

Identifying and Predicting Behavior Trajectories among Preschool Children Investigated for Child Abuse and Neglect



Background

Young children involved with child welfare services are at high risk for behavior problems (e.g., Barth et al., 2008; McCrae, 2009), with both short-term and long-term consequences for well-being (e.g., Campbell et al., 2008; Fite et al., 2008; Lochman et al., 2008, and Schaeffer et al., 2003). These problems could be averted with early identification and provision of evidence-based services (e.g., Bor, Sanders, & Markie-Dadds, 2002), which benefit the children and are more cost effective for society (Heckman, 2000, 2006).

This exploratory study identified distinct externalizing behavior paths of young children over a six year period after being investigated for maltreatment. The study also identifies predictors of membership in normative and problematic behavior groups.



Research Questions

1. What is the most parsimonious number of meaningful subgroups of children following distinct externalizing behavior trajectories?
2. What are the characteristics of the children in each subgroup?
3. What characteristics of the child, parent, and caregiving environment (at age 4) predict the behavioral paths?



Research Method

Data: National Survey of Child and Adolescent Well-being (NSCAW), a nationally representative longitudinal data set.

Study Sample: n=246 4-year-olds who remained home after investigation for child maltreatment. The national population estimate (weighted data) is n=158,337. Based on national estimates, over half were girls (56.8%), and half were White (50%), 25% Black, and 20% Hispanic, 5% other race or ethnicity. About one-fifth (23%) of the caregivers were under 25 years of age, with just over half (52%) living at or below the 1999 US poverty line. Almost half (47%) were alleged to have experienced neglect as the primary maltreatment type, with close to one third (30.4%) of the cases substantiated or indicated. Just 30% received ongoing child welfare services, while 70% did not.

Measures:

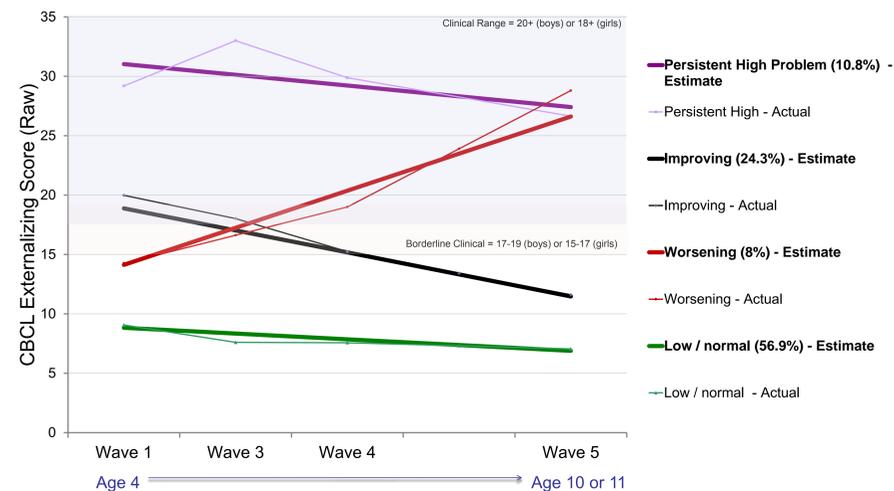
Child Behavior Checklist: externalizing behavior problems

Child characteristics: gender, race/ethnicity, internalizing behaviors (CBCL), attention problems (CBCL), and social competence (Social Skills Rating System/SSRS; Gresham & Elliott, 1990);

Parent and parenting characteristics: age, depressive symptoms, parental responsiveness (Home Observation of the Environment – Short Form; HOME-SF; Caldwell & Bradley, 1984), parent-reported assaultive and neglectful behaviors (Conflict Tactics Scale Parent-Child/CTS-PC)

Caregiver environment (general): Primary child maltreatment type investigated by CPS, poverty, and high cumulative risk.

Figure 1. Externalizing Behavior Trajectories: 4-Class LCGA Model



Behavioral paths of preschool age children involved with child welfare services vary. Internalizing behaviors and alleged neglect at age 4 predict problematic behavioral paths.



Data Analyses

Descriptive statistics were used to describe the sample and national estimates, and examine the average externalizing scores for the preschool age children investigated for child maltreatment.

Latent class growth analysis (LCGA) was used to estimate the number, size, and shape of trajectories for subgroups of preschoolers following distinct behavioral pathways over a six year period.

Early predictors of membership in the resulting groups were then examined using multinomial logistic regression.

Table 1. Child Behavior Checklist (CBCL) Externalizing Behavior Scores for Children Who Were the Subject of Child Abuse and Neglect Reports and Remained Home at Wave 1: Scores for Waves 1, 3, 4 and 5

	Wave 1	Wave 3 (18 month fu)	Wave 4 (36 month fu)	Wave 5 (six year fu)
N=246				
N	245	211	210	187
Missing	1	35	36	59
Raw Scores				
Mean	14.21	13.87	12.96	8.42
Std Dev	9.086	9.777	9.360	7.292
Range	0-49	0-45	0-44	0-38
T-scores				
Mean	56.60	55.94	54.87	53.87
Std Dev	10.914	11.643	11.421	11.675
Range	30-85	30-83	33-88	30-83
% borderline/clinical	38.4%	35.5%	32.4%	28.3%

Table 2. Latent class growth analysis model fit statistics for linear model of externalizing behavior trajectories (CBCL raw scores)

Model	Log-likelihood	Lo Mendall Rubin	BLRT	AIC	BIC	Sample Size adj BIC	Entropy
2-class	-2976.836	280.599	297.588	5971.672	6003.220	5974.691	.908
		p<.0005	p<.0005				
3-class	-2948.174	54.052	57.325	5920.347	5962.411	5924.372	.764
		p=0.0179	p<.0005				
4-class	-2937.069	20.942	22.210	5904.138	5956.718	5909.168	.766
		p=0.0917	p<.0005				
5-class	-2933.351	7.011	7.435	5902.702	5965.798	5908.739	.68
		p=0.3930	NS				
			(p=0.2667)				
6-class	-2927.599	10.620	11.263	5897.199	5970.811	5904.242	.707
		p=0.0655	p<.0005				



Results

On average, externalizing scores for the preschool age children were elevated compared to national averages, but fell within the normal range and declined over time. However, behavioral paths vary. Four groups of preschool children following distinct behavior trajectories over six years were identified. Weighted results show that more than half (61%) of the children followed a low/normal problem behavior trajectory while just over one tenth (12%) were on a persistent high trajectory, remaining in the clinical range throughout the study. The behavior problems of other children improved (23%) while a small group (4%) follow worsening behavioral paths.

Internalizing problems, attention problems, child ethnicity, and maltreatment type reported at age 4 predicted membership in the trajectory groups. Caregiver reported physically assaultive behavior approached significance. Internalizing behavioral problems at age 4 and maltreatment type (neglect) may distinguish preschool children who are more likely to experience worsening or persistent problematic externalizing behaviors from those likely to follow a normal behavior trajectory.



Strengths and Limitations

This is the first study to identify subgroups of young children involved with child welfare services who follow distinct developmental trajectories based on a nationally representative sample. The statistical model would be improved by inclusion of additional time points and data on interventions received, which were excluded due to methodological limitations.



Conclusions & Implications

Internalizing behavior problems and maltreatment type may distinguish preschool children who are more likely to experience worsening or persistent problematic externalizing behaviors from those likely to follow a normal behavior trajectory. Most interesting, internalizing behaviors early in life (at age 4) are related to persistently high externalizing behaviors and to behavioral paths that worsen over time.

Early identification of children most at risk of persistent and worsening behavior problems could improve planning and delivery of effective mental health and behavioral interventions that have the potential to change behavioral trajectories, reduce externalizing behaviors over time and ultimately improve child well-being. Participants will discuss the implications of the findings, including exploration of ways to identify the children most at risk of persistent or worsening behaviors in order to provide evidence-based services to avert long-term negative consequences.

List of references available on request.

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