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Predictors of Externalizing Behavior Problems in Early Elementary-Aged Children: The Role of Family and Home Environments

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Abstract

As children enter elementary school they display behavioral orientations that reveal potential developmental trajectories. Developmental transitions offer unique opportunities for examining developmental pathways and the factors that influence emerging pathways. The primary goal of this investigation was to examine characteristics of family and home contexts in predicting externalizing behavior problems among children transitioning into elementary school. Dimensions of the family and home environments of maltreated and nonmaltreated children ($N = 177$) were examined and used to predict externalizing behavior problems. Maltreatment was assessed using case file information, characteristics of the family and home environment were rated by interviewers, and externalizing behavior was assessed by mother's ratings on the Child Behavior Checklist (CBCL). Relative to nonmaltreated children, the family environments of physically abused children were characterized by higher levels of negative social interactions. Also, in comparison to nonmaltreated children, the home environments of children who experienced neglect were characterized as less organized and clean. Hierarchical regression analyses revealed that physical abuse was the strongest predictor of externalizing behavior. After controlling for the contribution of physical abuse, mother's negative behavior toward the focal child, aggression between siblings, and the lack of an organized and clean home were each predictive of externalizing behavior.

Keywords

Externalizing behavior; maltreatment; early experience

Bronfenbrenner's ecological systems theory (Bronfenbrenner, 1989) posits that the experiences associated with social contextual systems influence the developmental trajectories of children's behavioral orientations. By the time children enter elementary school behavioral patterns emerge and begin to reveal potential developmental trajectories. Transitions, such as entering elementary school, offer unique opportunities for examining developmental pathways and the factors that influence these pathways. Consistent with Bronfenbrenner's theory, there is an accumulation of evidence indicating that early life

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experiences in key social contexts influence the emergence of externalizing behavior problems. In comparison to later onset of externalizing problems, early onset of externalizing behavior problems is linked with more maladaptive outcomes (Dishion & Patterson, 2006). Among the major influences on externalizing behavior problems, the experiences associated with maltreatment, especially physical abuse, have been linked to the early emergence of externalizing behavior problems (Manly, Cicchetti, & Barnett, 1994; Dodge, Pettit, & Bates, 1990). Other aspects of the family environment have been found to be related to the development externalizing behavior problems. Research by Patterson and colleagues (see Dishion & Patterson, 2006) reveals that coercive parent/child interactions, (i.e., interactions characterized by reciprocal and escalating negative exchanges) and harsh parenting styles can contribute to an increased rate of aggressive behavior and externalizing behavior problems in young children. In addition, there is evidence indicating negative or coercive exchanges between siblings can also contribute to the development and/or maintenance of externalizing behavior problems (Ensor, Marks, Jacobs, & Hughes, 2010).

Dimensions of the physical and home environment have also been found to influence externalizing behavioral patterns, including the degree of disorganization and chaos in the home. In a sample of families with children in early grade school Deater-Deckard et al. (2009) found “household” chaos, as indicated by excessive household noise and lack of family routines, was associated with child conduct problems, both concurrently and longitudinally. Outside the home, neighborhood factors such as community-level poverty and danger, exposure to violence, victimization in the neighborhood, and exposure to deviant peers have been found to be correlates of early-starting antisocial behavior (Ingoldsby & Shaw, 2002).

Missing from this literature are studies where the contributions of multiple contextual correlates of externalizing behavior problems are examined simultaneously, especially during critical developmental transitions that can reveal early developmental trajectories. The primary goal of this study was to examine several social and home environmental predictors of externalizing behavior among a sample of children making the transition into early grade school. It was hypothesized that factors occurring before the transition into elementary school (i.e., early physical abuse) and factors assessed during this transition, including negative family interactions and negative features of the home environment (e.g., lack of an organized household) would each contribute to the prediction of externalizing behavior during early grade school.

Method

Participants

The sample was from a metropolitan area in the southwestern U.S. and consisted of 183 families (89 females and 94 males). Children were an average age of 5.43 years at assessment. The ethnic composition of the child participants was 22% African American, 50% Caucasian, 19% Latino, 8% mixed race, and 1% either Asian or Native American. Participants included families with a child who had experienced a substantiated incident of maltreatment (some form of neglect or abuse) prior to age 4 ($n = 100$) and families for whom there was no reported evidence of maltreatment (comparison group, $n = 83$). Families in the maltreated group were recruited through a county child welfare agency. Families with sexual abuse allegations were excluded. The families in the nonmaltreated group were recruited through flyers distributed in the same neighborhoods in which the majority of the families in the maltreatment group lived.

Procedures and Measures

Assessments were conducted in the participants' homes by two trained interviewers. One of the *focal* child's parents (92% mothers) completed questions about the family's background (e.g., education and occupation, marital status, number of persons in home) and assessments of child behavior and peer relationships. The *focal* child was interviewed in a separate room completing measures of social cognition. Interviewers were blind to the study hypotheses and that some of the participants had been maltreated. Parents and children were compensated for their time. This study was approved by the Institutional Review Board at San Diego State University.

Maltreatment—Case files were coded using the maltreatment classification system (Barnett, Manly, & Cicchetti, 1993), which provides operationally defined criteria for subtypes of maltreatment, including: *physical abuse*, *failure to provide* (e.g., no provision for food), *lack of supervision* (e.g., young child left unattended in street), *emotional abuse* (e.g., verbal threats, belittling), and *moral/legal abuse* (e.g., exposing children to illegal activities). Reliability was established with one of the authors of the classification system on 32 incidents (percent agreement > 80%). A primary coder familiar with social service procedures and terminology coded case files. Reliability was assessed on 18% of incidents across participants by a second coder (Cohen's kappas > .89 across all categories). All children in the maltreatment sample experienced some form of neglect at some time point, and 40 children (23 males and 17 females) experienced physical abuse. There were no differences between neglect and abuse groups on number of prior placements.

Externalizing Behavior Problems—Externalizing behavior problems were assessed using The Child Behavior Checklist—Parent Report Version (CBCL, Achenbach, 1991). The CBCL has demonstrated acceptable levels of reliability and validity and has been normed on clinical and nonclinical populations of children (Achenbach, 1991).

Characteristics of the Family and Home Environment—The 66-item Post-Visit Inventory (Dodge et al., 1990) was used to assess dimensions of the general home environment, parents' behavior toward their children, sibling interactions, adult interactions, parents' behavior toward interviewers, and interviewer's overall impression of the quality of the interview session. The interviewer of the parent completed the Post-Visit Inventory within two hours of completing the home interviews. For this study, only the items related to the physical characteristics of the home and neighborhood, mother's behavior towards children, and sibling interactions were used. Responses options for each item were "yes" or "no" to specific statements (e.g., *House is uncomfortably dirty*, *Shouts at children*, *Siblings physically fighting*). A factor analysis (using varimax rotation) of the 17 items related to characteristics of the home and neighborhood environment revealed two reliable factors: *Lack of Household Organization and Cleanliness* (six items - Cronbach's alpha = .74), and *Poor Neighborhood Safety* (four items - Cronbach's alpha = .68). For each scale, items were summed, with higher scores representing more negative aspects of the environment. Nine items from the Post-Visit Inventory assessed mother's behavior towards children - *Mother's Behavior toward Focal Child* (Cronbach's alpha = .77) and *Mother's Behavior toward Focal Child's Siblings* (Cronbach's alpha = .76). For both scales, higher scores represented more negative behavior toward child. A two-item factor derived scale of *Aggressive Sibling Interactions* was also utilized (Cronbach's alpha = .84). Due to differing family compositions, interviewers were not able to assess all dimensions of family interactions for every family, including some mother-child interactions, mother-sibling interactions, and sibling interactions. Thus, the sample sizes varied across these scales.

Results

Preliminary analyses were conducted to examine the relations between maltreatment status and dimensions of the family and home environment. A series of ANOVAs and posthoc analyses (Scheffé) were conducted with maltreatment status (nonmaltreated, neglect, and physical abuse) as the between subjects factor and dimensions the family and home environment as dependent measures. There was a marginally significant difference between groups on *Mother's Behavior toward the Focal Child*, $F(2, 165) = 2.65$, $p = .07$, and a significant difference between groups on *Mother's Behavior toward Siblings*, $F(2, 134) = 11.26$, $p = .001$. Mothers of physically abused children were more negative in their interactions with the focal child ($M = 1.38$, $SD = 1.72$) than were mothers of nonmaltreated children ($M = .78$, $SD = 1.07$, $p = .08$). Mothers of physically abused children were also more negative in their interactions with siblings ($M = 2.39$, $SD = 2.28$) than mothers in the nonmaltreated group ($M = .63$, $SD = 1.06$, $p = .001$) and mothers of neglected children ($M = 1.40$, $SD = 1.91$, $p = .05$). There was a marginally significant group difference on *Aggressive Sibling Interactions*, $F(2, 130) = 2.55$, $p = .082$, with physical abused children ($M = .21$, $SD = .62$) demonstrating more aggressive interactions than the nonmaltreated group ($M = .02$, $SD = .13$, $p = .08$). The results also revealed a significant group difference on *Lack of Household Organization and Cleanliness*, $F(2, 173) = 4.07$, $p = .019$. Families from the neglected only group evidenced significantly higher ($p = .03$) scores on this scale ($M = .79$, $SD = 1.36$) than did the nonmaltreated group ($M = .28$, $SD = .76$, $p = .03$).

To examine the contribution of maltreatment status and dimensions of home and family environments in predicting externalizing behavior problems, a series of hierarchical regression analyses with externalizing behavior problems as the dependent variable were conducted. Separate hierarchical regression analyses were used due to unequal sample sizes across family and home environment scales. In each analysis, socioeconomic status and marital status, which were found to correlate with externalizing behavior problems, were entered on the first step of the equation. Next, two dummy coded variables representing comparisons between the neglected only group and the two remaining groups, and the physically abused group and the two remaining groups were entered. On the third step one of the dimensions of the family or home environment was entered. Table 1 contains the unstandardized regression coefficients (B), the standard errors, and the standardized coefficients (β) for predictors entered into each equation.

The results of these analyses indicated that both marital status and physical abuse were predictive of maternal ratings of externalizing behavior problems. Whereas being from a two parent home was negatively associated with externalizing behavior problems, experiencing physical abuse before age 4 was positively associated with externalizing behavior problems. In fact, physical abuse was the strongest predictor of externalizing behavior problems. After controlling for the contributions of marital status and physical abuse, two additional family factors were found to be positively associated with externalizing behavior problems. Both a greater degree of mother's negative behavior toward the focal child and a greater degree of verbal and physical aggression between siblings were associated with increases in externalizing behavior problems in the focal child. In addition, a greater degree of the lack of home organization and cleanliness was found to be associated with externalizing behavior problems.

Discussion

The findings of this investigation are consistent with prior research demonstrating a relation between physical abuse and externalizing behavior (Dodge, Pettit, & Bates, 1990). Also consistent with past research, negative interactions between mothers and children (Dishion

& Pattern, 2006), aggressive interactions between siblings (Ensor et al., 2010), and the lack of a clean and organized home (Ingoldsby & Shaw, 2002) were related to externalizing behavior problems. The contribution of the current study is that each of these factors was assessed simultaneously and each contributed to the prediction of externalizing behavior as children entered elementary school. Experiencing physical abuse prior to age 4 was found to be associated with externalizing problems at ages 5 and 6. Although it is possible these children were continuing to experience physical abuse, at the time of the interviews all children were residing with their parents and were not currently under investigation for maltreatment (cases were closed by social services at recruitment). Concurrent predictors of externalizing behavior problems included not being married, as well as mother's negative interactions toward the focal child and aggressive exchanges between siblings, after controlling for the influence of physical abuse. Finally, the lack of a clean and organized home was found to be a concurrent predictor of externalizing behavior problems, again after controlling for the influence of physical abuse.

Although the current study was limited by lack of information on current maltreatment status and was constrained by single informants of the predictors and the criterion, the findings are consistent with Bronfenbrenner's theory (1989) which proposes that early experiences influence developmental trajectories. The findings from this study indicate that externalizing behavior problems apparent in early elementary school are associated with experiences occurring prior to and concurrent with the transition into elementary school. An important direction for future research will be to determine which contextual factors contribute to the onset of externalizing problems and which factors contribute to their maintenance. This type of research will have important implications for the prevention and treatment of externalizing behavior problems.

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References

- Achenbach, TM. Manual for the child behavior checklist/4–18 and 1991 profile. Burlington: University of Vermont; 1991.
- Barnett, D.; Manly, JT.; Cicchetti, D. Defining child maltreatment: The interface between policy and research. In: Cicchetti, D.; Toth, SL., editors. Child abuse, child development, and social policy. Norwood, NY: Ablex; 1993. p. 7-74.
- Bronfenbrenner U. Ecological systems theory. *Annals of Child Development*. 1989; 6:187–24.
- Deater-Deckard K, Mullineaux PY, Beckman C, Petrill SA, Schatschneider C, Thompson LA. Conduct problems, IQ, and household chaos: a longitudinal multi-informant study. *Journal of Child Psychology and Psychiatry*. 2009; 50:1301–1308. [PubMed: 19527431]
- Dishion, TJ.; Patterson, GR. The development and ecology of antisocial behavior in children and adolescents. In: Cicchetti, D.; Cohen, D., editors. *Developmental psychopathology, Vol 3: Risk, disorder, and adaptation*. Hoboken, NJ: John Wiley & Sons; 2006. p. 503-541.
- Dodge KA, Pettit GS, Bates JE. Mechanisms in the cycle of violence. *Science*. 1990; 250:1678–1683. [PubMed: 2270481]
- Ensor R, Marks A, Jacobs L, Hughes C. Trajectories of antisocial behaviour towards siblings predict antisocial behaviour towards peers. *Journal of Child Psychology and Psychiatry*. 2010; 51:1208–1216. [PubMed: 20584100]
- Ingoldsby EM, Shaw DS. Neighborhood contextual factors and early –starting antisocial pathways. *Child Family Psychology Review*. 2002; 5:21–55.

Manly JT, Cicchetti D, Barnett D. The impact of subtype, frequency, chronicity, and severity of child maltreatment on social competence and behavior problems. *Development and Psychopathology*. 1994; 6:121–143.

Biographies

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Table 1

Hierarchical Linear Regression Predicting Externalizing Problems

Steps	MBFC (n = 168)			MBS (n = 137)			ASI (n = 134)			LHOC (n = 176)			PNS (n = 177)		
	B	SE	β	B	SE	β	B	SE	β	B	SE	β	B	SE	β
Step 1.															
Holl	-.06	.05	-.08	-.06	.06	-.10	-.09	.06	-.14	-.06	.05	-.09	-.06	.05	-.09
Marriage	-3.68	1.52	-.19*	-2.45	1.67	-.13	-2.72	1.69	-.15	-3.79	1.49	-.20**	-3.79	1.47	-.20**
Step 2.															
Holl	.00	.54	.00	-.01	.06	-.02	-.04	.06	-.06	-.00	.05	-.01	-.01	.05	-.09
Marriage	-3.72	1.43	-.20**	3.05	1.06	-.17 ^m	-2.70	1.65	-.14	-3.47	1.40	-.18**	-3.59	1.40	-.19**
Neglect	2.14	1.62	.11	1.38	1.80	.07	1.03	1.88	.05 ^m	1.90	1.56	.09	1.88	1.56	.09
Physical Abuse	9.35	1.83	.40***	8.12	2.03	.36***	7.53	2.12	.33***	9.29	1.78	.40***	9.09	1.76	.39***
Step 3.															
Holl	.02	.50	.02	.00	.06	-.00	-.05	.06	-.08	-.05	.05	-.01	.01	.05	.01
Marriage	-3.89	1.41	-.20**	-3.14	1.61	-.17*	-2.76	1.63	-.15 ^m	-3.55	1.39	-.19**	-3.41	1.40	-.18*
Neglect	2.00	1.60	.10	1.17	1.81	.06	.61	1.88	.03	1.15	1.57	.06	1.68	1.55	.08
Physical Abuse	8.83	1.83	.38***	7.53	2.20	.33***	6.57	2.14	.29**	8.76	1.77	.38***	8.79	1.76	.38***
Environment	1.06	.52	.15*	.38	.46	.07	4.40	2.08	.17*	1.45	.60	.17*	1.17	.59	.13 ^m

^mp < .10;

* p < .05;

** p < .01;

*** p < .001

MBFC = Mother's Behavior toward Focal Child (higher scores represent more negative interaction)s.

MBS = Mother's Behavior toward Focal Child's Siblings (higher scores represent more negative interactions).

ASI = Aggressive Sibling Interactions (higher scores represent more verbal and physical aggression).

LHOC = Lack of Household Organization and Cleanliness (higher scores represent greater disorganization).

PNS = Poor Neighborhood Safety (higher scores represent less safety).