

# An Exploratory Study of Neglect and Emotional Abuse in Adolescents: Classifications of Caregiver Risk Factors

Cassandra Simmel<sup>1</sup> · Darcey Merritt<sup>2</sup> · Hillary Mi-Sung Kim<sup>3</sup> · Soyoun Kim<sup>4</sup>

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**Abstract** Recent research has advanced exploration of developmental stage and age-related distinctions in understanding the perpetration of child maltreatment. Using longitudinal data from the National Survey of Child and Adolescent Well-being I (NSCAW-I), this exploratory study investigated heterogeneity in caregiver risks in cases of both neglect and emotional abuse of adolescents ( $N = 511$ ). Using *MPlus* software, a person-centered data analytic strategy—latent class analysis was performed to identify distinct classes of caregiver risk factors that were associated with the reports of maltreatment among adolescents. Subsequently exploring the distinct characteristics of the classes, we examined the related demographic characteristics, child welfare system variables (e.g., type of placement status; change in placement type between waves), and youth factors such as the presence of clinical range problem behaviors (Child Behavior Checklist). Results demonstrate four distinct classes of caregiver risk factors, with a nearly even split between those who have an absence of risk factors and those who have a whole host of risk determinants. Differences between the classes

regarding the duration of time in out-of-home placements between Wave 1 and Wave 3 also emerged significant.

**Keywords** Latent class analysis · Emotional abuse · Neglect · Adolescents · Child welfare

## Introduction

In recent years, it has been widely determined that both child maltreatment referrals and entrants to child welfare system supervision have been declining (DeVooght et al. 2014; Institute of Medicine (IOM) and National Research Council (NRC) 2014; U.S. Department of Health and Human Services 2013). However, an important qualification to this period is that not all forms of maltreatment are indeed declining. Of note, during this seemingly optimistic trend, reports of neglect have not changed substantially, and reports of emotional or psychological abuse have actually increased (IOM and NRC 2014). Moreover, although research on the causes, risk factors, and ramifications of maltreatment (e.g. physical and sexual abuse) has expanded, research on neglect, and especially emotional abuse is under developed (Merritt and Snyder 2014; Snyder and Merritt 2014). The need for more research on child neglect and emotional abuse also coincides with the need for a developmentally specific research focus regarding the impact of child maltreatment. Such inquiries would bolster our understanding of distinct types of maltreatment based on the developmental capabilities and vulnerabilities of all age groups of victims (Cicchetti and Rogosch 2002; Jones Harden 2004; Simmel 2010).

Historically, research on maltreatment in adolescence has primarily focused on sexual abuse, since the incidence of this abuse type is highest in this age group (U.S. DHHS

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✉ Cassandra Simmel  
csimmel@ssw.rutgers.edu

<sup>1</sup> School of Social Work, Rutgers University, 536 George Street, New Brunswick, NJ 08901, USA

<sup>2</sup> Silver School of Social Work, New York University, 1 Washington Square North, New York, NY 10003, USA

<sup>3</sup> Department of Pediatrics, Institute for the Study of Child Development, Rutgers Robert Wood Johnson Medical School, 89 French Street, New Brunswick, NJ 08901, USA

<sup>4</sup> Department of Social Welfare, Ewha Womans University, 52, Ewhayeodae-gil, Seodaemun-gu, Seoul 03760, Republic of Korea

2015). As an unintentional consequence, other abuse perpetrated in adolescence receives less focus in research. Moreover, the characterization of types of neglect (e.g. supervisory neglect) also suggests the victimization of younger children and toddlers as more pressing in comparison to neglect experienced by young adolescents. For instance, when examining the definitions of neglect—partially comprising caregivers' failure to appropriately supervise their children; impairments in protecting children from harm; deficits in caring for children's basic physical needs (Erickson and Egeland 2002)—these parental behaviors are largely indicative of neglect of infants, toddlers, and preschoolers. While almost all incidences of neglect are inherently difficult to discern and recognize, developmental theory informs us that some of the previously described features of salient types of neglect seem less pertinent to older children or adolescents, thus leaving a definitional vacuum when considering how types of neglect are manifested in adolescence.

Similar complexities arise with recognizing emotional abuse. Such conduct is partially defined as “denying emotional responsiveness” and “hostile rejection/degrading” (Hart, Brassard, Binggeli, and Davidson 2002). Consider that one complexity of emotional maltreatment may be that it is embedded in the parent–child relationship (Hart et al. 2002) and not explicitly evident as abuse. A long-term dysfunctional pattern of parental behavior may be at play, leading into the children's adolescent years. With adolescents' changing sensitivities around notions of their burgeoning autonomy vis a vis their caregivers (Parke and Buriel 2008), this suggests emotional abuse may have a differential impact and also associated with meaningfully differential caregiver characteristics. Developmentally, adolescents are generally more cognitively and emotionally capable of relating and interacting within their family systems at a more advanced and interdependent level. They also exhibit growth in self-care skills and emotional regulation, while also possessing a keener awareness to parental behavior (Parke and Buriel 2008; Villodas et al. 2012). Despite this developmentally appropriate pause from parental reliance, adolescents are still in need of predictable parenting and nurturing. As this relationship evolves in developmental context, it is likely that the vulnerabilities to adverse parental conduct—as demonstrated in neglect and emotional abuse—also transform. This level of cognitive maturation, in turn, may further affect adolescents' ability to recognize parental conduct as abusive. Hence, new challenges in the caregiving relationship may arise due to child developmental maturation, thus creating stress on the parent–child relationship. However, this line of inquiry has not been examined with respect to emotional abuse or neglect among this age group.

Recent research and summaries of administrative data report the presence of all types of maltreatment as children mature, including neglect and emotional abuse noting that there are multiple types of maltreatment perpetrated against adolescents (Simmel 2011; United States Department of Health and Human Services 2013). For instance, Finkelhor et al. (2005) found in their large scale national survey of children and adolescents that self-reported disclosures of maltreatment by respondents included all forms of maltreatment across all age groups. Raissian et al. (2014) used the National Child Abuse and Neglect Data System (NCANDS) to examine child maltreatment referrals for adolescents and younger children. In their study, they examined how child welfare authorities responded to abuse allegations and whether age or other demographic characteristics emerged as distinct. Similar to Finkelhor et al. (2005) study, their findings revealed the presence of all types of abuse among adolescents, though there was variation in how child welfare authorities responded to specific maltreatment referrals for adolescents.

Given cursory accounts in the literature regarding neglect and emotional abuse among adolescents specifically, Simmel's 2011 study of NSCAW data supports the current literature and highlights distinctions according to developmental stage finding neglect and emotional abuse to indeed be prevalent among older youth. In this study, latency-aged children and adolescents—both boys and girls—had comparable rates of emotional abuse and all types of neglect relative to their younger counterparts. Moreover, recent administrative data from the Children's Bureau documents that nationwide, despite their relatively older age, many young adolescents face initial involvement with the child welfare system (US DHHS 2013). Although relative to other types of maltreatment, sexual abuse is the most frequent type of maltreatment reported for the adolescent age group nationwide, all forms of neglect, as well as emotional abuse are indeed reported in this age group (U.S. DHHS, 2015). Thus adolescents continue to face risks for all types of maltreatment, yet the extent to which caregiver characteristics to these risks is not well understood. Furthermore, given the developmental uniqueness of emotional abuse and neglect in older youth, a detailed descriptive account focused on these forms of abuse solely in this age group is needed.

Beyond exploring the incidence of specific maltreatment types in adolescence, it is necessary to explore the impact of abuse that adolescents experience. For example, in a recent study of the propensity toward intergenerational abuse, the history of child maltreatment in caregivers' backgrounds was found to contribute to subsequent perpetration of abuse by these individuals as they parented their own children (Thornberry and Henry 2013). Yet, this subsequent perpetration was associated only with

maltreatment that persisted into the adolescent stage of development and not maltreatment that was “childhood-limited” and solely occurred prior to their children reaching adolescence. Hence, the impact of having experienced maltreatment as an adolescent has long-term effects on future parenting across developmental stages, insofar as this study demonstrates.

Understanding the context of caregiving is important. In the recent Institute of Medicine and National Research Council (2014) report, the authors emphasize a broader and more comprehensive framework for understanding multiple aspects of the etiology of maltreatment. For instance, the report authors posit that due to social and economic inequality, individuals are “stratified” in society, resulting in negative influences on their capacity for caregiving (p. 27). This framework provides a useful perspective in which to examine the confluence of caregiver risk factors associated with the onset of maltreatment and they identify several categories of risk factors spanning micro, meso, and macro elements: (1) individual parent or caregiver risk attributes (e.g., history of childhood abuse and neglect; early childbearing; and parental psychopathology); (2) individual child factors (e.g., developmental disabilities; behavioral health difficulties); (3) family characteristics (e.g., family structure; deficient parenting skills; intimate partner violence; and social isolation); and, (4) community and environmental “contextual factors” (e.g., poverty; unemployment; low socioeconomic status; neighborhood characteristics) (IOM and NRC 2014, pp. 24–26).

The influence of these factors, as well as how they conjointly operate on manifestations of distinct forms of maltreatment in exclusive age groups of children and youth is an underexplored topic. Moreover, the IOM and NRC framework is largely represented in the NSCAW study (the basis for our current study), which includes comprehensive data on many of these caregiver risk conditions. To what extent are these risk factors apparent in caregivers of adolescents? The limited research available does reveal intriguing comparisons. Contextual factors such as poverty, unemployment, and inadequate housing have been clearly tied with the potential for abuse generally (Merritt 2009); impairing reunification efforts (Fowler et al. 2013); neglect in early childhood (Fallon et al. 2011; Moore et al. 2002); and to a lesser measurable degree, abuse among adolescents as well (Simmel 2011). Other risk factors that have been gleaned from recent studies include that adolescents may be vulnerable to maltreatment due to their own individual level risk factors (e.g., socio-emotional challenges, behavioral health difficulties) perhaps in conjunction with impaired parental response to these factors (Simmel 2010).

Taken together, our research builds on empirical work investigating developmental stage-specific indices of maltreatment. Here, we explore two related but individual

forms of child maltreatment (discrete categories of neglect and emotional abuse) among adolescents, with a particular focus on how the caregiving context is associated with reports of such abuse. This is an important step in advancing prevention, detection, and ultimately protection efforts for adolescents, who may potentially be underserved by child welfare systems and agencies (Raissian et al. 2014).

This study is considered exploratory in nature and therefore guided by the following research aims: (1) measuring the extent to which adolescents in the NSCAW dataset are involved with the child welfare system due to emotional abuse and neglect as the primary maltreatment report type; (2) exploring how the caregiver risk factors, both historical and current conditions are related to these maltreatment reports and cluster together; and (3) examining differences between these classes in terms of adolescents’ subsequent child welfare involvement and behavioral outcomes.

## Method

### Participants

This study used data from the National Survey of Child and Adolescent Well-being (NSCAW I), a nationally representative longitudinal study that investigated the comprehensive functioning of children and families involved with the child welfare system. NSCAW I uses a stratified cluster sampling design resulting in a final cohort of 6228 children. Further, this sample comprises two sub-samples aged birth to 16 years: the Child Protection Service sample (CPS: 5,501 children who had been investigated by Child Protection Service agencies for child abuse or neglect) and the Long-Term Foster Care sample (LTFC: 727 children who had stayed in out-of-home placement for approximately 1 year at the time of sampling). Data were collected at multiple time points from children, caregivers, child welfare caseworkers, and teachers, inclusive of administrative records. The baseline interviews were conducted at 2–6 months after the initial contact in 1999–2000 (Wave 1). Subsequently, data were collected at 12 months (Wave 2), 18 months (Wave 3), and 36 months (Wave 4) after the initial investigation. Wave 5 data were collected at 59–96 months after the close of investigation (Dowd et al. 2006). Our study used the Wave 1 to 3 data from the CPS sample only.

The primary focus of our study is on the measurement of neglect and emotional abuse in adolescence and therefore had the following inclusionary criteria: (1) children entering the child welfare system due to neglect or emotional abuse; and (2) the age of children at Wave 1 was between

11 and 15 years. Because we wanted to examine certain system factors at Wave 3 (e.g., placement type), we capped the maximum age at Wave 1 to 15 years so the youth would not be 18 years or older as we followed-up at Wave 3. This resulted in a final sample size of 511 youth (weighted  $N = 268,594$ ). The bulk of the sample consisted of those who had experienced a combination of neglect types (e.g. failure to supervise and moral/legal/educational neglect) (59.43 %) followed by those who experienced physical neglect (24.52 %). This youth sample had an average age of 12.6 years (linearized  $SE = .09$ ) at Wave 1, and was composed of 53 % girls and 47 % boys. Close to half of the sample was Caucasian (43 %), 30 % were African American, 17 % were Hispanic, and 10 % were from other ethnicities (e.g., Asian, Hawaiian, Pacific Islanders). The majority (77 %) of the children lived in urban areas and the remaining 23 % in non-urban areas. Detailed demographics of the youth and their primary caregivers are presented in Table 1.

## Measures

In Table 2 we provide information on maltreatment and child welfare involvement. *Types of maltreatment.* The alleged *primary* maltreatment types were recorded by the caseworkers (indicated as the most serious type of maltreatment—notwithstanding co-occurrence among types) at Wave 1, providing the basis of the CPS reports. For the present study we solely focused on neglect and emotional abuse. Four types of primary maltreatment were assessed: (1) emotional abuse (14.1 %), (2) physical neglect (failure to provide) (24.5 %), (3) supervisory/other types of neglect (consisting of failure to supervise and moral/legal/educational neglect) (59.4 %), and (4) abandonment (1.9 %). While it is more than likely that these youth endured other types of abuse as well, we opted to focus on the primary allegation only, as a means for investigating collective parental risks apparent among these relatively understudied forms of maltreatment among adolescents.

## Out of Home Placement Status

The caseworkers recorded whether the youth stayed at home or were placed in out-of-home (OOH) care at each wave (commonly referred to as “foster care”). These OOH placement types included non-relative foster care, kin care, group homes, and other placements. However, we examined OOH care placements collectively and not by each placement type. The length of OOH placement through the youths’ life was reported as well. Unfortunately, we do not have data on the youths’ child welfare involvement prior to Wave 1 of NSCAW.

We measured OOH placement status according to the following three metrics. The first metric defines the in-home or OOH care group at each wave (i.e., Wave 1 or Wave 3). The second metric classified the youth into four groups regarding placement changes from Wave 1 to Wave 3: (1) remained in-home, (2) moved from in-home to OOH, (3) moved from OOH to in-home, and (4) remained in OOH care. Finally, we calculated the third metric by determining the proportion of OOH care days from Wave 2 to Wave 3. We used this method because baseline Wave 1 data did not provide the length of previous time spent in OOH care, and thus the proportions from Wave 1 to Wave 3 could not be generated. Further, the interval between Wave 2 and Wave 3 varied largely across the sample, so the proportion of OOH care days were calculated with the interval as a denominator.

In Table 3, we provide information on caregiver and youth risk factors. *Caregiver and environmental risks.* This information was gathered at Wave 1 by caseworkers at the time of the case investigation, with each item recorded as presence versus no-presence on risk assessment instruments. NSCAW utilized established risk assessment information yielded from the respective states’ child welfare investigation techniques. We therefore had 14 risk assessment items for the caregivers who were associated with referrals to the state child welfare systems. The 14 items for caregivers include measures of: previous reports of child maltreatment (58.4 %), high stress in family (49.4 %), poor parenting skills (39.4 %), low social support (32 %), economic difficulties (26.8 %), mental health difficulties (18.7 %), recent history of arrest (13.3 %), substance abuse (alcohol = 11.1 %; drug use = 9.93 %), ongoing intimate partner violence (9.6 %), caregivers’ own childhood history of child abuse (9.6 %), cognitive impairments (9.2 %), inappropriate parenting (7.8 %), and physical impairment (6.6 %).

*Youths’ special needs.* Presence of special needs was gathered on risk assessment tools at Wave 1 by caseworkers and indicated as presence vs. no-presence. This risk assessment variable reflects the general category of children’s developmental disabilities or special socio-emotional needs.

*Youths’ behavioral/emotional functioning.* The Child Behavior Checklist (CBCL; Achenbach 1991) was used to measure behavioral health of the youth and examine associations over time with the perpetration of emotional abuse and neglect. In this study we used the subscales on the CBCL: externalizing, internalizing, as well as the cumulative total problem behavior scale. Caregiver report of the CBCL was the source of the behavioral rating at the Wave 3. T-scores standardized by age and gender were used, with higher scores indicating more problem behaviors. The youth were also grouped into the clinical range

**Table 1** Types of Maltreatment and OOH status (unweighted  $n = 511$ , weighted  $N = 268,594$ )

Variable	Min.	Max.	Weighted %	Weighted mean	Linearized SE
Type of maltreatment					
Emotional abuse			14.11		
Physical neglect			24.52		
Other forms of neglect			59.43		
Abandonment			1.94		
OOH status					
At W1					
In-home			77.98		
OOH			22.02		
Foster care			5.49		
Kin care			4.94		
Group home			2.29		
Other OOH			9.30		
At W3					
In-home			83.41		
OOH			16.59		
Foster care			6.11		
Kin care			4.93		
Group home			3.08		
Other OOH			2.47		
From W1 to W3					
Stay in-home			71.71		
In-home to OOH			5.85		
OOH to in-home			4.03		
Stay OOH			9.22		
Not ascertained			9.20		
Proportion of OOH days bw W2 and W3	0.00	100.00		6.58	1.60

Categories of Neglect include: physical neglect (failure to provide); supervisory (failure to supervise); other (moral/legal/educational neglect); abandonment

and the non-clinical range (e.g. normal, borderline) group for externalizing, internalizing, and total problem behaviors, respectively. The clinical range was defined as a T-score of 64 or above on the respective scale. The CBCL is norm-referenced for large populations, and therefore socioeconomic status and race have little effect on the scores.

## Data Analyses

### Missing Value Analysis

Before conducting our primary analysis we examined the data for missing values, which were less than 10 % across all variables, except for the four caregiver/environmental risk items (10 % for alcohol and drug abuse, respectively; and 26 % for one's own history of abuse) and the CBCL measures (13 %). To test whether data were missing

completely at random (MCAR) we used Little's MCAR test (Little 1988), which indicated that the data were missing completely at random,  $\chi^2(22) = 23.06, p = .40$ . Thus, latent class analysis (LCA) using caregiver/environmental risk items were conducted with the entire sample ( $n = 511$ ), utilizing the Full Information Maximum Likelihood (FIML) method (Muthén and Muthén 2010).

### Primary Analysis

To test if there were discrete classes identified by different constellations of caregiver risks, latent class analysis (LCA) was conducted using Mplus 5. Next, to explore distinguishing characteristics among the identified classes, a series of bivariate analyses, using uncorrected  $\chi^2$  for categorical variables or adjusted Wald  $F$  test for continuous variables with STATA 11, examined whether the identified classes were related to abuse type, OOH placement status,

**Table 2** Descriptives of demographics (unweighted  $n = 511$ , weighted  $N = 268,594$ )

Variable	Min.	Max.	Weighted %	Weighted mean	Linearized SE
Characteristics of caregiver					
Country of birth					
U.S.			92.12		
Non-U.S.			7.85		
Not ascertained			0.03		
Gender					
Male			14.05		
Female			84.02		
Not ascertained			1.03		
Age	19.00	79.00		38.44	.60
Education					
>HS			30.26		
=HS			34.99		
<HS			31.68		
Not ascertained			3.07		
Romantic relation					
Married			27.96		
Separated			13.88		
Divorced			14.39		
Widowed			3.86		
Never married			21.11		
Live-in partner			15.27		
Not ascertained			3.52		
Relation to the child					
Bio-parent			70.66		
Other relatives			20.79		
Non-relatives			8.55		
Urbanicity					
Urban			77.42		
Non-urban			22.58		
Characteristics of child					
Race					
White			43.33		
Black			29.74		
Hispanic			16.79		
Other			9.64		
Not ascertained			0.39		
Gender					
Boy			46.99		
Girl			53.01		
Age at W1 (years)	11.00	15.00		12.60	.09
11			23.33		
12			23.82		
13			27.53		
14			20.37		
15			4.96		
Special needs					
Yes			24.84		
No			72.81		
Not ascertained			3.35		

**Table 2** continued

Variable	Min.	Max.	Weighted %	Weighted mean	Linearized SE
Behavioral/emotional outcome <sup>a</sup>					
Internalizing	31.00	86.00		55.60	.99
Clinical range <sup>b</sup>			25.28		
No			61.60		
Not ascertained			13.11		
Externalizing	32.00	88.00		59.86	.92
Clinical range <sup>b</sup>			37.51		
No			49.38		
Not ascertained			13.11		
Total problems	23.00	86.00		59.48	1.03
Clinical range <sup>b</sup>			36.88		
No			50.00		
Not ascertained			13.11		

<sup>a</sup> T scores of the Achenbach's Child Behavior Check List (CBCL)

<sup>b</sup> T scores  $\geq$  64

and characteristics of the youth and their primary caregivers, as well the youth's behavioral/emotional functioning. Subsequent post hoc analyses were conducted, using multinomial logistic regression or Wald *F* test. To address the complex sampling design attributes, Taylor Series linearization methods were applied in all analyses.

## Results

Results of the LCA resulted in four classes of caregivers' risks, among those who were involved with the child welfare system due to the following types of maltreatment: emotional abuse, physical neglect, supervisory/other neglect, or abandonment. Several models were compared using a different number of classes in order to determine the overall fit of the models and arrive at substantive meanings of the classes (Muthén and Muthén 2009). Ultimately, a four-class solution was determined most appropriate, resulting in four subtypes of caregiver risks among this population of maltreated youth (See Table 4).

Profiles of the four classes are displayed in Fig. 1. The majority of the primary caregivers belonged to either Class 1 (49.0 % of the caregivers) or Class 2 (42.6 %). Class 1 caregivers were more likely to have no other risk but *personal history of abuse* and we therefore call this group "Historical Risk". The group of Class 2 caregivers was differentiated by the following indicators: *recent history of arrest*, *serious mental health problems*, *inappropriate parenting*, *low social support*, and *problems in paying necessities*, as well as *history of abuse*. As such, we refer to this group as "Comprehensive Risk."

Class 3, consisting of 4.9 % of the caregivers was primarily characterized by the following two risk factors: *low*

*social support* along with *history of abuse*. We thus refer to this group as "Relational Risk." Finally, Class 4 consisted of 3.5 % of the caregivers, who manifested no salient risk factors. We labeled Class 4 as the "No Risk" group. The four-class model showed a clear distinction between classes, resulting in only one class with a high probability of membership in that class and the other classes having a low probability. For example, primary caregivers in Class 1 (Historical Risk) had an average probability of .935 of classifying in that group, and probabilities of grouping in Class 2 (Comprehensive Risk), Class 3 (Relational Risk), and Class 4 (No Risk) was .065, .000, and .000, respectively.

The conditional probabilities endorsing each risk item within each group contributed to the categorization of the four classes. Those risk items with high probabilities (that is, probabilities greater than .40) were considered highly endorsed by individuals in that particular class.

In this analysis, we investigated whether the four previously identified latent classes of caregiver risks were related to a host of child welfare case characteristics, caregiver attributes, and child factors both at baseline and subsequently at Wave 3. These results are displayed in Table 5.

## Types of Abuse

There were no significant differences between the latent classes regarding maltreatment reports (emotional; physical neglect; supervisory/other neglect; abandonment). This may be due in part to the co-occurrence of these types of maltreatment inherent in the NSCAW derived variable ("most serious form of abuse" notwithstanding co-occurrence).

**Table 3** Caregiver/environmental risks (unweighted  $n = 511$ , weighted  $N = 268,594$ )

Variable	Weighted %
Prior report of abuse	
Yes	58.44
No	37.35
Not ascertained	4.11
High stress in family	
Yes	49.37
No	47.89
Not ascertained	2.74
Poor parenting skills	
Yes	39.44
No	57.63
Not ascertained	2.94
Low social support	
Yes	32.04
No	64.82
Not ascertained	3.14
Trouble to pay necessities	
Yes	26.82
No	69.27
Not ascertained	3.91
Mental health problems	
Yes	18.66
No	74.29
Not ascertained	7.05
Recent arrest	
Yes	13.31
No	77.10
Not ascertained	9.59
Active drinking	
Yes	11.14
No	78.49
Not ascertained	10.37
Active drug use	
Yes	9.93
No	79.70
Not ascertained	10.37
Active domestic violence	
Yes	9.85
No	83.89
Not ascertained	6.26
History of abuse	
Yes	9.55
No	64.03
Not ascertained	26.42
Cognitive impairment	
Yes	9.22
No	84.32

**Table 3** continued

Variable	Weighted %
Not ascertained	6.46
Inappropriate parenting	
Yes	7.84
No	87.66
Not ascertained	4.50
Physical impairment	
Yes	6.62
No	88.48
Not ascertained	4.89

**Changes in Placement Status**

There were, however, significant differences regarding OOH placement between the four classes at Wave 3 ( $\chi^2 = 43.29$ ,  $df = 3$ ,  $p = .012$ ), whereas such differences were not significant at Wave 1. Post-hoc comparisons indicated that at Wave 3, youth from the *Comprehensive Risk* class were more likely to be placed in OOH care than those from either the *Historical Risk* class (Post-hoc: log-odds = 1.75,  $p = .002$ , 95 % CI .69, 2.81, relative risk ratio = 5.76) or *No Risk* classes (Post-hoc: log-odds = 21.20,  $p = .000$ , 95 % CI 19.61, 22.78, relative risk ratio = 1.61e+09); and youth from *Historical Risk* were more likely to be placed in OOH care than those from *No Risk* (Post-hoc: log-odds = 19.45,  $p = .000$ , 95 % CI 17.67, 21.22, relative risk ratio = 2.79e+08). Further, the proportion of days in OOH care between Wave 2 and 3 was different across the classes (Wald  $F = 6.67$ ,  $df = 1$ , 80,  $p = .012$ ). The children from the *Comprehensive Risk* class were more likely to stay longer in OOH care than those from all other classes (post hoc:  $t = 2.61$ ,  $p = .011$ ;  $t = 4.16$ ,  $p = .000$ ; and  $t = 2.36$ ,  $p = .021$ , respectively).

**Demographic Characteristics of the Caregiver**

The latent classes differed significantly by sociodemographic characteristics of primary caregivers with regard to gender and age. However, country of birth, levels of education, marital status, and relation to the child were not related to class membership.

Caregivers' gender was different by the classes ( $\chi^2 = 55.98$ ,  $df = 3$ , 81,  $p = .009$ ). Compared to the *Comprehensive Risk* class, caregivers in the *No Risk* and *Relational Risk* classes tended to consist of male caregivers rather than female caregivers (post hoc: log-odds = 3.35,  $p = .023$ , 95 % CI, relative risk ratio = 28.62: .47, 6.24; log-odds = 1.65,  $p = .014$ , 95 % CI .35, 2.96, relative risk ratio = 5.23, respectively).

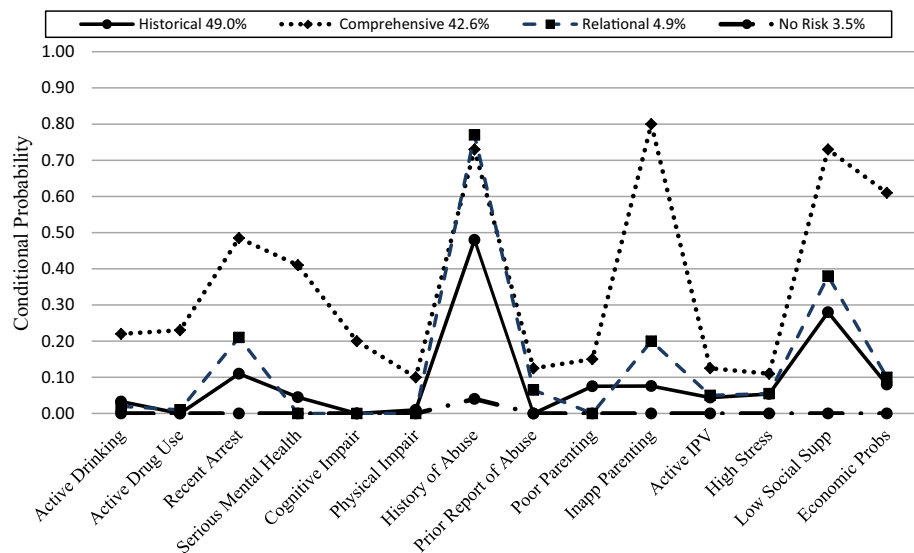


**Table 4** Latent Class Analysis Fit Indices by Number of Classes

Fit index	Number of classes				
	1	2	3	4	5
Log likelihood	−4868.92	−4385.49	−4052.24	−3948.64	−3838.63
AIC	9793.82	8884.97	8276.47	8127.28	7965.26
Adj-BIC	9823.57	8945.52	8367.82	8249.43	8118.22
Entropy	N/A	.985	.892	.916	.895
Vuong-Lo-Mendel Rubin LRT	N/A	960.70 ( $p = .68$ )	674.13 ( $p = .65$ )	114.54 ( $p = .69$ )	203.46 ( $p = .77$ )

AIC Akaike information criteria, Adj-BIC adjusted Bayesian information criteria, LRT likelihood ratio test

**Fig. 1** Profiles of parents' risks for each of the latent classes. Note: Class 1 = historical risk, Class 2 = comprehensive risk, CLASS 3 = relational risk, Class 4 = no risk



Caregivers' age was also significantly related to the classes (Wald  $F = 7.42$ ,  $df = 1$ ,  $81$ ,  $p = .008$ ). As such, *No Risk* caregivers were more likely to be younger than those from the other classes (post hoc:  $t = -4.93$ ,  $p = .000$ ;  $t = -3.19$ ,  $p = .002$ ; and  $t = -9.44$ ,  $p = .000$ , respectively). And, *Comprehensive Risk* caregivers were more likely to be older than caregivers in the *Historical Risk* class (post hoc:  $t = 2.60$ ,  $p = .011$ ).

### Characteristics of the Youth

In the analysis of Wave 1 youth related factors that could be associated with the classes, we found only two that were significant: gender and presence of special needs. Youths' gender was associated with the classes ( $\chi^2 = 17.65$ ,  $df = 3$ ,  $81$ ,  $p = .023$ ). Three of the classes (*Historical*, *Relational*, and *Comprehensive Risk*) were more likely to contain boys, compared to the *No Risk* class (post hoc: log-odds = 3.23,  $p = .004$ , 95 % CI 1.06, 5.37, relative risk ratio = 24.93; log-odds = 3.98,  $p = .001$ , 95 % CI 1.72,

6.23, relative risk ratio = 53.35; log-odds = 3.39,  $p = .001$ , 95 % CI 1.39, 5.39, relative risk ratio = 29.99, respectively). Alternatively, girls were more likely to be children of caregivers associated with this *No Risk* class.

Documentation of youths' special needs at Wave 1 was also associated with the classes ( $\chi^2 = 78.46$ ,  $df = 3$ ,  $81$ ,  $p = .000$ ). As such, those with special needs were more likely to come from the *Relational* and the *Comprehensive Risk* classes, compared to the *Historical Risk* class (post hoc: log-odds = 1.76,  $p = .000$ , 95 % CI 1.05, 2.47, relative risk ratio = 7.25; log-odds = 1.68,  $p = .001$ , 95 % CI 1.07, 4.29, relative risk ratio = 4.69, respectively). Compared to the *No Risk* class, caregivers in the *Relational* and the *Comprehensive* classes were also more likely to be related to raising youth with special needs (post hoc: log-odds = 19.31,  $p = .000$ , 95 % CI 18.60, 20.02, relative risk ratio = 2.44e+09; log-odds = 20.23,  $p = .000$ , 95 % CI 18.62, 21.84, relative risk ratio = 2.44e+09, respectively). Finally, the *No Risk* caregivers relative to the *Historical Risk* caregivers were less likely to be associated

**Table 5** Relations between variables and the latent classes of primary caregivers' risks

Variable	Percentage (Mean)				$\chi^2$	Wald <i>F</i>	<i>df</i>	<i>p</i>
	Class1 Historical risk	Class2 Comprehensive risk	Class3 Relational risk	Class4 No risk				
Type of abuse					25.69		9	.483
Emotional abuse	12.9	15.4	27.1	0.0				
Physical neglect	22.3	23.5	26.0	67.3				
Other neglect	63.4	58.3	47.0	32.7				
Abandonment	1.5	2.9	0.0	0.0				
OOH care status					31.29		3	.064
At W1								
OOH	6.4	22.1	28.0	0.0				
In-home	93.6	77.9	72.0	100.0				
At W3					43.29		3	.012
OOH	7.1	30.3	12.4	0.0				
In-home	93.0	69.7	87.6	100.0				
From W1 to W3					44.03		9	.103
Stay in home	87.1	66.2	69.2	100.0				
OOH to in-home	5.0	4.0	19.1	0.0				
In-home to OOH	3.8	6.9	0.0	0.0				
Stay OOH	4.1	22.8	11.7	0.0				
Proportion of OOH days between W2 and W3	(3.4)	(11.5)	(3.4)	(0.0)		6.67	1, 80	.012
Characteristics of caregiver								
Country of birth					22.84		3	.064
U.S.	88.7	96.8	99.8	70.6				
Non-U.S.	11.3	3.2	0.2	29.4				
Gender					55.98		3	.009
Male	13.7	6.7	27.4	67.3				
Female	86.3	93.3	72.6	32.7				
Age (years)					7.42		1, 81	.008
Education	(37.4)	(40.1)	(38.1)	(31.7)				
>HS	31.3	33.9	30.3	0.0	41.32		6	.096
=HS	32.0	32.9	62.8	96.7				
<HS	36.8	41.4	7.0	3.3				
Romantic relationship					63.51		15	.088
Married	22.1	29.8	55.5	67.3				

Table 5 continued

Variable	Percentage (Mean)				$\chi^2$	Wald <i>F</i>	<i>df</i>	<i>p</i>
	Class1 Historical risk	Class2 Comprehensive risk	Class3 Relational risk	Class4 No risk				
Separated	14.9	16.3	3.4	0.0				
Divorced	9.8	20.9	7.9	29.4				
Widowed	2.7	6.3	1.5	0.0				
Never married	28.6	16.4	10.7	3.3				
Live-in partner	20.9	10.3	21.0	0.0				
Urbanicity					33.62		3	.065
Urban	85.8	65.2	77.0	100.0				
Non-urban	14.2	34.8	23.0	0.0				
Relation to the child					50.67		6	.067
Bio-parent	75.8	70.1	49.1	32.7				
Other relatives	20.7	15.2	35.5	67.3				
Non-relatives	3.5	14.7	15.4	0.0				
Characteristics of child								
Race					65.53		81	.064
White	41.48	49.74	45.57	0.0				
Black	27.9	33.99	34.68	3.27				
Hispanic	21.5	7.93	7.08	67.33				
Other	9.11	8.33	12.67	29.4				
Gender					17.65		3, 81	.023
Male	46.0	50.0	64.3	3.3				
Female	54.0	50.0	35.7	96.7				
Age (years)					37.56		12, 81	.322
11	(12.4)	(12.8)	(12.6)	(12.3)				
12	27.1	19.1	36.9	0.0				
13	25.5	20.2	3.0	70.6				
14	27.9	26.9	27.3	29.4				
15	16.8	25.8	27.0	0.0				
Special needs	2.7	8.1	5.7	0.0				
Yes	12.2	44.5	66.8	0.0	78.46		3, 81	.000
No	87.8	55.5	33.2	100.0				
Child behavioral/emotional outcome <sup>a</sup>								
Internalizing problems	(55.9)	(55.3)	(57.4)	(46.1)	2.07		3	.615

**Table 5** continued

Variable	Percentage (Mean)				$\chi^2$	Wald <i>F</i>	<i>df</i>	<i>p</i>
	Class1 Historical risk	Class2 Comprehensive risk	Class3 Relational risk	Class4 No risk				
Clinical range <sup>b</sup>	28.1	31.6	25.0	8.7				
Normative	71.9	68.4	75.0	91.3			3	.442
Externalizing problems	(59.9)	(60.3)	(61.6)	(42.7)	3.73			
Clinical range <sup>b</sup>	43.1	43.3	52.9	8.7				
Normative	56.7	56.7	47.1	91.3			3	.452
Total problems	(59.4)	(60.1)	(61.1)	(39.9)	3.57			
Clinical range <sup>b</sup>	42.4	42.6	51.8	8.7				
Normative	57.6	57.5	48.2	91.3				

For categorical variables, uncorrected Chi square tests were used. For continuous variables, adjusted Wald *F* tests were used

<sup>a</sup> T scores in the Achenbach's Child Behavior Check List (CBCL) were used

<sup>b</sup> T scores in the CBCL scale of 64 or more

with youths' special needs (post hoc: log-odds =  $-31.55$ ,  $p = .000$ , 95 % CI  $-33.64$ ,  $-29.46$ , relative risk ratio =  $1.83e-14$ ).

The second longitudinal outcome we explored (in addition to placement status across Wave 1 and Wave 3) was the presence of behavior problems at this subsequent time point. Although there were high rates of total behavioral problems (36.9 %) overall (externalizing = 37.5 % and internalizing = 25.3 %), these difficulties were not significantly related to the classes.

### Discussion

This exploratory study builds on the current research literature in a number of ways. First, it extends on the recent progress in examining specific categories of child maltreatment (Merritt and Snyder 2014; Simmel and Shpiegel 2013; Snyder and Merritt 2014; Snyder and Merritt 2015), especially neglect and emotional abuse. Given the heterogeneity in characteristics associated with types of neglect among Western definitions of child rearing, understanding each type of neglect and associated parental characteristics is a complex task. Current research lacks consensus on refined definitions of the meaning of specific types of child maltreatment (e.g. emotional neglect), based on child and parental characteristics. There are many complexities to consider when assessing what parental behaviors are neglectful and for whom (e.g. child's developmental stage). Second, our study offers new directions for exploring risk factors that culminate in the perpetration of maltreatment of adolescents (e.g., Trickett et al. 2011; Villodas et al. 2012). Third, this study advances the methodological approaches utilized in recent research on child maltreatment and child welfare (Fowler et al. 2013; Li and Godinet 2014) by using the person-centered method of Latent Class Analysis (LCA) in a large, nationally representative sample of adolescents involved with the child welfare system. It is important to underscore the uniqueness of this study sample as a channel for exploring risks associated with neglect and emotional abuse. By using a broad population involved with child welfare systems, but not necessarily placed in out of home care (OOH), we thus have ample heterogeneity in the families' presentation of risk conditions and outcomes in children. Whereas some of our results are curious and suited for speculative interpretation, our discussion of the overall story and implications are framed around the most salient and meaningful results.

The identification of four distinct classes of caregiver risk (*Historical Risk*, *No Risk*; *Relational Risk*; *Comprehensive Risk*) among child neglect categories provides the template for an assessment of covariates at the child, parental, and situational level. Caregiver risk among parents in

this sample is nearly evenly split between those who have a personal history of abuse or neglect (*'Historical Risk,' Class 1*) and those who have a whole host of risk determinants (*'Comprehensive Risk,' Class 4*). Fewer parents proportionally suffer from both a history of abuse and lack of social support or those with no risk factors than those with a comprehensive set of risk factors or only a history of abuse. This supports initiatives that intentionally maximize services with particular attention to the intergenerational transmission component of learned behavior, as well as cases wherein there are a multitude of co-occurring risk factors.

This study supports the work of Thornberry and Henry (2013), in that parents who have suffered previous abuse have a propensity for maltreatment of their children into the adolescent stage of development of their children. Despite the dearth of research demonstrating a salient link between the history of abuse as a sole predictive factor related to types of neglect, a cycle seems to be at play, worthy of future research and accompanying appropriate service design and delivery. Above and beyond any experiential or environmental risk factors manifesting in adulthood, the sole experience of having a history of childhood abuse should be considered a risk to address in preventative services. Services should begin with the identification of prior exposure to child maltreatment followed by efforts to encourage positive parenting techniques in an attempt to minimize the impact of negative learned behavior. Moreover, parents with only a history of abuse and those with a comprehensive set of risks would benefit from tailored services to address their individual and environmental challenges and encourage positive parenting behaviors.

Our results did not provide insight as to how caregiver risk factors manifest among the assessed maltreatment types. This is an interesting finding that child neglect types (e.g. emotional abuse; physical neglect; supervisory/moral/legal/educational neglect; abandonment) do not significantly differ across caregiver risk classes. This is quite likely due to the co-occurrence of maltreatment types inherently captured in the NSCAW derived variable, thus muddying potential associations. An additional potential limitation here is that our sample size was relatively small for detecting significant differences between the abuse types. Future assessments regarding the correlates of specific types of maltreatment would be beneficial providing the sample size was ample to make reliable inferences. Our sample did not allow for an inquiry specific to the maltreatment types comprised in the 'other forms of neglect' category. We entered into this research without specific expectations regarding how classes of caregiver risk might associate differentially with maltreatment type, however, these findings suggest a need for service

development suitable to address the co-occurrence of multiple types of neglect in a broad manner.

Additionally, given risk factors are more salient once families are subjected to the oversight of the child welfare system (post baseline data collection), perhaps the risk determinant's of parents is less so linked to initial child welfare involvement (i.e. precipitating factors inciting an investigation and caseworker determination) than the trauma triggered when parents are placed under the supervision of the child welfare system. Such that it follows, caregiver risk factors play a larger role once children are placed in OOH care, which may play a role in children being ultimately placed in care and the increased length of time in placement between Waves 2 and 3. Policy and service enhancements would be best designed foremost in consideration of the placement outcomes, both based on maltreatment type and resulting from involvement with the child welfare system. Secondly with respect to the caregiver traits most closely associated with the type of maltreatment in addition to parental report of a history of maltreatment.

Moreover, given there were no significant associations with the specific types of maltreatment and caregiver risk factors at baseline data collection, these results are most useful for understanding how caregiver risk factors are related to specific child/caregiver demographic characteristics. Consistent with previous research (Simmel 2010), our study finds types of child maltreatment are best assessed through the identification of associations between specific child and caregiver demographic characteristics.

Not surprisingly and perhaps as validation of cautious caseworker decision making, youth under the care of parents plagued by multiple maltreatment risk factors are placed in out of home care and remain for longer periods of time (between the last two waves of data collection) under the purview of child welfare oversight. Further, youth cared for by parents indicating a history of child abuse were deemed more likely in need of OOH placements than parents without salient risk factors for maltreatment. Whereas, we cannot speculate as to why these youth were flagged as a more pressing consideration for services, there is clearly a prevalence of maltreated youth in out of home care among caregivers who endured child maltreatment as well.

Of note, more men classified by either the absence of risk factors, or a history of maltreatment coupled with low social support, compared to women were more likely to display multiple risk factors (*Comprehensive Risk*). These findings suggest at the very minimum, the need for services to provide basic parenting support for men, while addressing any indication of a history of maltreatment. Additionally, women whom are considered primary to the rearing of children are especially vulnerable to co-

occurring parental challenges, indicating a need for comprehensive services in an effort to prevent child neglect based on their particular individual and environmental contexts.

Whereas, one might assume younger parents would have a more difficult time with fulfilling a new parental role, it seems younger parents in this sample are less likely to display noticeable caregiver risk factors. Similarly and perhaps due in part to the trials that come along with life experience, older parents are more likely to classify in the group enduring multiple challenges (*Comprehensive Risk*) related to parenting. Older parents, who have endured a longer time in the more challenged strata of our society, have likely experienced myriad parental challenges. Further, by the sheer virtue of having experienced more life, one might be understandably more prone to a comprehensive set of risks.

In addition to the gender differences among caregivers, our results indicate some striking youth gender differences as associated with caregiver risk factors. As such, the findings suggest that support for parents of boys may need heightened attention based on the finding that boys are more likely cared for by parents classifying in the three classes indicating a range of risk factors from solely a history of abuse to multiple challenges. Comparatively, girls are significantly more likely to be cared for by those parents without any identified risk factors.

The challenges of parenting are even more heightened when caring for a youth with special needs (i.e., emotional and behavioral health difficulties). Not surprisingly, youth with special needs are less likely associated with parents without salient risk factors than those parents with a history of personal experiences of abuse and neglect. Similarly, special needs children are more likely cared for by parents with low social support and multiple risk factors, including a history of abuse and neglect than parents with an absence of risk determinants. Good practice would support flagging parents displaying multiple risks and also caring for youth with special needs in an effort to buffer the extraneous parenting challenges of caring for a special needs youth.

As child behavior differs according to age group, so follows parental behavior as a response to these developmental stages, and based on the parent–child relationship. In order to address distinct forms of maltreatment, particularly neglect and emotional abuse, one must understand how developmental stages are associated with each of these forms of abuse. Because our study emphasized caregivers risk factors associated with collective types of emotional abuse and neglect—as opposed to between these types of maltreatment—we were able to highlight demographic characteristics distinctly associated with certain classes of caregiver risk factors. In addition to a need for useful intervention

approaches that focus attention on specific caregiver traits according to age related levels of risk, prevention efforts should be driven by early assessments of these risk factors prior to children and adolescents being placed and spending an inordinate amount of time in OOH care.

Our findings should be interpreted with caution due to certain inherent limitations in this secondary dataset. For instance, our analyses were limited in that our research questions were confined to the parameters of the dataset. Of note is that the measures of caregiver risk factors, though culled from protocols used by state child welfare professionals, are only dichotomous indices of such risks and do not reflect the degree to which these difficulties manifest in families' lives. Missing data on certain variables across waves may have hindered our sample size. Although we were able to include a comprehensive set of covariates due to the richness of the dataset, we cannot be certain that we have captured all the possible explanatory associations with each of the classes. For instance, the out of home placement (OOH) variable is comprised of quite distinct caregiver settings, and thus doesn't allow us to comment on differences between these types of settings, such as foster care versus kinship care or group homes. Further, the maltreatment type variable is limiting in that it assesses the most serious type of maltreatment in the context of likely co-occurrence among types.

In sum, this exploratory research indicates parents with a history of childhood abuse and those with multiple combined risk factors are clearly vulnerable to poor parenting practices. Although our results confirm reasonable expectations, our study further supports the notion that intergenerational transmission of abusive behavior is a salient characteristic to address in efforts to prevent the perpetuation of maltreatment (Pears and Capaldi 2001; Thornberry and Henry 2013; Thornberry et al. 2012). Further, addressing comprehensive risk factors, especially for female caregivers, is paramount in supporting families with adolescents at risk for maltreatment, as well as decreasing the time spent in OOH care. Ideally, comprehensive services are needed to address the complexities of co-occurring risk factors at multiple levels (i.e. endogenous, micro level, as well as environmental) with specific attention to understanding risk factors affecting caregivers of adolescents. We would suggest future research continue to tease out ways in which parents can be supported (based on their specific circumstances and accompanying challenges) and youth (based on their endogenous issues) can be protected from harm, particularly nebulous forms of maltreatment, such as neglect and emotional abuse. Our research findings reinforce the existing literature suggesting that the child welfare system lacks a comprehensive prevention focus for families with adolescents.

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