

Indiscriminate Behaviors in Previously Institutionalized Young Children

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KEY WORDS

attachment, indiscriminate social behaviors, institutional care

ABBREVIATIONS

BEIP—Bucharest Early Intervention Project

CAUG—care as usual group

CI—confidence interval

DQ—developmental quotient

EIG—ever-institutionalized group

FCG—foster care group

NIG—never-institutionalized group

NS—not significant

OR—odds ratio

ORCE—Observational Record of the Caregiving Environment

StrD—Stranger at the Door

Dr Gleason developed the research question for this article, drafted the initial manuscript, and analyzed the data; Dr Fox conceptualized and designed the Bucharest Early Intervention Project (BEIP) as co-Principal Investigator, led the development of the Stranger at the Door procedure, and contributed to the development of the manuscript; Dr Drury contributed to the research question development and critically reviewed the manuscript, including analyses; Dr Smyke oversaw data collection of many of the attachment measurements, participated in reviewing the data, and critically reviewed the manuscript, including analyses; Dr Nelson conceptualized and designed the BEIP study as co-Principal Investigator and contributed to the development of the manuscript; and Dr Zeanah conceptualized and designed the BEIP study as co-Principal Investigator, participated in the development of the research question for this article, and contributed to the development of the manuscript. All authors approved the final version as submitted.

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WHAT'S KNOWN ON THIS SUBJECT: Children who have experienced early psychosocial deprivation are at high risk of persistent, socially indiscriminate behaviors. These behaviors may decline slowly with high-quality caregiving but generally are associated with ongoing impairment.



WHAT THIS STUDY ADDS: This study suggests that placement in foster care reduces indiscriminate behaviors to an intermediate level between those in institutional care and community control subjects. It also demonstrates the importance of disorganized early attachment in predicting later indiscriminate behaviors.

abstract



OBJECTIVE: This study included 54-month-old children with a history of institutional care. Our goal was to: (1) examine differences in indiscriminate social behaviors in children with a history of institutional care compared with home-reared children; (2) test whether foster care reduces indiscriminate social behaviors in a randomized controlled trial; and (3) examine early predictors of indiscriminate behaviors.

METHODS: Participants were 58 children with a history of institutional care and 31 never-institutionalized control (NIG) subjects enrolled in a randomized controlled trial of foster care for institutional care, assessed from toddlerhood to 54 months. Indiscriminate social behaviors were measured naturalistically by using the Stranger at the Door procedure.

RESULTS: In the Stranger at the Door procedure, children with a history of institutional care left with a stranger at higher rates than NIG subjects (33% vs 3.5%; $P < .001$). Children in the care as usual group left more than NIG subjects (41.9% vs 3.6%; $P \leq .001$). The differences between the foster care group (24.1%) and the care as usual group and between foster care group and NIG were not significant. In a logistic regression, early disorganized attachment behaviors, baseline developmental quotient, and caregiving quality after randomization contributed to variance at 54 months. In the same analysis using only children with a history of institutional care, only disorganized attachment contributed significantly to 54-month indiscriminate social behaviors (Exp[B] = 1.6 [95% confidence interval: 1.1–2.5]).

CONCLUSIONS: Observed socially indiscriminate behaviors at 54 months were associated with prolonged exposure to institutional care. Young children raised in conditions of deprivation who fail to develop organized attachments as toddlers are at increased risk for subsequent indiscriminate behaviors. *Pediatrics* 2014;133:e657–e665

Indiscriminate social behavior, evidenced by a lack of reticence with strangers, failure to check back with caregivers in novel environments, and leaving with strangers, is associated with a range of caregiving adversity, including a history of institutional rearing,^{1–5} maltreatment,⁶ and severe maternal psychiatric disturbance.⁷ Indiscriminate social behavior is among the most prominent and lasting social abnormalities of children reared in institutions in multiple studies.^{2,5,7–9} These behaviors represent an important component of a core deprivation syndrome described by Rutter et al³ and are associated with lasting functional and social impairment in children even after leaving institutions.⁵

Although early deprivation or adversity has been consistently related to development of indiscriminate behavior, such experiences are not sufficient to explain the persistence of indiscriminate behaviors after improvements in the caregiving environment. Specifically, characterization of the deprivation, and associated child factors that predict persistent indiscriminate behaviors, remain undetermined. Although high-quality caregiving is associated with a diminution of indiscriminate behaviors over time,¹⁰ the relatively small impact of quality caregiving indicates the need to explore other factors.^{11,12} Markers of the prenatal environment, early attachment status, cognitive development, and caregiving adversity characteristics all may contribute to indiscriminate behaviors.^{3,7,13}

The Bucharest Early Intervention Project (BEIP) provides unique opportunities to study indiscriminate social behaviors in children. BEIP examined the efficacy of foster care in reducing adverse outcomes in children with histories of institutional rearing and included comprehensive preintervention assessments and longitudinal follow-up. In this randomized controlled trial of foster care as an intervention for early institutionalization,

we used a novel, naturalistic observational measure to assess indiscriminate behavior (ie, willingness to leave home with a stranger). Use of this measure reduces reliance on potentially biased caregiver reports or on laboratory procedures with limited ecological validity, and it has been shown to be strongly associated with caregiver reports of indiscriminate behaviors.⁵

In this study, we first predicted that the rates of indiscriminate social behaviors in children with any history of institutional care would be greater than in those who have never experienced institutional care. The second question was whether placement into foster families reduces rates of indiscriminate social behaviors in children with histories of institutional rearing. A third question concerned the relative contributions of caregiving and child factors that would moderate subsequent indiscriminate behavior among young children exposed to institutional rearing. In the entire sample, and in the group of children with a history of institutional care, we examined the contributions of factors that have been reported to be associated with indiscriminate behaviors. Specifically, we examined the role of caregiving quality at baseline and at 30 and 42 months; duration of institutional care; and child characteristics (birth weight, developmental quotient [DQ], indiscriminate social behaviors, and disorganized attachment).

METHODS

This study was part of the BEIP, a randomized controlled trial of foster care for children in institutional care in Bucharest, Romania, which has been described in detail elsewhere.^{5,14–18} The intervention was implemented after baseline assessment (mean age: 22 months) and continued through child age 54 months.

Participants

The trial included children who were aged 6 to 31 months and living in institutions for young children in Bucharest, Romania, in 2001 with no signs of genetic syndromes, fetal alcohol syndrome, or neurodevelopmental problems. Children were randomized to a care as usual group (CAUG; $n = 68$) or a foster care group (FCG; $n = 68$) according to random selection. An age-matched comparison group of never-institutionalized (NIG; $n = 72$) children was recruited from pediatric clinics. The research team was blinded to group status when possible but not in observed caregiving quality or the Stranger at the Door (StrD) procedure, which were assessed where the child resided. The foster care network was created and supported by the research team because foster care in Bucharest was limited at the time.¹⁷ All placement decisions after randomization were made by the Romanian National Authority for Child Protection per Romanian law.¹⁹

In this study, we included the 60 ever-institutionalized (EIG) children (31 CAUG and 29 FCG), and 29 NIG children who completed the observational measure of indiscriminate social behaviors, the StrD procedure. This procedure was added to the study protocol approximately halfway through the 54-month data collection period. Therefore, this subsample that had the same inclusion and exclusion criteria as the full sample was younger than the full sample at randomization (mean \pm SD age: 16.4 ± 6.1 months vs 24.0 ± 6.2 months; $P \leq .001$). The subgroup had higher rates of caregiver-reported indiscriminate social behaviors at baseline (2.6 ± 1.6 vs 2.0 ± 1.8 ; $P \leq .01$) but did not differ in gender, ethnicity, baseline observed caregiving quality,²⁰ or attachment disorganization in the Strange Situation test.^{21,22} To examine factors associated with later indiscriminate behaviors, we examined

predictors in the entire group of children, including those with and without a history of institutional care, and then subsequently only in children with a history of institutional care. This second analysis, focused only on the children with a history of institutional care, was intended to allow examination of variance within a group of children known to be at highest risk of indiscriminate social behaviors. Table 1 presents the demographic characteristics of the participants.

Measures

StrD

At 54 months of age, some data collection occurred at the child's home/institution. In the StrD procedure, caregivers were instructed in advance to come to the door with the child when a research assistant who was unknown to the child (the stranger) arrived. After the parent/caregiver answered the door, this stranger looked at the child and said, "Hello, my name is _____. Come with me. I have something to show you." The parent/caregiver was instructed to stay neutral both with gestures and verbally if the child turned to him or her or asked what to do.

Coding for the procedure was 0 = "stayed with parent" and 1 = "left with the stranger." Children who "left" with the stranger were led out a short distance to meet a familiar research

assistant, and they all returned to the caregiver. Raters coded descriptions of the child's behavior documented by the research assistant at the time of the procedure; κ was 1.0 on the coding using 2 coders blinded to the child's placement. In this sample, behavior on the StrD predicted interview-derived diagnoses of reactive attachment disorder, disinhibited type, with 86.7% sensitivity and 84% specificity and overall concordance of the 2 measures of 85%.²³

Percent Time in Institution

Percent time in institution was calculated at baseline and at 54 months by summing days in each setting. This variable was selected rather than group because it represents actual experiences because the CAUG could be placed in family settings at any time after randomization according to the study protocol (Fig 1).

Caregiving Quality

Caregiving quality was assessed by using the Observational Record of the Caregiving Environment (ORCE)²⁰ at baseline and 30 and 42 months. Sensitivity, stimulation of development, positive regard for child, flat affect (reversed), and detachment (reversed) were rated on a "1" to "4" scale (not characteristic to highly characteristic) based on 1.5-hour videotaped obser-

vations during naturalistic interactions in their caregiving setting with their preferred caregiver. Scale scores were averaged to yield the overall caregiving quality value. The ORCE showed excellent internal and interrater reliability (Cronbach's α of 0.86 and 0.88–0.99, respectively).²⁴ Baseline caregiving was analyzed separately to examine whether the very early experiences contributed independently to indiscriminate social behaviors that persisted. A caregiving quality composite score, the mean of the caregiving quality score at 30 and 42 months, reflected subsequent caregiving quality.

Birth Weight

Birth weight in grams was extracted from institutional and hospital birth records.

Cognitive Development

At baseline, DQ was derived from the Bayley Scales of Infant Development—Second Edition.²⁵ The DQ was computed by dividing the age-equivalent score by chronological age and multiplying it by 100. At 54 months, cognitive development was measured by using the full-scale IQ derived from the Wechsler Preschool Primary Scale of Intelligence.²⁶

Attachment

Children who were at least 12 months of age at baseline with a cognitive age of 11 months participated in the Strange Situation test at baseline ($n = 48$).^{21,22} Coders were blinded to the child's group status.²⁷ We examined the degree of attachment relationship formation by using a 5-point scale with interrater reliability of 0.96. We also examined the degree of disorganized attachment patterns observed during the Strange Situation test at baseline by using a scale score of 1 to 9 in which 9 reflects a high level of disorganization.²⁸

TABLE 1 Composition of Study Groups

Characteristic	NIG ($n = 31$)	FCG ($n = 29$)	CAUG ($n = 29$)
Girls, n (%)	16 (50.1)	16 (55.1)	17 (58.6)
Percent time in institution at baseline	—	84.0 \pm 25.2	84.9 \pm 26.0
Age at baseline, mo	16.1 \pm 6.7	17.3 \pm 6.0	16.0 \pm 6.1
Birth weight, g	3362 \pm 458 ^{a,b}	2520 \pm 595 ^{a,c}	2894 \pm 547 ^{b,c}
ORCE baseline	2.8 \pm 0.5 ^{a,b}	2.2 \pm 0.6 ^{a,c}	1.8 \pm 0.6 ^{b,c}
Continuous rating of disorganization	3.4 \pm 2.2	4.1 \pm 2.8	4.1 \pm 2.7
Baseline indiscriminate social behaviors	1.5 \pm 1.1 ^{a,b}	3.3 \pm 1.9 ^a	3.0 \pm 1.8 ^b
Baseline DQ	101.5 \pm 10.1 ^{a,b}	79.8 \pm 12.6 ^{a,c}	70.7 \pm 14.7 ^{b,c}
Percent time in institutional care (54 mo)	0	28.0	68.7

Unless otherwise noted, data are presented as mean \pm SD.

^a Differs from other values marked with a ($P < .05$).

^b Differs from other values marked with b ($P < .05$).

^c Differs from other values marked with c ($P < .05$).

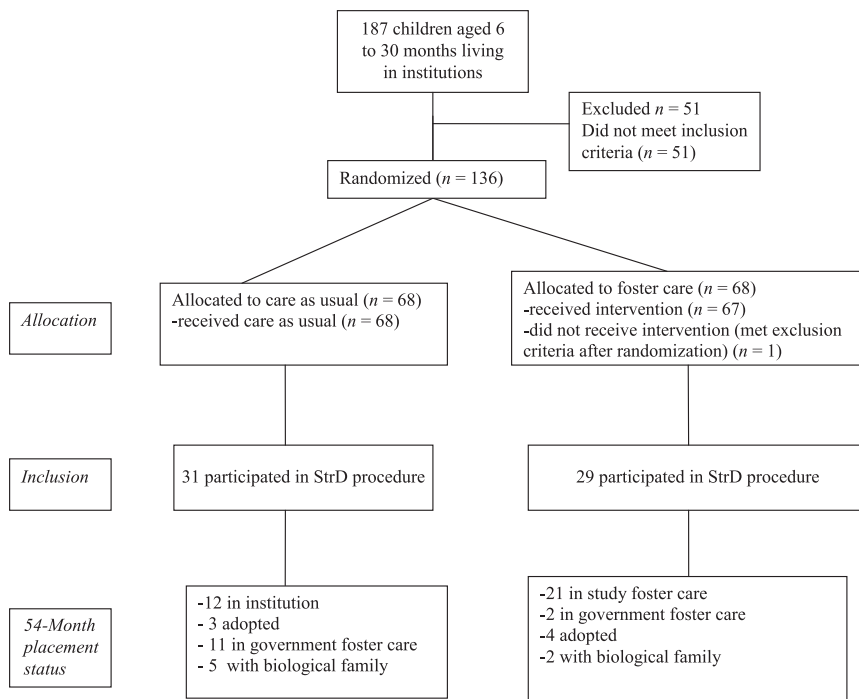


FIGURE 1
Consolidated Standards of Reporting Trials diagram.

Analysis

All analyses were performed by using SPSS version 17.0 (IBM SPSS Statistics, IBM Corporation, Armonk, NY). The groups were compared by using *t* tests for continuous variables and χ^2 analyses for categorical variables. Fisher's exact test was applied when cells had <5 subjects. In univariate analyses, factors associated with leaving in the StrD procedure were entered in a binary regression model in chronological order. Odds ratios (ORs) from the binary logistic regression indicate the relative impact of the variables and overall models.

RESULTS

Question 1: Institutional Care and Indiscriminate Social Behaviors

As expected, children with a history of institutional care were more likely to leave with a stranger than NIG children (20 of 60 [33%] vs 1 of 29 [3.5%]; $P < .001$).

Question 2: Intervention Effect (Group Assignment) and Indiscriminate Social Behaviors

In the CAUG, 13 (44.9%) of 31 children left with the stranger, compared with 7 (24.1%) of 29 children in the FCG and 3.5% in the NIG ($P \leq .01$). Pairwise contrasts revealed significant differences between CAUG and NIG subjects ($P \leq .001$; OR: 4.5 [95% confidence interval (CI): 1.5–12.5]) and a nearly significant difference between FCG and NIG subjects (OR: 8.6 [95% CI: 0.76–98]; $P \leq .052$). The difference between FCG and CAUG findings was not statistically significant (OR: 0.44 [95% CI: 0.15–1.3]; $P =$ not significant [NS]).

Question 3: Predictors of Indiscriminate Behaviors

Table 2 presents univariate associations between hypothesized predictors and indiscriminate social behavior. In the entire sample, caregiving quality at baseline and at 30 and 42 months, and percent time in institution at baseline

and 54 months, were associated with the StrD procedure. The child factors baseline DQ, 54-month IQ, and attachment disorganization also contributed to StrD. In the EIG, however, only attachment disorganization, caregiving quality at 30 and 42 months, and 54-month percent time in institution were associated with StrD behaviors. In FCG alone, the only factor associated with leaving was attachment disorganization at baseline, and small effect sizes were seen with birth weight (in opposite of predicted direction), baseline attachment formation, composite caregiving quality, IQ, and duration of deprivation. In CAUG alone, only 54 months' duration of deprivation was associated with leaving. Baseline DQ, attachment disorganization, composite caregiving quality, and IQ demonstrated small effect sizes.

Regression Model of Predictors of Indiscriminate Social Behaviors at 54 Months

In a 3-step binary logistic regression model, entering variables associated with StrD in univariate analyses, attachment disorganization, baseline DQ, and caregiving quality at 30 and 42 months each contributed significantly to StrD behaviors in the entire sample. For children with a history of institutional care, baseline disorganization attachment contributed to variance of StrD behaviors. The contribution of composite caregiving at 30 and 42 months approached but did not reach statistical significance (Table 3). When group was substituted for caregiving quality and percent time in institution (not shown), disorganization contributed significantly (Exp[B] = 1.5 [95% CI: 1.1–2.2]; $P \leq .02$) and group did not contribute (Exp[B] = 1.4 [95% CI: 0.3–7.3]; $P =$ NS).

In a post hoc analysis, responsiveness to caregiving quality varied according to attachment disorganization status

TABLE 2 Univariate Associations With Indiscriminate Social Behaviors in StrD Procedure

Age	Variable	Stayed (Mean ± SD)	Left (Mean ± SD)	P	Effect Size	
EIG + NIG						
Baseline	Indiscriminate behaviors	2.5 ± 1.8	3.1 ± 1.8	NS	0.15	
	Caregiving quality	2.4 ± 0.7	2.0 ± 0.6	≤.01	0.25	
	Duration deprivation	47.8 ± 45.9	77.7 ± 30.6	.01	0.43	
	Birth weight, g	2947.3 ± 645.5	2873.5 ± 589.1	NS	0.05	
	DQ	87.5 ± 16.7	70.4 ± 16.6	≤.001	0.40	
	Degree of attachment formation	3.9 ± 1.3	3.3 ± 1.1	NS	0.23	
	Attachment disorganization	3.1 ± 2.6	5.4 ± 1.4	≤.001	0.47	
	Caregiving quality composite	2.6 ± 0.5	2.3 ± 0.5	≤.01	0.34	
	54	IQ	93.1 ± 23.7	69.8 ± 14.1	≤.01	0.61
	Duration of deprivation (percentage of life in institution)	22.6 ± 27.0	62.2 ± 31.6	≤.001	0.63	
EIG only						
Baseline	Indiscriminate behaviors	3.2 ± 1.9	3.2 ± 1.9	NS	0.01	
	Duration of deprivation (percentage of life in institution)	85.8 ± 21.7	82.0 ± 24.8	NS	0.08	
	Caregiving quality	2.0 ± 0.7	2.0 ± 0.6	NS	0.05	
	Birth weight, g	2668 ± 612	2818 ± 562	NS	0.12	
	DQ	77.5 ± 12.4	70.0 ± 16.9	≤.06	0.24	
	Degree of attachment formation	2.9 ± 1.2	3.2 ± 1.0	NS	0.12	
	Attachment disorganization	3.1 ± 2.5	5.5 ± 1.7	≤.01	0.51	
	Caregiving quality composite	2.5 ± 0.5	2.2 ± 0.5	≤.05	0.30	
	30–42 mo	54	IQ	80.0 ± 17.1	71.0 ± 13.5	NS
	Duration of deprivation (percentage of life in institution)	40.1 ± 24.3	65.7 ± 28.6	≤.001	0.42	
FCG only						
Baseline	Indiscriminate behaviors	3.3 ± 2.1	3.4 ± 1.6	NS	0.03	
	Caregiving quality	2.3 ± 0.6	2.2 ± 0.4	NS	0.10	
	Duration deprivation	85.5 ± 24.1	83.4 ± 23.6	NS	0.04	
	Birth weight, g	2440.0 ± 588.3	2775.0 ± 293.0	NS	0.34	
	DQ	79.6 ± 12.5	80.0 ± 14.1	NS	0.02	
	Degree of attachment formation	2.9 ± 1.3	3.5 ± 1.0	NS	0.25	
	Attachment disorganization	3.0 ± 3.0	5.8 ± 1.5	≤.05	0.51	
	Caregiving quality composite	2.7 ± 0.5	2.5 ± 0.3	NS	0.24	
	30–42 mo	54	IQ	86.5 ± 16.0	80.4 ± 14.6	NS
	Duration of deprivation (percentage of life in institution)	25.5 ± 10.8	35.5 ± 15.6	NS	0.35	
CAUG						
Baseline	Indiscriminate behaviors	3.1 ± 1.7	3.0 ± 2.0	NS	0.04	
	Caregiving quality	1.8 ± 0.5	1.8 ± 0.7	NS	0	
	Duration deprivation	86.2 ± 19.5	81.1 ± 22.8	NS	0.12	
	Birth weight, g	2923.5 ± 547.2	2845.0 ± 574.2	NS	0.07	
	DQ	75.1 ± 12.3	64.0 ± 16.0	≤.06	0.36	
	Degree of attachment formation	2.9 ± 1.1	2.9 ± 0.9	NS	0	
	Attachment disorganization	3.1 ± 3.0	5.1 ± 2.0	NS	0.36	
	Caregiving quality composite	2.3 ± 0.4	2.1 ± 0.5	NS	0.21	
	30–42 mo	54	IQ	71.2 ± 15.5	63.8 ± 6.9	NS
	Duration of deprivation (percentage of life in institution)	57.5 ± 24.4	85.0 ± 13.8	≤.05	0.60	

(Fig 2). In children with high levels of disorganization (median split at 5), there was no association between composite caregiving quality and StrD behaviors. However, in children with low levels of disorganization, leaving was associated with lower levels of caregiving quality.

DISCUSSION

This study significantly advances our understanding of indiscriminate so-

cial behavior in children with a history of institutional deprivation by using a naturalistic, observational measure of indiscriminate behaviors in young children and a longitudinal design to examine early and cumulative risk factors.

First, as expected, we demonstrated a low rate of indiscriminate social behaviors in children without a history of institutional deprivation compared with those with a history of institutional deprivation. Second, children

in foster care left with a stranger at one-half the rate of children in care as usual, although this difference was not statistically significant. This lack of a robust intervention effect is consistent with studies that demonstrate persistence of indiscriminate behavior over time despite placement in adequate caregiving situations.^{3,10} Novel interventions are needed to accelerate recovery from deprivation-related indiscriminate social behaviors.

TABLE 3 Binary Logistic Regression Analyses: Predicting Indiscriminate Social Behavior in StrD Procedure

Variable	B	SE	Wald	sig	Exp(B)	95% CI
EIG + NIG (model Nagelkerke <i>R</i> = 0.48)						
Disorganization	0.50	0.20	6.5	0.01	1.6	1.1–2.4
DQ baseline	–0.06	0.03	3.9	0.05	0.94	0.89–1.0
Caregiving composite (30 and 42 mo)	–2.5	1.4	4.1	0.04	0.08	0.007–0.90
Ever-institutionalized children only (model Nagelkerke <i>R</i> = 0.41)						
Disorganization	0.50	0.20	5.6	0.02	1.6	1.1–2.5
Caregiving composite	–2.6	1.4	3.6	0.06	0.07	0.01–1.1
Percent time in institution 54 mo	–0.000	0.002	0.000	0.90	1.0	0.96–1.1

The study design allowed detailed examination of the role of caregiving in young children with a history of institutional care and subsequent indiscriminate social behaviors. Including children from all groups, early attachment disorganization, lower DQ, and lower quality cumulative caregiving after randomization all contributed independently to indiscriminate social behaviors at 54 months.

In the EIG only, which included all but 1 of the children who left in the StrD procedure, neither caregiving quality at baseline nor the percent time in institution at baseline was associated with leaving in the StrD procedure at 54

months. This striking finding suggests that, although institutional deprivation is associated with the development of indiscriminate behaviors, the variations in institutional care quality or duration in the first 17 months of life were not, in and of themselves, determining factors in later indiscriminate behaviors. The univariate associations between StrD behaviors and both caregiving quality after baseline and 54-month percent time in institution are consistent with other reports that lower rates of indiscriminate social behaviors are associated with caregiving sensitivity and briefer institutional care.^{4,12} The lack

of significant contribution of these variables in the regression model, however, is consistent with the reports that these patterns persist over time, even in high-quality caregiving settings.³

Birth weight was not associated with indiscriminate behaviors in StrD; this finding suggests that the prenatal environment, at least as reflected in prenatal growth, is not a driving force in later indiscriminate behaviors. Extant reports about the association between prenatal risk and later indiscriminate behaviors are inconsistent,^{4,29} and measurement of prenatal risk is fraught with challenges in children with an institutional history.³⁰ To date, there is limited evidence indicating an important role for prenatal factors in the genesis of indiscriminate behaviors.

Baseline DQ contributed significantly but modestly to the variance of StrD in the whole sample but not in the EIG. This finding similarly highlights that although IQ and indiscriminate behaviors both develop in institutional deprivation, they seem to be distinct constructs and probably derive from

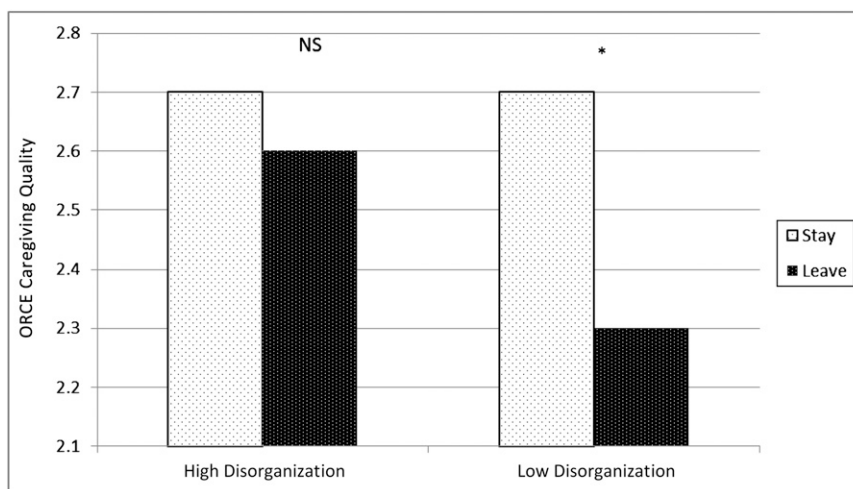


FIGURE 2 Caregiving quality according to disorganized status and StrD behaviors. * *P* < .02.

distinct mechanisms. Importantly, the lack of association with IQ at 54 months is consistent with other published findings⁴ and indicates that indiscriminate social behaviors are not solely signs of immature cognitive development.

This study provides valuable novel information about the relative contribution of caregiving and attachment to observed indiscriminate social behaviors at 54 months. In both the entire sample and the EIG, the consistent predictor of 54-month indiscriminate behaviors was disorganized attachment behaviors. Disorganized attachment behaviors represent a lack of a coherent strategy to use the caregiver in times of distress and are associated with many forms of caregiving adversity.^{31,32} Disorganized behaviors can include contradictory behaviors, misdirected comfort-seeking behaviors (eg, toward a stranger rather than familiar caregiver), or stereotypes during the reunion with the caregiver.²⁸ Disorganized attachment is more likely to develop with emotionally disrupted caregiver communication or frightening/frightened caregiver behaviors.^{31,33} Institutional caregiving is associated with higher rates of disorganized attachment but is not sufficient for the development of disorganized behaviors, as one-third of children with a history of institutional care showed no evidence of disorganized attachment.^{27,34,35} Individual child factors, including psychological or biological factors such as genetic polymorphisms and/or

neurobiological development, also may contribute independently or through interaction with the environment to increase vulnerability to attachment disorganization.^{36–39} In our study, among children with lower levels of disorganization, higher caregiving quality was associated with staying in the StrD, but among those with high levels of disorganization, there was no such association. It is possible that a child's capacity to develop organized attachment behaviors with a preferred caregiver in an institution is a marker of a capacity that also allows a child to develop more discriminating social behaviors later or that the early organized attachment relationship itself confers protection and a buffer against other caregiving risks.

The present study has some limitations. First, the sample was small. The procedure was added to BEIP after a number of 54-month assessments already had been completed, and not all children were developmentally old enough to participate in the baseline Strange Situation procedure. The fact that disorganized attachment explained so much variance in this small sample highlights the power of this finding. Second, because of the limitations of recordkeeping related to prenatal and early experiences of institutionalized children, we have a limited ability to examine the specific factors in the prerandomization lives of children in the BEIP that may influence baseline attachment organization,

which seems to play an important role in predicting later indiscriminate social behaviors.

CONCLUSIONS

This new measure offers the field a valid measure of indiscriminate social behavior in preschool-aged children, and our findings offer important contributions to our understanding of indiscriminate social behaviors in young children. These findings suggest that in institutional care, the development of early disorganized attachment is a powerful predictor of later indiscriminate behaviors. There is some suggestion that more organized attachment behaviors in an institution may herald an ability to develop discriminated social behaviors when exposed to a higher quality caregiving environment, but the limited contribution of caregiving quality over and above attachment organization is of concern. Clearly, removal from deprivation and placement in high-quality caregiving is clinically indicated, but our findings also highlight the need to develop highly effective interventions to mitigate their early risk. Future studies should examine the biological, psychological, and environmental factors that mitigate the adverse outcome of indiscriminate social behaviors.

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