trauma experiences as they relate to the social-emotional profiles that will be created.

1.2. The differential effects of trauma on development

Research shows that different types and sources of trauma can affect a child's mental health functioning and adjustment differently (Cook et al., 2003; Roberts et al., 2013). Given the constant exposure to and increased dependence of young children on their families, unhealthy or impaired family dynamics and instability could potentially make children more vulnerable to increased problems in later development compared to occasional traumas perpetrated by a stranger (e.g. robbery) or uncontrollable traumatic events like natural disasters (Roberts et al., 2013; Snyder et al., 2012). In a study examining the role of parental stress and young children's mental health functioning, Roberts et al. (2013) found caregivers of children exposed to increased family violence reported increased behavioral and mental health problems in their children. Similarly, in a sample of young children enrolled in an early childhood system of care, over 50% reported being exposed to a traumatic event that was caused or perpetuated by a family member (Snyder et al., 2012). Trauma occurring between caregiver and children (e.g. child maltreatment and abuse) and trauma witnessed by children involving family members (e.g. child exposed to domestic violence among family members) can put the children at risk for poor health outcomes and poor mental health functioning (Roberts et al., 2013; Snyder et al., 2012).

Previous research has also identified a broad range of social-emotional outcomes that are related to exposure to traumatic events (Cook et al., 2003; Cook et al., 2005; Eth, 2001, 2008; Roberts et al., 2013; Shonkoff, et al., 2012; Snyder et al., 2012). Some of these factors commonly linked with psychological traumatic events include internalizing and externalizing behavior problems, self-control, attachment, initiative, and behavior concerns (Eth, 2001, 2008; Roberts et al., 2013;

Shonkoff, et al., 2012; Snyder et al., 2012). Understanding how these social-emotional health factors work together are important areas of study among children 3–5 years of age because they may be predictors of future maladaptive outcomes in later adulthood (Cook et al., 2003; Cook et al., 2005). For instance, Weems and Scheeringa (2013) found that emotional and psychological trauma leads to poor social-emotional health, which predicts later psychopathology, academic problems, and health problems in adolescence. Research suggests that distress caused by traumatic events can influence genetics and alters brain physiology and structure in ways that may inhibit attention, cause memory loss, inhibit self-regulation, and hinders an individual's ability to develop healthy relationships with others (Eth, 2001, 2008; Roberts et al., 2013; Shonkoff, et al., 2012). Once a trauma event occurs the brain attempts to cope or respond to the event. The type of trauma, frequency, and intensity of a traumatic event may cause an ongoing activation of the stress-response system (Shonkoff, et al., 2012). This ongoing activation may be harmful and interfere with daily experiences and social-emotional health.

Given the strong associations between traumatic events and social-emotional health have not been fully determined, the purpose of the current study is to determine social-emotional health profiles of young children with and without trauma histories. More specifically, the current study will examine how traumatic events vary across social-emotional health profiles, thereby providing a unique perspective on the ways in which young children who live in socioeconomically disadvantaged communities are responding to traumatic events. We expand upon complex trauma research by further investigating how different types of traumatic events (i.e., family and non-family based traumatic events) impact different profiles/patterns of behaviors observed among a vulnerable population of young children and examine the characteristics of children who are developing well in this environment. We expected that different types of trauma would have a varying impact on social emotional development and would have at least three groups (one group representing children with no to low trauma event exposure, one group representing children who experienced increased non-family-based traumatic events, and one group representing children who experienced increased family based traumatic events). The present exploratory study answers the following questions: What is the number of distinct parsimonious social-emotional health profiles that exists among preschool-aged children who live in a socioeconomically disadvantaged neighborhood? How do these profiles differ across caregiver and child demographics and exposure to family- and non-family based traumatic events?

2. Method

2.1. Participants

Data used for this study were from a larger study examining the impact of social processes and child characteristics on the physical and social-emotional health of young children who participated in an early education Head Start program designed to provide education, health, nutrition, and social services to children and families who have a low income. Caregivers of boys ($n = 115$) and girls ($n = 108$) aged 3- through 5 years ($M = 3.89$, $SD = 0.67$) participated in the study. Caregiver age ranged from 20 to 68 years ($M = 32.16$, $SD = 8.78$). Only one child and one caregiver per family were eligible for participation, and the caregiver had to reside with the child for at least 50% of the time. The majority of the caregivers were biological mothers ($n = 191$). Other caregivers were biological fathers ($n = 14$), step-fathers ($n = 1$), grandmothers ($n = 10$), aunts/uncles ($n = 3$), and others ($n = 4$). Caregivers with a mental health challenge that prevented them from reliably reporting on their or their child's experiences, as indicated by screening conducted by the research team, were ineligible to participate. Families self-identified as Hispanic/Latino ($n = 120$), Black (non- Hispanic) ($n = 93$), or other ($n = 10$). We collapsed all other racial/ethnic groups

Table 1
Sample characteristics of head start children and their families.

Characteristics	Number	Percentage
Demographics		
Gender of child		
Male	115	51.6%
Female	108	48.4%
Race/ethnicity		
Hispanic/Latino	120	53.8%
Black (Non-Hispanic)	93	41.7%
Other	10	4.5%
Education		
No Diploma or GED Equivalent	70	31.4%
High School Diploma or GED Equivalent Completed	83	37.2%
Associates Degree or Some College	54	24.2%
Bachelor Degree or Higher	16	7.2%
Income (missing = 10)		
Less than $14,999	90	40.4%
$15,000–$24,999	53	23.8%
$25,000–$49,999	59	26.5%
$50,000 or More	11	4.9%

to represent other because there was a small proportion (< 5%) of non-Black and Latino/Hispanic participants, >60% of the sample of caregivers had a high school diploma or less and earned less than $24,999 annually. Caregivers had to be at least 16-years of age to participate in the study (see Table 1).

2.2. Procedure

Archival data were used from a cross-sectional study conducted from April 2010 to August 2012. This study was a collaborative effort between a university-based research team and a community-based agency that operates several early care and education Head Start centers in urban socio-economically disadvantaged neighborhoods located in the state of Connecticut.

Agency staff members asked potential participants if they were interested in taking part in the study. The research team received 489 initial consent forms from caregivers who agreed to participate and 279 were successfully screened for participation through telephone interviews. Reasons for incomplete screenings included incorrect phone numbers, no response after repeated attempts, prior enrollment of a sibling in the study, and/or family decision to not participate.

A research team member met with an eligible caregiver at a location of the caregiver's choosing (e.g. home, public library). Visual aids (e.g. Likert-type scales corresponding to specific questionnaires) were also used to help caregivers who may have had potential literacy-related issues. All study materials, measures, and interviews were available in both English and Spanish and the research team members read the measures out loud to caregivers. Interviews took approximately two hours to complete after which respondents were compensated with a $45 gift card to local vendors. The authors' Institutional Review Board approved study procedures and provided oversight in the protection of human research participants.

2.3. Measures

2.3.1. Social-emotional health

To develop social-emotional health profile types we used two measures: the Child Behavior Checklist (CBCL) for children aged 1 1/2 to 5 (Achenbach & Rescorla, 2000) and the Devereux Early Childhood Assessment (DECA). The CBCL is a widely-used 113-item parent-report measure designed to assess competencies, and behavioral and emotional problems in young children. Current study analyses used the Internalizing Behaviors (anxiety/depression, somatic complaints) ($\alpha = 0.88$) and Externalizing Behaviors (aggression, delinquency) ($\alpha = 0.94$) subscales. Higher scores on this measure indicate more social-emotional

problems. The clinical cut off for this measure is 63 across each domain. Reliability and validity of the CBCL is well established (Achenbach & Edelbrock, 1983; Achenbach & Rescorla, 2000).

The DECA (LeBuffe & Naglieri, 1999) is a standardized measure that evaluates the frequency of 27 positive behaviors and behavioral difficulties exhibited by preschoolers using a 5-point Likert-scale ("never" to "very frequently"). Example items included the following: During the past 4 weeks, how often did the child "start or organize play with other children", "control his/her anger", and "show affection for familiar adults". The measure produces a total scale score (Total Protective Factors), as well as scores across four subscales, which include Initiative ($\alpha = 0.71$), Self-control ($\alpha = 0.80$), Attachment ($\alpha = 0.63$), and Behavior Concerns ($\alpha = 0.71$). Subscale total scores fall into one of three ranges: Above Average, Average, and Below Average. Higher scores on Initiative, Self-control, and Attachment subscales reflect children's strengths in these areas, whereas higher scores on Behavior Concerns suggest the child is having difficulties/increased problems. The clinical cut off for the DECA protective domains (Initiative, Self-control, and Attachment) is a score < 40 and for the risk domain (Behavioral Concerns) > 60.

2.3.2. Traumatic events

The Traumatic Events Screening Inventory-Parent Report Revised-Long Version (TESI-PRR; Ghosh-Ippen et al., 2002) was used to examine how exposure to trauma varied across profiles. This measure was developed for children aged birth through 6 years and has shown good test-retest reliability (kappa = 0.50 to 0.79; Ford et al., 2000). We used the 24-item TESI-PRR to measure traumatic events and to determine further if the child was exposed to proximal (i.e. family) and/or distal (i.e. non-family) trauma. Items on the TESI-PRR measure traumatic events the child experienced both inside and outside of the home. This measure also asks caregivers to specify the person(s) involved. Research assistants coded data to classify events using two categories, family based (i.e. proximal trauma) and non-family based (i.e. distal trauma). Trauma items were grouped based on Bronfenbrenner (1979)'s ecological theory, with family traumatic events categorized more proximally to a child, and non-family traumatic events categorized as a more distal event. Family trauma was defined as any trauma event involving the child witnessing or experiencing harm inflicted by a family member. Examples included: the child experiencing sexual abuse from a family member; physical violence from a family member; verbal abuse by a family member; caregiver neglect; separation from a caregiver; and family violence. A total sum score that represented family trauma was computed to represent the number of family related traumatic events the child experienced or witnessed. Scores ranged from 0 to 11. Similarly, a total count score was computed for distal trauma a child witnessed or experienced. Non-family trauma was defined as any experience or exposure to a trauma event in which a family member was never the perpetrator. Examples included: serious accident; child ever seen or heard people/strangers fighting outside his/her family or home; child present when a family member had been robbed or mugged by a stranger; and/or natural disaster. Non-family trauma scores ranged from 0 to 13.

2.3.3. Child/caregiver demographics

Data on the child's age, gender, and race/ethnicity were collected. Caregiver characteristics collected included family income level and level of education. For this study, race/ethnicity categories included Black (non-Hispanic), Latino/Hispanic, and other.

2.4. Data analysis plan

Descriptive analysis of overall sample demographics was completed using the Statistical Package for the Social Sciences (SPSS). A person-centered approach, known as Latent Profile Analysis (LPA) was used to determine distinct social-emotional health profiles using Mplus.

Table 2
Latent profile analysis model fit statistics of child social-emotional health.

Model	Log-likelihood	Vuong-Lo Mendall Rubin	AIC	BIC	Sample size adj BIC	Entropy
1-Class	− 7352.71	–	14,777.42	14,899.92	14,785.83	–
2-Class	− 5126.23	$p = 0.001$	9948.06	10,053.40	9955.16	0.85
3-Class	− 4943.03	$p = 0.056$	9863.25	10,033.16	9874.71	0.86
4-Class	− 4643.43	$p = 0.19$	9376.87	9527.70	9385.11	0.79

Note. Profiles were developed using CBCL (subscale = 2) and DECA T-Scores (subscales = 4).

This mixture modeling technique determined each child's probability of belonging to a specific latent class (i.e. social-emotional profile). Model fit was assessed using Bayesian Information Criterion (BIC), Akaike Information Criterion (AIC), entropy, and the Vuong-Lo-Mendall-Rubin Likelihood Ratio Test (VLMR-LRT). In comparing the number of classes, a reduction in BIC and AIC suggests a better fit of the data. Entropy values represented the percentage of time individuals are correctly identified in their classes and entropy values closest to 1 indicate a better fit. The VLMR-LRT compares the K-1 number of classes to the K number of classes and provides a p value which indicates if increasing to K classes significantly improves fit. A significant p value suggests including an additional class would result in a better fit (Nylund et al., 2007). Further, in making decisions concerning the number of appropriate profiles observed in the sample, additional variables could have been added to our regression model to further distinguish unique trends in the data. Mplus regression analyses were completed simultaneously with the LPA to understand how classes varied by the child's gender, age, family income, ethnicity, highest education of caregiver, exposure to proximal (i.e. family trauma), and exposure to distal (i.e. non-family trauma). By running the LPA inclusive of key demographic predictor variables, class solutions were able to factor differences across independent variables by class; this approach was consistent with current recommendations for how to conduct such analyses (Nylund, Asparouhov and Muthén, 2007).

3. Results

To determine how many distinct parsimonious social-emotional health profiles existed among preschool-aged children who lived in a socioeconomically disadvantaged neighborhood, we used an LPA, which compared fit statistics for the LPA model (see Table 2). We found that the BIC and AIC values dropped across all profiles tested with the largest reduction occurring between the 3-profile and 4-profile solution. Given entropy worsened for the 4-profile solution and the LMT-LRT was outside the range of significance for this solution, the 4-profile solution was considered a poor fitting model and did not add statistically significant improvements.

Although the 2-profile Vuong-Lo-Mendall-Rubin (VLMR) yielded the strongest p-value ($p < 0.05$), we selected the 3-profile solution, which was marginally significant for further analysis. We used other guidelines (Nylund et al., 2007; Tolin & Foa, 2006) to which profile solution best represented the relationship between social-emotional health and traumatic events. The 3-profile solution had the strongest entropy score and best identified young children who had clinical levels on two of the social-emotional health domains (Externalizing Behaviors

and Self-Control) (see Tables 3). The 3-profile solution was also different across exposure to family and non-family traumatic events. Our desire for practical significance and need to select a class solution that may potentially inform services and support for young children and their families, the 3-profile solution best identified children who potentially have increased intervention needs and exposed to increased traumatic events. The scores a child received on Externalizing Behaviors and Self-Control were higher than normalized scores (Achenbach & Edelbrock, 1983 & Achenbach & Rescorla, 2000). If in this study we relied on class 2, we would have failed to identify those children who were in potential need of services. Further, the high risk group within the 3-class solution were more likely to be exposed to family violence. Given research suggests that these social emotional indicators are critical for later delinquency prevention, it was important as a goal in the current study to focus intervention resources and services on this group. Means of the social-emotional health domains associated with the 3-profile solution are shown on Table 3. The 3-profile solution determined three distinct parsimonious groups: Typical Social-emotional Health (low risk), Some Social-emotional Challenges (moderate risk), and Increased Social-emotional Problems (high risk). Among this sample 42% were in the low-risk group ($n = 100$), 38% were in the moderate-risk group ($n = 83$), and 17% were in the high-risk group ($n = 38$). Overall, the larger proportion of children in the sample were doing well relative to their social emotional development.

Regarding the demographic characteristics of each profile, younger children were more likely to be in the moderate-risk class and girls were more likely to be members of the high-risk class (i.e. these youth reported clinical levels of behavioral difficulty). Race, caregiver income and level of education were not associated with the low-, moderate-, or high-risk social-emotional health profiles.

Average family traumatic events reported was 0.87 (SD = 1.06) and average non-family trauma was 1.05 (SD = 1.16). Range of total of traumatic events reported by the caregiver was 0–9 events (M = 1.92, SD = 1.89). Mean trauma scores across the low-risk group was 1.35 (sd = 1.38), moderate-risk was 2.28 (sd = 2.03), and high-risk was 2.67 (sd = 2.30). As for type of trauma, non-family trauma event was significantly associated with the moderate-risk group ($p < 0.05$) and family trauma event was significantly associated with the high-risk group ($p < 0.05$). These results indicated that the type of trauma event (i.e. non-family trauma/distal event versus family trauma/proximal event) was a meaningful contribution to describing the social-emotional health profiles.

4. Discussion

Latent Profile Analysis (LPA) is a useful strategy for identifying distinct patterns or groups that exist within samples. In our study, this person-centered approached identified distinct social-emotional health profiles of young children at risk for increased social-emotional challenges after exposure to trauma. We concluded that a 3-profile solution was the best model to describe our sample of children. This solution identified a low-risk (Typical Social-emotional Health), moderate-risk (Some Social-emotional Challenges), and high-risk (Social-emotional Problems) group based on their level of behavioral and emotional needs. Although the 2-class solution yielded a significant p value of <0.05, the 3-class solution was the best solution because it "teased

Table 3
Mean scores and standard errors of latent class profile 3-class model.

Latent classes	Internalizing behaviors	Externalizing behaviors	Behavior concerns	Attachment	Initiative	Self-control
1 - Class ($n = 100$)	36.33 (±0.88)	34.11 (±0.89)	47.03 (±1.46)	51.73 (±0.30)	54.91 (±1.39)	58.83 (±0.96)
2 - Class ($n = 83$)	49.96 (±1.73)	46.91 (±1.68)	59.80 (±1.46)	49.04 (±1.35)	52.26 (±1.78)	51.01 (±1.49)
3 - Class ($n = 38$)	60.10 (±2.23)	64.02 (±2.10)	69.51 (±0.88)	44.98 (±2.14)	48.27 (±2.45)	38.02 (±2.38)

out" the 17% of children who reported clinical scores for externalizing behavior problems and difficulties with self-control. This 17% of children represents a subgroup that reported the most social-emotional health problems and may benefit the most from intervention services.

Latent class profile analysis can be used to help tailor intervention services by matching service components with various interventions needs, the 3-class profile not only identified those who exhibited clinical levels on the social-emotional health profiles but also matched these children to different types of traumatic events. We observed in this study that solely relying on *p* values/statistical significance to determine social-emotional health profiles does not have great utility if the goal is to identify children who are reporting clinical levels across social-emotional health indicators (i.e. those who may be in need of intervention services). Research examining the debate around statistical versus practical significance suggests that solely relying on the significance of *p* values sometimes fails to provide meaningful and practical information to address the research questions and real world research problems (Kirk, 1996). In our case, we were interested in distinguishing social-emotional health profiles relative to exposure to traumatic events in order to identify families who may benefit most from support and interventions, and were careful not to disregard practical significance. The 3-class solution unpacked some differences that impacted level of service delivery.

Results indicated that children exposed to increased non-family trauma were more likely to be members of the moderate-risk profile than the low-risk profile. Conversely, family trauma was more significantly related to children who were members of the high-risk profile than the low-risk profile. Although there was a low base rate of trauma reports overall, these results suggest that using a measure that accounts for both family and non-family based trauma is important in understanding how different types of traumatic events may differentially affect the social-emotional health in children. Understanding this information allows for more informed decisions to be made during the treatment of these youth. For instance, knowing that the higher risk children are not only the smallest group represented in the sample but more likely to have experienced family-related trauma, treatment services might be better allocated to those children and their families. Allocating more services to the early prevention of negative outcomes caused by exposure to trauma in a more informed manner may help to reduce some of the later costs associated with trauma exposure.

Further, school settings might be an ideal point of contact for addressing and supporting the needs of families who are exposed to increased trauma. As preschool and early educational programs are available for families who live in socioeconomically disadvantaged communities, there are increased opportunities to observe and assess behaviors which have been found to be correlated with exposure to traumatic events (e.g., poor verbal skills, excessive temper, easily startled, anxious, fearful or avoidant (National Child Traumatic Stress Network, 2014). Ko et al. (2008) suggest that educators would benefit from training on identifying maladaptive behavior associated with exposure to trauma. The current study may help to inform specific behavioral-profiles of youth to better identify the troubles they might be experiencing. To be clear, we are certainly not saying that all youth who have behavior problems have experienced trauma and thus need treatment, rather, we are suggesting that this is a good starting point for the early identification of children who may benefit from evidence based interventions and supportive services. Early intervention in the lives of young children exposed to trauma could potentially lessen the negative effects over time.

It is important to note that in general most of the children in our sample were doing well as it related to healthy social-emotional development despite their environment. There were also no differences across profiles by ethnicity (i.e. Latino and Black), caregiver education, and income level. Although the families reported relatively low income levels and limited education, majority of the children in sample were thriving as it related to their social emotional development. This is

important to note because future research will involve expanding on models of resiliency for young children's who live in socio-economically disadvantaged communities.

The current study adds to previous research that suggests young children exposed to or witnessing increased family-based traumatic events may have more social-emotional difficulties. Although family and non-family traumatic events may play a role in social-emotional health, trauma occurring within the family seems to have a greater influence on young children's observed behavior (Sameroff, 2009; Sameroff & Fiese, 2000). Research has found that caregiver support is critical to how young children respond to trauma exposure (Lieberman & Knorr, 2007; Scheering & Zeanah, 2001), and how trauma exposure is related to negative behavioral outcomes (English et al., 2003). Thus, family violence can have the unfortunate consequence of undermining parents as protectors and as sources of support (Margolin & Vickerman, 2007). Additionally, these findings highlight the need to determine how non-family trauma may impact social-emotional health differently which will inform the effective treatment of these youth.

We also examined how social-emotional health profiles differed across demographic variables. In our sample, children in the highest risk group and classified as having clinical levels of social-emotional problems were more likely to be girls than the low-risk group (Typical Range Social-emotional Health). Research suggests that young girls are at increased risk for experiencing more family-related traumatic events than young boys (Tolin & Foa, 2006). This observation may suggest the potential need for gender responsive services and/or supports. In addition, the lowest-risk group, relative to the social-emotional health profiles, was more likely to consist of older children in the moderate- and high-risk group. This suggests that with family trauma, younger children may be at increased risk for being abused or neglected. We expected that family and non-family traumatic events would have different effects on the social-emotional health of young children. This hypothesis was confirmed by findings which indicated that children who are exposed to increased family traumatic events may have more behavior problems while those exposed to non-family traumatic events had a moderate level of behavior problems. The trauma classification had a different impact on social-emotional health, and this may better inform and tailor services and interventions for children in need.

4.1. Limitations

Some limitations to this study should be mentioned. First, although the use of caregiver reports of child social-emotional health is developmentally appropriate, our study solely relied on caregiver-report. This information could be substantiated with an additional respondent such as a teacher or another caregiver. The use of child-focused research methods (e.g., play-based assessment) could help address this concern in future research. Second, for those children who had previously experienced a trauma event, we were unable to assess the intensity of the previous trauma event. The measure selected was a measure of the number of different types of trauma experiences, not the frequency of all traumatic events experienced. We were unable to assess the intensity of the previous traumatic events because the measure selected was a measure of the number of the different types of traumatic events. In addition, this measure of trauma is limited as it does not account for the severity of the trauma but only the number of different types of events. However, the number of different types of trauma has been found to be a significant predictor of negative outcomes similar to focusing on any one type of trauma event (Cook et al., 2005). This research is based on traumatic events experienced by young children, data concerning severity as determined by the child are difficult to gather. This research, however, does show that there is a significant relationship between family and non-family trauma experienced and social-emotional health outcomes and is not a study of causation. More research is needed to determine if different traumatic events have different effects on young

children between ages birth through 5 years. Third, it is unknown what services children and their families received before or during the study time period. Future research will identify services that may impact profile construction. Fourth, given the current study was cross-sectional, causality remains inconclusive. Fifth, caregivers self-selected to participate in the study and may have been limited in their willingness to report certain types of traumatic events. Parents provided multiple sources of data regarding the mental health functioning, and reporting across measures was consistent, providing a good measure of reliability in reporting. Nonetheless, caution should be exercised in generalizing the findings beyond the characteristics of our sample. Future studies incorporating a longitudinal design would help strengthen the findings and provide more information on the trajectories of children in each of the three identified risk classes.

Our study is unique in that we used a community-based sample of vulnerable children from low socioeconomic backgrounds and provided an opportunity to examine the impact of exposure to traumatic events among a population that is at increased risk for poor health outcomes and disparities. This allowed us to examine a subgroup of children who lived in vulnerable conditions but were resilient and functioning well despite their limited resources and exposure to increased risks (i.e. Class 1). However, because the research setting took place in a community with increased exposure to various social systems, social desirability may be a potential consideration. In the midst of this concern, results suggest the majority of children are developing well and that percentages relative to low, moderate, and high risk, are comparable to the general population. Future work in this area is needed to examine how social-emotional profiles replicate in a non-community based sample or across diverse backgrounds and settings. While there was not much demographic variation in groups potentially due to the lack of ethnic, income, and education variation, we believe a strength of the study was to examine social emotional development among families who live in socio-economically disadvantaged communities.

Early detection of behavior problems and social-emotional difficulties across diverse backgrounds and settings may lead to potential interventions that could reduce adverse outcomes and positively affect long-term development (Woodruff & Lee, 2011). The use of latent profile analysis provides an opportunity to not only identify those children who may have a need for intervention but also those who remain on the cusp of normal functioning and maladaptive outcomes. There is also potential to provide intervention services in stages relative to specific patterns or levels of needs. By identifying social-emotional health profiles of young children, preventive services can be provided that may improve social-emotional health and aid those who are exposed to traumatic events in- and outside the home. This may likely reduce costs related to hospitalization, mental health care, law enforcement, and child welfare services (Wang & Holton, 2007).

Our current study highlights the importance of the opportunity to examine whether there are meaningful and unique groups of young children that may need and or respond to interventions differently. Indeed, we found three distinct social-emotional profiles. Identifying unique groups of young children and investigating factors that can affect group membership can inform early identification of services and resources for caregivers and their young children. Future research further examining this area is essential to addressing the needs of young children as a means of preventing long-term effects associated with experiencing complex trauma during childhood.

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