Behavior Problems, Academic Skill Delays and School Failure Among School-Aged Children in Foster Care: Their Relationship to Placement Characteristics

Bonnie T. Zima, M.D., M.P.H., et al.

SUMMARY:

1. **Introduction:** Behavior problems, academic skill delays, and school failure are common among school-aged children in foster care. These challenges often arise from early life experiences such as abuse, neglect, and other stressors. Understanding how these issues connect to placement characteristics can help improve outcomes.

2. **Linking Behavior and Academic Problems:** Many children in foster care struggle with both behavior and academics. Difficulties in one area often affect the other, creating a cycle that can be hard to break. For example, children who face behavioral challenges may have trouble keeping up in school, while academic struggles can lead to frustration and acting out. These patterns demonstrate the need for comprehensive support.

3. **Implications for Child Welfare Leadership:** Placement characteristics, such as the type of foster care or group home settings, influence outcomes. However, other factors, like the number of moves or time in care, don't always show a clear connection to behavior or academics. This suggests a need to look beyond placements to better understand what children need.

4. **Factors Influencing Outcomes:** While placement type and stability may play a role, it's important to consider other influences, such as a child's background and experiences. A more complete understanding can help identify the best ways to support children in care.

5. **Need for Trauma-Sensitive Approaches:** Schools, child welfare agencies, and mental health programs must work together to adopt trauma-sensitive practices. Tailored approaches can help children in foster care overcome challenges and build a stronger foundation for success.

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The study focuses on the prevalence of behavior problems, academic skill delays, and school failure among children in foster care.
It explores the relationship between behavior problems and academic issues, as well as the impact of placement characteristics on these outcomes.

The research methodology involved sampling children aged 6 to 12 years from out-of-home placements in Los Angeles County.

Sociodemographic characteristics of the children in foster care are highlighted, along with their school attendance and history.

Predictors of behavior problems and academic skill delays are identified, shedding light on the factors influencing children's experiences in foster care and school.

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We describe the level of behavior problems, academic skill delays, and school failure among school-aged children in foster care. We also examine how behavior problems are associated with academic problems, and explore how these outcomes are related to children's placement characteristics. Foster parent and child home interviews, as well as teacher telephone interviews were conducted from a randomly selected sample of 302 children aged 6 through 12 years living in out-of-home placement. Interviews included standardized screening measures. Results showed that 27% of the children scored in the clinical range for a behavior problem, and 34% were rated as having at least one behavior problem in the classroom. Twenty-three percent of the children had severe delays in reading or math, 13% had repeated a grade, and 14% had a history of school suspension and/or expulsion. Behavior problems by foster parent report were related to child suspension

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and/or expulsion from school, but were not associated with severe academic delays or grade retention. Placement characteristics were only sometimes related to these outcomes. Future studies examining the mental health and educational needs of this population should take into account the child's sociodemographic and placement characteristics.

KEY WORDS: foster care; behavior problems; academic delays; school failure; children.

A disproportionate number of children living in out-of-home placements manifest signs of behavior problems (Dubowitz, Zuravin, Starr, Feigelman & Harrington, 1993; Clausen, Landsverk, Madsen, Ganger, Chadwick, & Litrownik, 1998), poor academic achievement (Colton, Heath, & Aldgate, 1995; Stein, 1997), and school failure (Brooks & Barth; 1998). This high level of problems may be understandable, as children living in foster care frequently have histories of exposure to severe psychosocial stressors, such as abuse and neglect; extreme poverty; homelessness; and parental substance abuse (Rosenfeld et al., 1997). Nevertheless, when examining behavior and academic problems in this child population, it is important to assess the potential associations between them and how they are related to placement characteristics; such relationships imply the potential for service use across multiple sectors of care in the community. To more effectively plan mental health and special education services for children in foster care, information on how placement characteristics differentiate those children with greater levels of mental health and academic problems would be useful to the decision-making process. Further, the need for such information has intensified because mental health services in the public sector are increasingly being reorganized under managed care (Managed Care Behavioral Healthcare Update, 1998), and the proportion of children entering foster care with behavior and academic problems is anticipated to rise (Rosenfeld et al., 1997; Institute for Research on Women and Families, 1998).

Current prevalence estimates of behavior problems among children in foster care range widely, making the first steps in planning services problematic. This variation may reflect differences in the distribution of potentially influential placement history variables, as well as differences in child age and evaluation methods. Using the Child Behavior Checklist as a screening measure (Achenbach & Edlebrock, 1983), the percent of children and/or adolescents living in out-of-home placement reported to have a behavior problem range from 29–80% (Clausen, Landsverk, Ganger, Chadwick & Litrownick, 1998; Thompson & Fuhr, 1992). With the inclusion of preschool children and the use of other screening instruments, 10–80% of youngsters in foster care have been estimated to have severe developmental delays, emotional disturbances and behavior problems (Halfon, Mendonca, & Berkowitz, 1995; Stein et al., 1996). However, children in placement for longer periods of time may be over-represented in these cross-sectional studies. McIntyre and Keesler (1986) conducted one of the few studies that addressed this methodologic limitation and ruled out a relationship between the amount of time

in placement and behavior problems. The prevalence estimates of behavior problems also may be confounded by the amount of time in placement in clinic-based samples, as those who are in foster care longer have a greater likelihood of being referred (Halfon, Mendonca, & Berkowitz, 1995; Hochstadt et al., 1987). Further, when assessing children upon entry into foster care, adjustment reactions may mimic signs of a behavior disorder leading to an overestimate of problems (Chernoff, Combs-Orme, Risley-Curtiss, & Heisler, 1994).

In addition, while preliminary findings from earlier studies suggest that placement characteristics may be related to behavior and academic problems, these studies merit replication. For behavior problems, Benbenishty and Oyseman (1995) found that the length of stay in foster care among Isreali children was a risk factor, yet child symptoms were evaluated by social worker assessment and these findings may not be generalizable to U.S.-based samples. The number of out-of-home placements also has been reported to be moderately correlated with the level of severity of behavior problems (Cooper, Peterson, & Meier; 1987), but behavior problems were assessed by case record review and the sample was limited to children living in one residential treatment facility. Further, few studies have included the teacher's perspective in assessing classroom behavior problems, but most have noted the value of such data (Heath et al., 1989; Stein, 1997).

In assessing educational attainment, Colton et al. (1995) reported that both children in long-term family foster care and those at risk for such placement performed below average in reading, vocabulary and math skills. Among the 49 children in foster care evaluated, potential differences in academic achievement scores by placement status (change in placement, adoption, residential care, reunification) were described but not statistically tested. Studies examining the relationship between the amount of time placement and academic problems are not available. However, Blome's (1997) longitudinal study highlights the significance of addressing the question of such a relationship. Following a cohort of children in foster care over a six-year period (1980–1986), she found that youth in foster care dropped out of high school at a much higher rate and were less likely to complete a graduate equivalency degree than children living with at least one parent.

Further, studies show that the level of behavior and academic problems potentially varies across alternative types of foster care (i.e. kinship, non-kinship family, therapeutic, and group). Interventions such as kinship care and therapeutic foster homes increasingly are being used to better meet the emotional needs of children (Assembly Bill 3015-AB3015 [Children's Mental Health Services Act of 1992]). Yet, whether the level of mental health and school problems differs if the children are cared for by foster parents who are relatives, non-relatives, or who meet therapeutic home licensure requirements has not been established, even though differences in the level of monthly benefit may be substantial (Zima, Bussing, Yang, & Belin, in press). Brook and Barth (1998), for example, recently reported that kinship care status was not related to failing grades and grade retention among children per foster parent report. Though, these findings should be viewed

as preliminary because of the study's 28% mail survey response rate. In addition, cost-saving efforts have included reducing the use of more restrictive levels of placement among children with mental health problems, but the clinical profile of these children (i.e., case-mix) has not been described (Rosenblatt, Attkisson, & Fernandez, 1992).

In this study, we address some of these methodologic limitations and build upon these earlier findings. Our purpose is to describe the level of behavior problems, academic skill delays and school failure among school-aged children living in foster care. We examine how behavior disorders are associated with academic problems, and explore how these outcomes are related to the child's placement history. We hypothesized that children who are in placement longer, have greater placement instability, reside with non-relatives, and live in more restrictive foster care settings are more likely to have behavior problems in the clinical range, severe academic skill delays, a history of repeating a grade, or a history of school suspension or expulsion than those children without such factors.

METHODS

Sampling

Using the Los Angeles County Department of Children and Family Services (DCFS) Management Information System (MIS), children aged 6 through 12 years living in out-of-home placement from three of the eight county service areas between July 1996 and March 1998 were identified. Service areas with the highest rates of out-of-home placements were selected. For each region, the sample was stratified into acute (6 to 12 months) and chronic (>12 months) placement groups, from which equal numbers of children were randomly selected. Children were eligible for the study if they had first lived in an out-of-home placement more than 6 months ago, were between the ages of 6 and 12 years, spoke English or Spanish, lived no more than 15 miles outside Los Angeles County, and had a foster parent who could be reached by telephone or through a neighbor. The child's age and placement status were verified by the DCFS caseworker prior to being entered into the sample. This sampling strategy was repeated at 2-month intervals to better represent children in unstable placements and those who more recently had entered the foster care system.

Procedures

A home interview of the foster parent and child, and a telephone interview of the child's teacher were conducted following informed consent procedures approved by the UCLA Human Subjects Protection Committee and the LA County Department of Mental Health Human Subject Research Committee. During the home interview, a trained lay interviewer administered structured surveys to the

child and his or her foster parent. The child form included standardized measures of reading and math skills. The parent form of the survey included inquiry into child and foster parent sociodemographic characteristics, level of child behavior problems, school history, and confirmation of the name and address of the child's teacher and school. If the child was living in a group home, the child's on-site caseworker or staff person who worked with the child most closely was interviewed. The survey was translated and back-translated into Spanish. Following this interview, the child's teacher was sent a letter explaining the purpose of the study with an attached copy of the foster parent's consent and court order granting permission for the study. A telephone appointment was scheduled during which the teacher was asked to rate the level of the child's behavior problems.

The data collection team was comprised of four trained lay interviewers who had a minimum of 4 years of college education and met County eligibility requirements for an entry level medical case worker. The initial training session lasted 4 days, covering general survey administration, standardized child mental health measures, consent process, and emergency triage procedures. Surveys were proofread twice prior to data entry. Errors were corrected by follow-up home or telephone interview, and lay interviewers were retrained as needed throughout the data collection period.

Participation

From a population of 2103 children between the ages of 6 and 12 years who were living in foster care and were placed from the three county service areas during the 21-month study period, 472 children were randomly selected. Eligibility was verified by the caseworker for 70% of the selected children ($n = 330$). Of the 142 children who were excluded from the final sample, three-fourths ($n = 108$; 76%) were reunited with their biologic family or adopted, and the remaining one-quarter did not meet other eligibility criteria. Among the 330 eligible children and their foster parents, 92% (302/330) completed the home interview. Three-fourths of the refusals (21/28; 75%) were from the foster parents, 18% (5/28) were from the caseworkers, one refusal was from the child's legal advocate, and one child chose not to participate. Of the 302 children who completed the home interview, 89% ($n = 268$) of their teachers were surveyed by telephone. The most common reason for teacher refusal was not remembering the child. Participants and non-participants of the home and telephone surveys did not vary by age, sex, ethnicity, or placement history variables. The average amount of time between the child/foster parent and teacher interviews was 4 months ($SD = 2.3$).

Measures

Sociodemographic characteristics and level of foster parent education was assessed by foster parent report. Placement history and the type of placement

were confirmed using the DCFS Management Information System (MIS). The lifetime amount of time in out-of-home placement and number of placements may be underestimated for children who re-enter foster care because they are assigned and given a new case number. Children were identified as being in kinship foster care if their foster parent identified themselves as the child's relative, such as a grandparent, aunt, or cousin. School history, including lifetime number of school changes, days missed in the past year, repeating a grade, and history of suspension or expulsion, was assessed by foster parent report and was not confirmed by school records because of budget constraints. The number of school changes and days missed from school may be underestimated, especially among those children who had lived with their foster parent for shorter periods of time and/or who had greater placement instability.

Behavior problems over the past six months and level of social competence from the foster parent's perspective were evaluated using the CBCL (Achenbach & Edelbrock, 1983). Items were read aloud to the foster parent. Children with T scores greater than 63 on the total behavior problem scale (>90th percentile) were identified as having symptoms in the clinical range (Achenbach & Edelbrock, 1983). A CBCL score in the upper 10th percentile discriminates untreated children from those receiving services in a child guidance center with a sensitivity of 0.74 and specificity of 0.90 (Achenbach & Edelbrock, 1983). Social competence was assessed in the areas of activities, social relationships and school, with lower T scores corresponding to poorer social competence. Children were identified as having poor social competence if their total T score was in the clinical range (<10th percentile). Although the CBCL is a commonly used screening measure for behavior problems among children in foster care (Clausen et al., 1998), the measure's reliability and validity for this population has not been established.

Classroom behavior problems and social competency were assessed using the Teacher-Child Rating Scale (Hightower, Spinell, & Lotyczewski, 1989), a 38-item teacher report with 3 behavior problem and 4 social competency subdomains. Using a 5-item Likert scale, the teacher was asked to rate 18 behaviorally-oriented school problems (subdomains: acting out, shyness and anxiousness, learning skills) and 20 strengths (subdomains: frustration tolerance, assertive social skills, task orientation, peer social skills). Higher scores on the behavior problem subdomains were indicative of greater behavior problems observed in the classroom. Ratings for strengths were reversed, such that higher scores corresponded to poorer social competency. A child was identified as having a behavior problem in the clinical range if any of his or her behavior problem subdomain scores were at or above the 90th percentile, using the cutpoints normed for age and gender. This measure has been reported to have high reliability (median $r = .91$) and established construct validity, using a large sample elementary school students which included children from urban areas and minority backgrounds (Hightower et al., 1986).

Three reading skills—letter-word identification, word attack and passage comprehension—were assessed using the reading subtest of the Woodcock-Johnson Language Proficiency Battery (WJ) (Woodcock, 1984). Total reading score was normed for age. This measure is one of the few reading tests that has a standardized Spanish version and normative data for Spanish-speaking populations. Bilingual children were tested in both languages and the best score was taken. Math skills were assessed using the revised version of the Wide Range Achievement Test (WRAT) (Jastak & Wikinson, 1984). Although the reliability and validity of this measure is questionable (Reid, 1986), it was chosen because of its comparability with testing conducted in this sample's school district. Surveys of test batteries used by school psychologists have shown that the WRAT ranks as either the first or second most commonly used measure of academic achievement for individual testing in the public schools (Wilson & Reschly, 1996). The psychometric properties of the academic skill measures have not been established for children in foster care. Children were identified as having a severe academic skill delay if they scored at or below the 1st percentile for their age in reading or math.

Data Analysis

Bivariate analyses were conducted using the chi-square test of proportions for discrete variables and analysis of variance (ANOVA) for continuous variables. Correlation between foster parent and teacher report of behavior problems was assessed using a Pearson's correlation coefficient. To examine the independent contribution of placement history characteristics on the likelihood of having a behavior or academic problem, multiple logistic regression analyses using a stepwise procedure with forward selection (entry at $\alpha = .05$) were conducted. The candidate predictor variables were child age, sex, ethnicity (using Latino as the reference group), foster parent education, placement history characteristics (amount of time, number of placements, family kinship care, family non-kinship care, therapeutic foster home, group home), and school history (lifetime number of school changes, school days missed in past year). The outcome variables were: 1) a T score on the CBCL total behavior problems scale in the clinical range ($T > 63$), 2) at or above the 90th percentile of age and gender normed distributions on at least one of the behavior problem subdomains of the T-CRS, 3) a score at or below the 1st percentile of age normed distributions on the WJ or WRAT-R, 4) a history of repeating a grade at least one time, and 5) a history of a suspension or expulsion. Additional models explored how history of repeating a grade and being suspended or expelled from school were related to the presence of a clinical behavior problem on the CBCL, a severe academic skill delay, and the aforementioned sociodemographic, placement history, and school history variables.

Table 1. Sociodemographic Factors, Placement Characteristics, and School History Among School-Aged Children in Foster Care

	M (SD)	N	%
Child (n = 302)[a]			
Age (y)	8.5 (1.78)		
Male		143	47
Ethnicity			
African-American		101	34
Latino		113	38
Caucasian		58	20
Other[b]		23	8
Foster Parent Education (y)	11.6 (3.22)		
Placement			
Time in placement (y)	2.9 (2.64)		
# Placement changes	3.4 (2.25)		
Type			
Kinship family		171	58
Non-kinship family		44	15
Therapeutic		29	10
Group		49	17
School			
Changes/lifetime	1.9 (1.41)		
≥10 days missed/yr		23	9

[a] Missing cases: 7 for ethnicity, 2 for foster parent education, 34 for time and instability in out-of-home placement, 9 for placement type, 58 for school attendance, 16 for repeat grade, 3 for suspension or expulsion, and 16 cases either school failure indice.

[b] Includes biracial (n = 39), Asian-American (n = 3), Pacific-Islander (n = 4), Other (n = 4).

RESULTS

The sociodemographic characteristics and placement and school history variables are described in Table 1. Eighty percent of the children (237/295) were from minority backgrounds. The level of foster parent education ranged from zero to twenty-one years, and 63% of the foster parents (190/300) had completed a high school education. The average amount of time the child had lived with their foster parent was almost 3 years (M = 2.7, SD = 2.94), and 60% (n = 180) had lived with their present caregiver for more than one year. Slightly more than one-quarter of the children (74/268; 28%) had lived in five or more out-of-home placements during their lifetime, and the number of foster home changes ranged from zero to twelve. Sixty-two percent of the children (182/293) were living in kinship care. Of those children who had a foster parent who was a relative, 93% (171/182) were living in family foster care, 5% (9/182) were residing in a therapeutic foster home, and very few (2/182; 1%) were living in a group home.

Most of the children (283/300, 94%) were attending public school, 3% (n = 10) were enrolled in regular classrooms at private schools, and 2% (n = 7) were

in special education programs at their group home. Of those children who had changed schools during their lifetime, slightly more than one-third of the children (61/171; 36%) had attended two or more different schools, and the number of changes ranged from zero to nine. The mean number of days missed from school in the past year was almost five ($M = 4.9$; $SD = 7.97$), but ranged from zero to eighty-three. In the past year, the median number of school days missed was three. Of those children who had repeated at least one grade, 16% (6/38) had been retained more than one time. Of the children who had a history of being suspended from school, more than half (20/36; 55%) had been suspended more than once. Three percent of the children ($n = 10$) had ever been expelled from school.

The level of behavior problems, academic skill delays and indices of school failure are summarized in Table 2. Overall, 69% of the children (193/279) screened positive for a behavior problem, academic skill delay or school failure. Interestingly, a large majority of the children (76/90; 84%) who were observed to have at least one classroom behavior problem were not rated by their foster parent as having a clinical behavior problem. Screening positive on these behavior measures was, in fact, negatively correlated ($r = -.20$). Children who were rated in the clinical range for total behavior problems by their foster parent were less likely ($\chi^2 = 10.93$; $p = .001$) to be identified by their teacher as having at least one behavior problem in the classroom.

The relationships between behavior and academic problems are summarized in Table 3. Children who scored in the clinical range on the CBCL for internalizing, externalizing, and total behavior problems were significantly more likely (internalizing $\chi^2 = 8.52$; $p = .004$; externalizing: $\chi^2 = 15.29$; $p = .001$; total $\chi^2 = 11.32$; $p = .001$) to have been suspended or expelled from school than those children who tested below this cutpoint. Surprisingly, children who were rated in the 90th percentile for acting-out behavior by their teacher were less likely ($\chi^2 = 5.26$; $p = .022$) to have a history of school suspension or expulsion. Behavior problems as identified by the foster parent or by the teacher were not related to delays in reading or math skills, with one exception: behavior problems on the learning subdomain of the TCRS were inversely related to severe academic skill delays ($\chi^2 = 6.57$; $p = .010$). Behavior problems were not related to a history of repeating a grade.

Significant predictors of behavior problems, academic skill delays and school failure are presented in Table 4. Children living in therapeutic foster homes had three times the odds ($OR = 3.2$, 95% $CI = 1.22$, 8.50) of being rated by their foster parent as having a clinical behavior problem than children living in a kinship family foster home. Compared to boys, girls had three times the odds ($OR = 2.98$; 95% $CI = 1.60$, 5.68) of being identified by their teacher as having at least one behavior problem. Caucasian children also were twice as likely ($OR = 2.11$; 95% $CI = 1.01$, 4.39) to be rated as having a classroom behavior problem as those from Latino backgrounds. Additionally, ethnicity was related to academic skill delays. Children from African-American backgrounds had three

Table 2. Child Behavior Problems, Academic Skill Delays and School Failure Among School-Aged Children in Foster Care

	M (SD)[a]	N	%[b]
Behavior Problems			
CBCL (n = 302)			
Narrow band			
Aggressive Behavior	58.1 (11.47)	43	14
Attention Problems	60.6 (11.42)	56	19
Anxious/Depressed	56.0 (8.23)	18	6
Delinquent Behavior	58.2 (9.59)	42	14
Sex problems[c]	54.7 (9.46)	22	8
Social withdrawal	56.7 (8.27)	24	8
Social problems	57.7 (9.50)	33	11
Somatic complaints	54.6 (6.73)	6	2
Thought problems	56.5 (8.62)	16	6
Broad band			
Internalizing	52.7 (11.75)	59	20
Externalizing	54.6 (13.46)	74	25
Total	55.0 (13.26)	82	27
Social competence			
Activities	42.9 (8.49)	16	5
Social	42.0 (8.73)	30	10
School	40.5 (9.06)	45	15
Total[c]	39.9 (8.59)	122	40
T-CRS (n = 268)			
Behavior problem			
Acting-Out	13.9 (7.11)	54	20
Shy/Anxious	11.2 (4.74)	49	18
Learning	15.3 (7.08)	34	13
Any behavior problem		90	34
Competency			
Frustration Tolerance	13.8 (5.09)	7	3
Assertive Social Skills	15.2 (4.96)	12	5
Task Orientation	13.1 (5.60)	6	2
Peer Social Skills	16.6 (5.52)	31	12
Any poor competency		41	15
Academic Skill Delays (n = 302)			
WJ			
Reading skill delay	89.2 (19.34)	43	14
WRAT-R			
Math skill delay	85.3 (15.85)	37	12
Either		70	23
School Failure (n = 302)			
Repeat at least one grade		38	13
At least one suspension or expulsion		41	14
Either		72	25

Note. CBCL = Child Behavior Checklist (Achenbach & Edlebrock, 1983), TCRS = Teacher-Child Rating Scale (Hightower et al., 1986); WJ = Woodcock Johnson Language Profiency Battery (Woodcock, 1984); WRAT-R = Wide Range Achievement Test-Revised (Jastak & Wilkinson, 1984).

[a] T scores for CBCL and T-CRS, standard scores nomed for age for WJ, and WRAT.

[b] Proportion in clinical range: for CBCL: narrow band $T > 70$, broad band $T > 63$, total $>90^{th}$ %ile, social competence $T < 30$, total social competence $\leq 10^{th}$ %ile; for T-CRS: $>90^{th}$ %ile; for WJ and WRAT: $\leq 1^{st}$ percentile.

[c] 10 missing cases.

Table 3. Relationship Between Behavior Problems and Severe Academic Skill Delays and Indices of School Failure

	Severe Academic Skill Delay[a] (%) (n = 70)	Repeat at Least One Grade (%) (n = 38)	History of Suspension or Expulsion (%) (n = 41)
Behavior Problem[b]			
CBCL[c]			
Internalizing			
Yes (n = 59)	20	9	25**
No (n = 241)	24	14	11
Externalizing			
Yes (n = 74)	26	14	27***
No (n = 226)	23	13	9
Total			
Yes (n = 82)	23	16	25***
No (n = 218)	23	12	10
TCRS[d]			
Acting-Out			
Yes (n = 54)	19	12	4*
No (n = 213)	24	14	16
Shy/Anxious			
Yes (n = 49)	16	14	8
No (n = 218)	25	13	14
Learning			
Yes (n = 34)	6**	9	12
No (n = 233)	26	14	13
Any behavior problem			
Yes (n = 90)	18	13	9
No (n = 177)	26	14	15

[a] WJ or WRAT score normed for age $\leq 1^{st}$ percentile.
[b] Proportion in clinical range for CBCL: T > 63, total $>90^{th}$ %ile; for T-CRS: $>90^{th}$ %ile.
[c] Missing cases: 2 for severe academic skill delay, 17 for repeat at least one grade, 3 for suspension/expulsion.
[d] 36 missing cases.
* $p \leq .05$; ** $p \leq .01$; *** $p \leq .001$.

times the odds (OR = 3.26, 95% CI = 1.57, 6.87) of having a delay in reading or math skills compared to Latino children. Placement instability was significantly related to academic skill delays, with a single additional placement change corresponding to an odds ratio of 1.18 (CI = 1.01, 1.36).

For the indices of school failure, children living in group homes had three times the odds (OR = 3.04; 95% CI = 1.20, 7.35) of repeating at least one grade than children living with a relative in family foster care. Age was significantly related to a history of suspension or expulsion from school, such that a one-year change corresponded to an odds ratio of 1.52 (95% CI = 1.19, 1.97). Compared to girls, boys had almost seven times the odds (OR = 6.71; 95% CI = 2.53, 21.49) of being suspended or expelled from school. Children who were living in foster care for longer periods of time also were significantly more likely to have been

Table 4. Predictors of Behavior Problems, Academic Skill Delays and School Failure Among School-Aged Children in Foster Care

	Significant Predictors	β	OR	95% CI
Behavior Problem[a]				
CBCL Total T > 63	Therapeutic foster care*	1.16	3.20	1.22, 8.50
TCRS ≥1 Problem	Female***	1.09	2.98	1.60, 5.68
	Caucasian*	0.74	2.11	1.01, 4.39
Academic Skills Delay[a]	African-American**	1.18	3.26	1.57, 6.87
	# Foster homes lived*	0.16	1.18	1.01, 1.36
Repeat at least one grade[a,b]	Group home***	1.11	3.04	1.20, 7.35
History of suspension or expulsion[a]	Age***	0.42	1.53	1.21, 1.97
	Male***	1.88	6.54	2.51, 20.61
	Amount of time in placement*	0.15	1.17	1.01, 1.34
History of suspension or expulsion[b]	Age***	0.42	1.52	1.19, 1.97
	Male***	1.90	6.71	2.53, 21.49
	Amount of time in placement*	0.16	1.18	1.02, 1.37
	CBCL Total T > 63**	1.22	3.37	1.41, 8.25

Note. Statistics derived from stepwise multiple logistic regression analyses using a forward selection procedure ($\alpha = .05$).

[a]The predictor variables were sociodemographic characteristics (child age, gender, ethnicity [using Latino as the reference group], foster parent education), placement history (amount of time, number of foster homes, placement type [non-kinship family, therapeutic, group home using kinship family foster home as reference group], and school history (changes/lifetime, < or ≥10 days missed/year).

[b]The predictor variables also included CBCL T > 63 on total behavior problems scale and reading or math skills ≤1st percentile for age. β = parameter estimate, OR = odds ratio, CI = confidence interval.

* $p \leq .05$; ** $p \leq .01$; *** $p \leq .001$.

suspended or expelled from school, with an additional year in placement corresponding to an odds ratio of 1.18 (95% CI = 1.02, 1.37). Further, children who screened positive for a clinical behavior problem on the CBCL had three times the odds (OR = 3.37; 95% CI = 1.41, 8.25) of ever being suspended or expelled from school.

When the level of significance criterion was raised to ($\alpha = .01$) in the multiple logistic regression models, being male emerged as an additional significant predictor (OR = 3.81, CI = 1.00, 4.76) of having an academic skills delay. Changes in significant predictor variables for behavior problems and school failure indices were not found.

DISCUSSION

Many of the school-aged children in foster care in this study (69%) screened positive for a behavior problem, academic skill delay or school failure. Yet the hypothesized placement characteristics only sometimes were related to these outcomes. Children living in therapeutic foster care or group home settings were respectively more likely to be identified by their foster parent as having a behavior

disorder or repeating a grade. The amount of time in out-of-home placement and the level of placement instability however were not related to behavior or academic problems, with two exceptions. Children who were in foster care for longer periods of time were more likely to have been suspended or expelled from school. Also, the number of changes in foster homes was associated with having at least one severe academic skill delay. Although the absence of a relationship between the amount of time in foster care and level of placement instability with behavior problems is inconsistent with earlier studies (Benbenishty & Oyseman, 1995; Cooper et al., 1987), such discrepancy may be attributable to differences in assessment methods. Further, these preliminary findings raise questions about how sociodemographic characteristics may relate to classroom behavior problems, academic skill delays and suspension or expulsion from school. Additional studies examining potential sources of bias also are warranted.

The level of behavior problems among the children studied was comparable or potentially higher than that reported among a sample of youth living in non-kinship family foster care from a similar geographic area. Compared to a San Diego County-based sample of 70 youth in foster care, children in this study had similar CBCL broad band and total behavior problems mean scores but higher social competence mean scores (Clausen et al., 1998). The level of problems among children in this study may be greater than those in the San Diego County group because younger children and those living in therapeutic and group homes were included. Although testing potential differences with other foster care studies using the CBCL were not possible because mean scores were not presented (Dubowitz et al., 1993; Thompson & Fuhr, 1992), comparison with another high-risk child sample was explored. Interestingly, the proportion of children in foster care who screened positive for a clinical behavior problem on the CBCL was similar to that found in a county-wide sample of 169 school-aged homeless children in Los Angeles County (Zima, Wells, & Freeman, 1994).

The findings on the level of behavior problems in the classroom should be viewed as preliminary. The poor agreement between teacher and foster parent reports may be related partially to the use of different measures and different informants, variation in the time of the assessments, the influence of the respondent's emotional status (Briggs-Gowan, Carter, & Schwab-Stone, 1996), or true differences in child behavior across settings. Low rates of cross-informant agreement however are a common methodological challenge in child mental health research. Kinard (1995), for example, found only low to moderate correlation between teacher and mother report of behavior problems using the CBCL in a sample of abused and non-abused elementary school students. Studies addressing cross-informant screening for behavior problems in other surveys have reached similar conclusions (e.g., Boyle, Offord, Racine, Szatmari, Fleming, & Sanford, 1996). However, sociodemographic predictors of teacher behavior problem ratings were inconsistent with some earlier studies. For example, boys and minority children

were more likely to be identified as having a disruptive behavior problem in the classroom (Bussing, Zima, Perwien, Belin, & Widawski, 1998; Epstein, March, Conners, & Jackson, 1998), and only ethnicity (not gender) effects were found in multivariate analyses predicting teacher behavior problem reporting by Horwitz, Bility, Plichta, Leaf, and Haynes (1998).

Severe academic skill delays were disproportionately high among the children in foster care studied. Such findings are consistent with earlier research (Brooks & Barth, 1998; Colton et al., 1995; Stein, 1997). Comparison of academic skill scores across studies however is not possible because of differences in assessment methods, such as foster parent report of school grades (Brook & Barth, 1998) and tests used by public agencies outside the U.S. (Heath et al., 1989; Stein, 1997). The relationship between ethnicity and having a severe academic delay also should be interpreted cautiously, because cultural bias in the assessment methods cannot be ruled out. Further, the child's likelihood of having a severe academic skill delay was not influenced by screening positive for a clinical behavior problem in this study, a finding consistent with that noted among a smaller sample of children in long-term foster care in the U.K. (Colton et al., 1995). In reviewing other community-based child studies, Kavale and Forness (1998) also note that the relationship between learning and behavior problems may not be as strong as commonly expected clinically.

Findings from our study suggest that children living in more restrictive levels of foster care are more likely to have a behavior problem per foster parent report and repeating a grade. Although such relationships seem almost intuitive, conclusions about the level of appropriateness of such placement and direction of these relationships cannot be made from this study's design. Also, the potential for reporting bias cannot be ruled out. Foster parents who are licensed to provide therapeutic foster care receive additional training and funding to care for a child with an emotional or behavior disorder. Such factors may increase their awareness of a mental health problem. Approval for group home admission also requires greater documentation of severe psychosocial problems, increasing the likelihood of reporting higher retention rates. Nevertheless, the high level of school failure is especially disturbing because children in this study were relatively young. The greater odds of school suspension or expulsion with increasing age, for boys, those in placement longer, and those with clinical behavior problems potentially reflect the beginning of an unfortunate developmental trajectory (Achenbach, Howell, McConaughy, & Stanger, 1998).

Several limitations should be considered in the interpretation of our study's findings. Data are from children in foster care living in a major metropolitan area and thus may not generalize to other foster care child populations. Because the levels of behavior and academic problems are based upon screening measures and are limited to foster parent report, they should not be used as prevalence estimates of disruptive behavior or learning disorders. Given its cross-sectional design, conclusions about the consequences of having such problems also cannot be made.

Nevertheless, the proportion of school-aged children in foster care studied with behavior problems, severe academic delays and school failure was alarmingly high. Child protective agencies, community mental health programs, and schools serving children in foster care would do well to examine the nature of these placement characteristics in planning their services for this vulnerable population.

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Functional Patterns of Adolescent Mothers Leaving Foster Care: Their Relationship to Placement Characteristics

Svetlana Shpiegel

SUMMARY:

1. The study identified distinct clusters of functioning at age 19, including ***resilient, disconnection, homelessness, substance abuse plus, and incarceration.***

2. Resilient adolescent mothers exhibited lower risk and higher protection levels at age 17, with characteristics like prior employment experience and stable family-based placements.

3. Challenges faced by adolescent mothers leaving foster care included difficulties in education, employment, and housing, impacting their transition to adulthood.

4. Predictors of behavior problems and academic skill delays are identified, shedding light on the factors influencing children's experiences in foster care and school.

5. The study emphasized the importance of tailored support and interventions to address the unique needs of adolescent mothers leaving foster care for positive outcomes.

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ORIGINAL ARTICLE

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The functional patterns of adolescent mothers leaving foster care: Results from a cluster analysis

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Abstract

Few studies have explored the outcomes of adolescent mothers leaving foster care, especially using person-oriented methods. The current study employed a cluster analysis to identify unique patterns of functioning among adolescent mothers aged 19 (n = 777). Data from the National Youth in Transition Database and the Adoption and Foster Care Analysis and Reporting System were utilized. Findings revealed five subpopulations characterized by distinct constellations of outcomes at age 19. The largest group (43%) exhibited competent functioning across all the domains studied—its members were connected to school and/or employment and did not experience homelessness, substance abuse referrals, or incarceration during the past 2 years (i.e., "resilient"). A relatively small group (12%) exhibited challenges across all the above-referenced domains, whereas the remaining groups presented challenges in some domains, but not in others. Follow-up analyses revealed that adolescent mothers classified as resilient at age 19 had the lowest rates of congregate care placements and the highest rates of nonrelative foster care placements at age 17. Moreover, they had lower placement instability and higher rates of extended foster care as compared with members of the other clusters. Implications for practice, policy, and research are discussed.

KEYWORDS
adolescent mothers, "aging-out", foster care, outcomes

1 | INTRODUCTION

Birth rates among youths in foster care have been the subject of several recent investigations (Combs, Begun, Rinehart, & Taussig, 2017; Font, Cancian & Berger, 2018; King, 2017; Shpiegel & Cascardi, 2018). Although specific estimates have varied across samples, most existing studies indicate that females with foster care backgrounds exhibit birth rates two to three times higher than their counterparts in the general population (Eastman, Palmer, & Ahn, 2019; Font et al., 2018; Svoboda, Shaw, Barth, & Bright, 2012). For instance, King (2017) has found that about 20% of female foster youth in California had given birth during their teenage years. Font et al. (2018) similarly reported that approximately 23% of females in Wisconsin had given birth by age 18. Finally, Shpiegel, Cascardi and Dineen (2017) have shown that nearly 20% of female foster youth in a large national sample had given birth by age 19. These and other studies also indicate that the risk of childbirth increases during late adolescence and the period of transition to adulthood, as youths emancipate from the child welfare system and begin living independently (Putnam-Hornstein, Hammond, Eastman, McCroskey, & Webster, 2016; Shpiegel & Cascardi, 2018).

Numerous studies have shown that adolescent childbirth is linked to adverse outcomes for mothers, including educational underachievement, employment difficulties, and decreased economic self-sufficiency (e.g., Barnet, Liu, & DeVoe, 2008; Boden, Fergusson, and

Horwood, 2008; Furstenberg, 2016). Yet few studies have explored the outcomes of adolescent mothers with current or past foster care involvement (Eastman & Putnam-Hornstein, 2019; Eastman, Schelbe, & McCroskey, 2019; Font et al., 2018; Combs et al., 2017; Shpiegel & Cascardi, 2018; Schelbe & Geiger, 2017). The limited research on this topic has produced inconsistent findings, with some studies describing heightened challenges among young women who have given birth (e.g., Combs et al., 2017; Shpiegel & Cascardi, 2018) whereas others depicting motherhood as more nuanced, including both challenges and a renewed sense of purpose and motivation (e.g., Pryce & Samuels, 2010; Schelbe & Geiger, 2017). Overall, more research is needed on the outcomes of adolescent mothers leaving foster care, including their educational and vocational attainment, housing stability, and engagement in risky behaviours. Research is also needed on the factors that relate to better or worse outcomes across multiple domains, especially as they start living independently. The present study employs a person-oriented method to identify unique patterns of functioning among adolescent mothers leaving foster care and explores both individual and system-related factors that may relate to differences in outcomes during the period of transition to adulthood.

1.1 | Outcomes of adolescent others involved with foster care

Research on transition-age foster youth indicates that they are vulnerable to a myriad of unfavourable outcomes, including educational and vocational problems, homelessness, substance abuse, and criminal justice involvement (Courtney et al., 2018; Narendorf & McMillen, 2010; Naccarato, Brophy, & Courtney, 2010; Stott & Gustavsson, 2010). These difficulties may be especially pronounced among those youth who parent children, given the confluence of negative outcomes associated with both early parenthood and "aging-out" of foster care (Shpiegel & Cascardi, 2018; Combs et al., 2017). The pressures of caring for young children, coupled with a lack of adequate skills, resources, and supports, are among the challenges faced by young mothers as they approach and negotiate the transition to independent adulthood (Aparicio, Pecukonis, & O'Naele, 2015; Shpiegel & Cascardi, 2018).

According to recent studies, adolescent mothers leaving foster care often struggle to finish school, obtain employment, and establish economic self-sufficiency (Chase, Maxwell, Knight, & Aggleton, 2006; Combs et al., 2017; Haight, Finet, Bamba, & Helton, 2009; Shpiegel & Cascardi, 2018). For instance, in a study by Combs and colleagues (2017), foster youth ages 18 to 22 with biological children were less likely to obtain a high school diploma and to be employed, less likely to have a checking or savings account, and more likely to experience homelessness as compared with counterparts without children. A study by Shpiegel and Cascardi (2018) reported similar findings in a national sample of foster youth, including lower educational and vocational attainment, and higher rates of homelessness, incarceration, and receipt of public assistance among females who had children.

Qualitative research painted a more nuanced picture regarding the functioning of adolescent mothers aging-out of foster care. For example, Schelbe and Geiger (2017) reported that both mothers and fathers emancipating from foster care have found satisfaction in parenthood and strived to be good parents despite having limited resources and little support. Their desire for a better life for their children, as well as the worry that they may enter foster care, was reportedly a motivating factor for these youth to improve their functioning. Similar findings were reported in other qualitative studies, which described parenthood as a reason for increased engagement in productive activities (e.g., education and employment) and disengagement from risky behaviours (e.g., Pryce & Samuels, 2010). Quantitative research by Courtney and colleagues (Courtney, Dworsky, Lee, & Raap, 2009; Courtney et al., 2018) provided additional support for these findings, indicating that most foster youth did not experience parenting as a source of significant stress; though they did acknowledge that it was harder than anticipated.

1.2 | Importance of person-oriented research

To date, most studies on adolescent mothers in foster care have either been qualitative in nature or have used variable-centred approaches to examine how childbirth may relate to certain outcomes, such as education or employment (Combs et al., 2017; Pryce & Samuels, 2010; Schelbe & Geiger, 2017; Shpiegel & Cascardi, 2018). Although variable-centred approaches are useful for identifying the correlates of individual outcomes, they do not capture the multidimensional nature of youths' adaptation (Keller, Cusick, & Courtney, 2007; Yates & Grey, 2012). An alternative to the variable-centred approach is the person-centred framework, which assumes that specific outcomes must be examined together with other related outcomes (Courtney, Hook, & Lee, 2012). The person-centred framework aims to detect distinct subgroups in a given population, sharing similar characteristics across multiple domains (Shpiegel & Ocasio, 2015). Applying a person-centred framework to adolescent mothers who have experienced foster care may help identify important variations in adjustment during the period of transition to adulthood and pinpoint the factors that may contribute to such variations.

Several investigations applied a person-centred framework to youths involved with foster care (Courtney et al., 2012; Keller et al., 2007; Miller, Paschall, & Azar, 2017; Shpiegel & Ocasio, 2015; Yates & Grey, 2012), though only a few focused specifically on adolescent mothers (Eastman & Putnam-Hornstein, 2019; Eastman et al., 2019). As expected, existing studies revealed substantial variability in youths' adjustment, ranging from seemingly resilient functioning to marked impairments across multiple domains (e.g., Eastman & Putnam-Hornstein, 2019; Courtney et al., 2012; Miller et al., 2017; Yates & Grey, 2012). For instance, Courtney et al. (2012) used a latent class analysis to identify subgroups of foster youth ages 23–24, based on indicators such as education and employment, parenthood status, living arrangements, and criminal involvement. Results revealed four subgroups, including "struggling parents" (about 25%), who were predominantly female. Members of this group were most likely not to finish high school and least likely to attend college. Additionally, they had lower rates of employment and higher rates of need-based public

assistance than the other groups. In a similar study by Shpiegel and Ocasio (2015), cluster analysis was used to identify subgroups of foster youth aged 17. Findings revealed five subgroups, including a "multiproblem" group (15%), whose members were likely to have children and to exhibit decreased school enrolment and histories of homelessness, substance abuse referrals, and incarceration.

Two recent studies used person-centred methods to focus specifically on young mothers with foster care backgrounds (Eastman & Putnam-Hornstein, 2019; Eastman et al., 2019). These studies included mothers who were in foster care when they conceived and followed them to determine if there was a maltreatment allegation before their child's third birthday. In the first study, mother–child dyads were classified by maternal characteristics and experiences in foster care into three distinct subgroups using latent class analysis (Eastman & Putnam-Hornstein, 2019). In the second study, intensive case record review was conducted for a sample of mother–child dyads within each class (Eastman, Schelbe, et al., 2019). These studies identified a resilient group of mothers (30%), where the likelihood of a maltreatment report was low, and they were largely stable and doing well. Mothers in the other two classes (46% and 23%) had higher levels of vulnerability, and their young children were at greater risk of a maltreatment allegation. Although these findings focus largely on intergenerational child welfare involvement, they highlight the heterogeneity of young mothers in and aging-out of foster care, as well as the need to move beyond variable-centred approaches to better understand their outcomes.

The factors linked to differences in foster youths' adjustment as they transitioned to adulthood tended to vary across studies; however, several common themes could be detected. In particular, placement in stable, family-based settings, remaining in extended foster care past the age of 18, and having employment experience were generally associated with more adaptive functioning (Eastman & Putnam-Hornstein, 2019; Keller et al., 2007; Miller et al., 2017; Shpiegel & Ocasio, 2015). Conversely, residence in congregate care settings, placement instability, and a history of problem behaviours were often linked to increased functional challenges (Keller et al., 2007; Miller et al., 2017; Shpiegel & Ocasio, 2015).

1.3 | The present study

The goals of the present study were to identify distinct patterns of functioning among adolescent mothers leaving foster care and to explore the factors that may differentiate the observed patterns. Cluster analysis was employed to categorize 19-year-old mothers into various profiles, based on the following indicators: (a) connection to school and/or employment; (b) experiencing homelessness; (c) reporting substance abuse referrals; and (d) having been incarcerated. These indicators were selected based on developmental tasks most relevant to the period of transition to adulthood (i.e., attending school, and being employed), as well as negative outcomes commonly associated with experiencing foster care (i.e., homelessness, substance abuse, and delinquency). Following the identification of the clusters, the obtained subgroups were compared on individual characteristics and child welfare histories at or before age 17.

The specific hypotheses of the present study were as follows:

(1) Consistent with prior research, we expected to identify a subgroup of mothers exhibiting competent functioning across all outcome domains examined at age 19. Moreover, we expected to identify an additional subgroup characterized by consistent maladjustment. Finally, we expected to identify at least one subgroup exhibiting competent functioning in some domains, but not in others.
(2) Mothers exhibiting competent functioning across domains at age 19 were expected to demonstrate lower risk and higher protection across a range of variables examined at age 17. These variables included individual characteristics and functioning (e.g., prior educational and vocational experiences, emotional health, and lifetime histories of risky behaviours), as well experiences in the child welfare system (e.g., placement type and stability and extended foster care status).

2 | METHODS

2.1 | Dataset and procedure

The present study was based on a secondary analysis of data from the National Youth in Transition Database (NYTD). Created by the John H. Chafee Foster Care Independence Program, NYTD was designed to (a) track "services" provided through Chafee Foster Care Independence Program; and (b) collect certain "outcome" measures to assess the effectiveness of the program. All 50 states, the District of Columbia, and Puerto Rico were required to submit information to NYTD during the designated reporting periods (National Data Archive on Child Abuse and Neglect [NDACAN], 2019). The first cohort of NYTD was established in federal fiscal year (FFY) 2011; subsequent cohorts were established every 3 years thereafter.

The current study focused on the outcome component of the second cohort of NYTD, which included information on all youths who reached their 17th birthday and were in foster care during FFY 2014. States were required to collect three phases of outcome data for each youth—a baseline survey during the year in which they turned 17 (i.e., FFY 2014) and two follow-up surveys when they turned 19 and 21 (i.e., FFY 2016 and FFY 2018). The current study included data from the baseline and first follow-up surveys only.[1]

All youths who reached their 17th birthday in FFY 2014 and were in foster care within a 45-day period beginning on their birthday were eligible to complete the outcome survey. Those who at least partially completed the survey during the designated 45-day window were included in FFY 2014 cohort and followed at age 19. The follow-up survey was administrated to the youth during a 6-month reporting period, which included their 19th birthday. States could choose to invite all youth in the FFY 2014 cohort to complete the follow-up survey or to use probabilistic sampling to determine the follow-up

population.[2] The national response rate for the baseline survey at age 17 was 69% (*N* = 16,480). The response rate for the first follow-up survey at age 19 was 72% (*N* = 8,915).[3] For additional information about the NYTD design and procedures, see NDACAN (2019).

To obtain detailed information about youths' child welfare histories, NYTD data were combined with data from the Adoption and Foster Care Analysis and Reporting System (AFCARS) for FFY 2014 (i.e., collected approximately at the same time as the NYTD baseline survey). AFCARS is a federally mandated data collection system that provides information on all children for whom state child welfare agencies have the responsibility for placement and supervision. All states are required to submit information to AFCARS on a semi-annual basis (for additional information, see NDACAN, 2018).

2.2 | Participants

To determine the final sample of adolescent mothers to be included in the present study, the following criteria were used: (a) participation in both baseline and first follow-up NYTD surveys; and (b) reporting childbirth at ages 17 and/or 19. Additionally, females with missing data on any of the indicators used to form the clusters were excluded because the clustering method employed did not permit missing data. The final sample (*n* = 777) included adolescent mothers from 49 states,[4] the District of Columbia, and Puerto Rico. Approximately 35% were non-Hispanic White (*n* = 272), 33% were Black (*n* = 260), 27% were Hispanic (irrespective of race; *n* = 208), and 4% (*n* = 33) were of "other" races (American-Indian/Alaska Native; Asian; Native Hawaiian/Other Pacific Islanders). For four participants, race/ethnicity information was not available.

Approximately 17% of adolescent mothers in the final sample (*n* = 131) reported childbirth by age 17 only; 61% (*n* = 476) reported childbirth between the ages of 17 and 19 only; and 22% (*n* = 170) reported childbirth at both time periods. When foster care status was examined, about 34% (*n* = 265) were still in foster care at age 19, whereas the rest (66%; *n* = 512) had exited foster care by the time of the age 19 interview.

2.3 | Measures

Three sets of variables were included in the analysis: (a) outcome indicators at age 19 used to form the clusters; (b) individual characteristics and functioning at or before age 17; and (c) child welfare histories at or before age 17. Information about outcome indicators and individual characteristics and functioning was obtained from the NYTD dataset[5]; information about child welfare histories was obtained from AFCARS. Similar to other large, administrative datasets, missing data were present on several AFCARS variables (no more than 5%), modestly reducing the sample size for some analyses.

2.3.1 | Outcome indicators at age 19

As previously noted, four outcome indicators were used to form the clusters; each was coded as (0) absent or (1) present.

Connection to school and/or employment

Participants were considered to be connected to school and/or employment if they reported being enrolled in school and/or employed at age 19. School enrolment was defined as attending high school, general education development classes, post-secondary vocational training, or college at the time of the interview. Employment status was defined as employed full-time (35 hr or more), employed part-time (34 hr or less), or not employed. The rationale for combining these variables into a single indicator is that an absence of one may be appropriate, as long as the other is present (e.g., for those enrolled in school full-time, absence of employment may be appropriate and does not suggest more problematic functioning).

Homelessness

Participants were considered to have experienced homelessness if they had no regular or adequate place to live at any time point during the past 2 years (i.e., between the ages of 17 and 19). The definition of homelessness included living in a car, on the street, or staying in a homeless or other temporary shelter.

Substance abuse referral

This indicator was defined as having been referred for an alcohol or drug abuse assessment or counselling during the past 2 years, including a self-referral or a referral by a social worker, school staff, physician, mental health worker, foster parent, or another adult.

Incarceration

Participants reported if they had been confined in a jail, prison, a correctional facility, or a juvenile or community detention facility during the past 2 years in connection with allegedly committing a felony or a misdemeanour.

2.3.2 | Individual characteristics and functioning at or before age 17

To examine the factors that may relate to variations in adjustment during the period of transition to adulthood, we compared the clusters on prior school enrolment and employment histories at age 17. Additionally, we examined participants' lifetime histories of homelessness, substance abuse referrals, and incarceration recorded at age 17. Lastly, we assessed their emotional health using the AFCARS variable of "emotional disturbance," which included diagnoses such as anxiety disorders, depressive disorders, personality disorders, and conduct disorders (for a detailed definition, see NDACAN, 2018).

2.3.3 | Child welfare histories at or before age 17

To assess cluster differences in child welfare histories, we examined the reasons for participants' removal from their biological families, total number of removal episodes, length of time in foster care since the latest removal, placement type at age 17, and placement instability during the latest removal.

AFCARS includes fifteen possible reasons for a youth's removal from his/her biological family, such as physical and sexual abuse, neglect, parental substance abuse, child's behavioural problems, etc. (see NDACAN, 2018 for a detailed description). Each reason is coded as absent or present, and more than one can be recorded for each youth. For the purpose of this study, a composite score for the total number of removal reasons was computed, with higher scores representing greater risk in youths' original families.

Placement type at age 17 was coded as relative foster home, non-relative foster home, congregate care (group home or institution), and other setting (pre-adoptive home, supervised independent living, trial home visit, and runaway). The last category ("other") was constructed due to low frequencies for the placement settings referenced above (5% or less for each),[6] which did not permit detailed analyses. The number of removal episodes, as well as the number of placements during the latest removal (i.e., placement instability), were measured continuously. The length of time spent in foster care during the latest removal was measured in days.

3 | ANALYTIC STRATEGY

Data analysis was conducted in several steps. First, a two-step cluster analysis was performed to organize the outcomes of adolescent mothers aged 19 into mutually exclusive groups. The two-step cluster method is appropriate for categorical variables and often used with large datasets (Fava et al., 2012; Tsai, Edens, & Rosenheck, 2011). This analytic method involves two stages—first, preclusters are formed from the original cases, and then, the standard hierarchical clustering algorithm is used on the preclusters (Norusis, 2011). The number of clusters was established by the two-step algorithm, the log likelihood distance measure was used to determine cluster membership, and the Bayesian Information Criterion was used to judge the adequacy of the final solution. For additional details about the two-step cluster method, see Norusis (2011).

At the next step, the obtained clusters were compared on race/ethnicity, timing of childbirth, and foster care status at age 19. Following this step, additional bivariate analyses (one-way ANOVA tests and chi-square tests) were conducted to examine cluster differences in mother' individual characteristics and functioning, as well as their child welfare histories at or before age 17. All analyses were performed in SPSS version 25.

4 | RESULTS

4.1 | Cluster analysis

The two-step cluster analysis produced five distinct clusters of functioning at age 19. The Silhouette measure of cluster cohesion and separation was 0.8, indicating a good separation between the clusters (Norusis, 2011). The frequencies of the indicators generating the clusters are presented in Table 1.

The largest cluster (43%, n = 338) was labelled "resilience" and characterized by competent functioning in all domains. Mothers in this cluster were connected to school and/or employment at age 19 and did not experience homelessness, substance abuse referrals, or incarceration during the past 2 years. The second cluster (17%, n = 135) was labelled disconnection—all members of this cluster were disconnected from school and employment at age 19, but none had experienced homelessness, substance abuse referrals, or incarceration. The third cluster (16%, n = 125) was labelled "homelessness," as all the mothers in this cluster reported homelessness during the past 2 years, and some also reported disconnection from school and employment at age 19. The fourth cluster (12%, n = 91) was labelled "substance abuse plus"—all its members reported substance abuse referrals during the past 2 years, and many also reported difficulties in the other domains. Specifically, over 30% were disconnected from school and employment, about 45% reported homelessness, and nearly 50% reported incarceration. The fifth and smallest cluster (11%, n = 88) was labelled "incarceration," as all its members reported having been incarcerated during the past 2 years. Of note, some members also reported homelessness and disconnection from school and employment at age 19.

4.2 | Demographic comparisons

Next, the obtained clusters were compared on race/ethnicity, the timing of childbirth, and foster care status at age 19 (see Table 2). A comparison of race/ethnicity revealed significant differences by cluster (χ^2 = 29.08, p = .004), though the magnitude of these differences was relatively small. Participants in the five clusters did not differ significantly on the timing of giving birth. Nevertheless, the differences in foster care status at age 19 were highly significant (χ^2 = 34.75, p < .001), such that nearly half of "resilient" mothers were still in foster care at age 19, as compared with one-fifth of mothers in the

TABLE 1 Functioning indicators at age 19 by cluster (N = 777)

Variable	Resilience (n = 338)	Disconnection (n = 135)	Homelessness (n = 125)	Substance abuse + (n = 91)	Incarceration (n = 88)
Connected to school/work	100%	0%	63.2%	68.1%	59.1%
Homelessness	0%	0%	100%	46.2%	46.6%
Substance abuse referral	0%	0%	0%	100%	0%
Incarceration	0%	0%	0%	47.3%	100%

Note. The number in the table represents the percentage of cases with the targeted outcome out of all cases in that cluster.

TABLE 2 Individual characteristics and functioning at or before age 17 by cluster

Variables	Resilience (*n* = 338)	Disconnection (*n* = 135)	Homelessness (*n* = 125)	Substance abuse + (*n* = 91)	Incarceration (*n* = 88)	Overall sample (*n* = 777)[a]
Race/ethnicity**						
Non-Hispanic White	**35.8%**	**37.9%**	**28.0%**	**37.8%**	**36.4%**	**35.2%**
Black	**32.0%**	**30.3%**	**45.6%**	**23.3%**	**38.6%**	**33.6%**
Hispanic	**29.9%**	**22.7%**	**23.2%**	**34.4%**	**19.3%**	**26.9%**
Other	**2.4%**	**9.1%**	**3.2%**	**4.4%**	**5.7%**	**4.3%**
Timing of childbirth						
By age 17	21.9%	14.1%	11.2%	12.1%	14.8%	16.9%
Between ages 17–19	56.8%	63.7%	64.0%	67.0%	64.8%	61.3%
Both time periods	21.3%	22.2%	24.8%	20.9%	20.5%	21.9%
In foster care at age 19***	**44.4%**	**28.9%**	**20.0%**	**35.2%**	**21.6%**	**34.1%**
In school at age 17	90.7%	84.3%	93.5%	89.0%	84.1%	88.3%
Employed at age 17**	**19.2%**	**14.2%**	**12.1%**	**12.1%**	**4.7%**	**14.5%**
Emotional disturbance*	**27.9%**	**33.9%**	**31.1%**	**42.7%**	**40.5%**	**31.0%**
LT Homelessness***	**17.0%**	**16.3%**	**24.2%**	**34.1%**	**37.9%**	**22.1%**
LT Substance abuse ref***	**19.3%**	**14.3%**	**19.5%**	**57.1%**	**47.7%**	**25.9%**
LT Incarceration***	**14.2%**	**20.1%**	**26.6%**	**43.3%**	**60.5%**	**25.5%**

Note. Significant results are represent in bold. Presents percentages of each variable by cluster.
Abbreviation: LT, lifetime.
[a]Sample size may decrease slightly due to missing data.
*p < .05, **p < .01, ***p < .001.

incarceration and homelessness clusters and one-third of mothers in the disconnection and substance abuse plus clusters.

4.3 | Comparisons of individual characteristics and functioning at or before age 17

Descriptive bivariate analyses were conducted to examine cluster differences in mothers' individual characteristics and functioning recorded at age 17 (see Table 2). Cluster differences in school enrolment were not statistically significant; though members of the disconnection and incarceration clusters showed a trend towards lower enrolment as compared with members of the other clusters. Moreover, significant differences have emerged in the rates of full-time or part-time employment at age 17 (χ^2 = 13.42, p = .009), with highest rates among members of the resilience cluster and lowest rates among members of the incarceration cluster.

The rates of emotional disturbance at age 17 also differed significantly by cluster (χ^2 = 9.96, p = .04), with lowest rates observed in the resilience cluster and highest rates observed in the substance abuse plus and incarceration clusters. Significant differences have also emerged in prior histories of homelessness, substance abuse referrals, and incarceration (χ^2 = 27.89, p < .001; χ^2 = 86.97, p < .001; and χ^2 = 94.10, p < .001, respectively). In general, members of the resilience and disconnection clusters reported lower rates of each of these difficulties, whereas members of the substance abuse plus and incarceration clusters reported higher rates.

4.4 | Comparisons of child welfare histories at or before age 17

At the final step of the analysis, mothers in the different clusters were compared on child welfare factors recorded at age 17 (see Table 3). Findings revealed that the number of removal episodes, removal reasons, and the average stay in foster care did not differ significantly by cluster. However, significant differences have emerged in placement types at age 17 (χ^2 = 35.41, p < .001), as well as placement instability during the latest removal (F = 7.62, p < .001). Members of the resilience cluster were characterized by lowest rates of congregate care placements and highest rates of nonrelative foster care placements. Conversely, members of the incarceration cluster were characterized by highest rates of congregate care placements and lowest rates of nonrelative foster care placements. The rates of kinship care (i.e., placement with relatives) were highest among members of the substance abuse plus and resilience clusters, whereas the rates of other placements were highest among members of the incarceration and homelessness clusters. Additionally, members of the resilience and disconnection clusters were characterized by lower placement instability (i.e., less placement settings during the last removal episode), whereas members of the incarceration and substance abuse plus clusters were characterized by higher instability.

5 | DISCUSSION

The goal of the current study was to identify unique patterns of functioning among adolescent mothers leaving foster care in the United

TABLE 3 Child welfare histories at or before age 17 by cluster

Variables	Resilience (*n* = 338)	Disconnection (*n* = 135)	Homelessness (*n* = 125)	Substance abuse + (*n* = 91)	Incarceration (*n* = 88)	Overall sample (*n* = 777)[a]
Current placement setting***						
Relative foster home	**16.4%**	**11.1%**	**9.8%**	**17.0%**	**10.7%**	**13.9%**
Nonrelative foster home	**51.2%**	**42.7%**	**41.1%**	**42.4%**	**26.2%**	**44.3%**
Group home/institution	**20.9%**	**33.3%**	**29.5%**	**27.3%**	**41.7%**	**27.4%**
Other setting	**11.5%**	**12.8%**	**19.7%**	**13.6%**	**21.4%**	**14.4%**
Number of removal reasons						
M	1.66	1.75	1.77	1.67	1.65	1.69
(SD)	(.97)	(1.06)	(1.01)	(.93)	(1.09)	(.99)
Number of removal episodes						
M	1.48	1.46	1.46	1.49	1.75	1.51
(SD)	(.79)	(.72)	(.84)	(.97)	(1.18)	(.86)
Number of placement settings***						
M	**4.80**	**5.75**	**7.06**	**7.40**	**8.36**	**6.03**
(SD)	**(4.49)**	**(6.01)**	**(8.11)**	**(8.93)**	**(7.35)**	**(6.52)**
Days spent in foster care						
M	899.81	918.49	1077.17	799.03	1060.99	938.19
(SD)	(781.58)	(1018.49)	(1152.49)	(886.00)	(978.78)	(927.11)

Note. Significant results are represent in bold. Presents percentages of each variable by cluster.
[a]Sample size may decrease slightly due to missing data.
*$p < .05$, **$p < .01$, ***$p < .001$.

States. Findings pointed to five subgroups characterized by distinct constellations of outcomes during the period of transition to adulthood. Further analyses revealed meaningful differences among the subgroups based on mothers' characteristics, experiences, and child welfare histories at or before age 17. Understanding the variability in the outcomes of these young mothers and identifying the factors that may relate to improved functioning as they "age-out" of foster care offers important implications for the design and delivery of interventions.

The current study identified a large subgroup of mothers (43%) characterized by resilient functioning across all outcome domains examined at age 19. Mothers in this group were enrolled in school and/or employed and did not experience homelessness, substance abuse referrals, or incarceration during the past 2 years. This pattern is consistent with prior studies revealing resilient functioning among many current and former foster youth (e.g., Courtney et al., 2012; Miller et al., 2017; Shpiegel & Ocasio, 2015; Shpiegel, 2016; Yates & Grey, 2012). For instance, in a study by Miller et al. (2017), nearly 40% of youth aged 17 belonged to a resilient profile, exhibiting low rates of problem behaviours and high rates of residential stability. In a study by Yates and Grey (2012), about 47% of youth aged 19 belonged to a resilient profile, faring well across both psychological and behavioural adjustment indicators. Finally, in a study by Shpiegel and Ocasio (2015), which utilized the 2011 cohort of the NYTD data and included similar indicators to those used in the present investigation, about 39% of youths aged 17 were classified as resilient. The present study adds to these findings, suggesting that the rates of resilient functioning among adolescent mothers are similar to those previously reported among foster youth in general.

As expected, adolescent mothers exhibiting resilient profiles at age 19 were characterized by lower risk and higher protection across a range of variables recorded at age 17. To illustrate, they had the highest rates of prior employment experience and the lowest rates of emotional disturbance of all clusters. Moreover, they had lower rates of lifetime homelessness, substance abuse referrals, and incarceration than most other groups. Importantly, nearly half were still in foster care at age 19, consistent with a plethora of studies emphasizing the protective influences of extended foster care (Courtney et al., 2016; Narendorf & McMillen, 2010). Finally, resilient mothers were more likely to reside in family-based settings and less likely to experience placement instability, in line with prior studies connecting these factors to positive adjustment (Keller et al., 2007; Miller et al., 2017; Rubin, O'Reilly, Luan, & Localio, 2007).

Although a large resilient cluster has been identified in the current sample, it is important to remember that over 50% of adolescent mothers experienced challenges in at least one of the domains examined. For many, the challenges were limited primarily to the domains of education, employment, and housing (disconnection and homelessness clusters; 17% and 16%, respectively), whereas others also exhibited risky behaviours, such as substance abuse referrals and incarceration (substance abuse plus and incarceration clusters; 12% and 11%, respectively). Follow-up analyses revealed that members of the disconnection and homelessness clusters were fairly similar to members of the resilience cluster in terms of individual characteristics and child welfare histories recorded at age 17; however, they were more likely to be discharged from foster care by age 19. This finding suggests that earlier

exit from foster care and loss of supports and services provided by the child welfare system may be linked to educational and vocational challenges and housing instability (Courtney et al., 2016).

Mothers belonging to the substance abuse plus and incarceration clusters at age 19 were characterized by higher risk at age 17, across both individual and child welfare indicators. In particular, they evidenced lower rates of employment experience and higher rates of emotional disturbance and prior homelessness, substance abuse referrals, and incarceration. Moreover, they were characterized by fairly high rates of congregate care placements and increased placement instability as compared with the other clusters. These findings are consistent with many existing studies, pointing to the negative effects of congregate care settings and placement instability, as well as the long-term difficulties experienced by youths with pre-existing problem behaviours (King & Van Wert, 2017; Rubin et al., 2007; Stott, 2011).

5.1 | Policy and practice implications

Based on our findings, of those mothers who have struggled in at least one domain at age 19, the majority exhibited challenges in education, employment, and/or housing. This suggests that educational, vocational, and housing assistance is essential for adolescent mothers, especially during the early years of their children's lives, when the burden of childcare is substantial and may interfere with school and work-related tasks. Increasing access to flexible education and employment opportunities and providing high-quality and affordable childcare are instrumental for facilitating their long-term success. Encouraging young mothers to stay in foster care for the maximum amount of time permitted by state legislation is also crucial, as it allows an easier access to supports and services that may facilitate positive outcomes (Courtney, Dworsky, Ruth, Havlicek, and Perez, 2007). This is especially important given that some youth may feel a sense of urgency to exit care, without fully comprehending the consequences of their decision. Providing a flexible re-entry option to these mothers is essential, as some may wish to return to care after emancipation (Aparicio et al., 2015).

Our findings also indicate that child welfare officials should pay increased attention to mothers with histories of problem behaviours, as they may continue to struggle during the period of transition to adulthood. To illustrate, mothers in the substance abuse plus and incarceration clusters often evidenced histories of emotional disturbance and risky behaviours by age 17. These pre-existing risks, coupled with high rates of placement instability and congregate care settings, appear to be associated with a more difficult transition to adulthood. A timely identification of these high-risk mothers and the provision of targeted supports while they are still in care may increase competent functioning as they transition to independent living.

Finally, targeted policy changes to support young mothers in foster care are needed to effectively address their challenges, as they represent a nontrivial proportion of this population. Many states impose school and/or work requirements on youths remaining in extended foster care, forcing those not meeting the requirements to exit care earlier (Child Welfare Information Gateway, 2017). Adolescent females who become pregnant and give birth may feel obligated to exit care prematurely, as they may not be able to comply with school and work requirements, either due to a desire to be home with their child (or children) or because they lack access to affordable, high-quality childcare. Moreover, many states have limited placement options to accommodate mothers and children, especially if they wish to reside with the child's father as a family unit. Modifying extended care policies to include accommodations for parenting youth and increasing placement options for young families may encourage adolescent mothers to remain in extended foster care, allowing them to benefit from services provided by the child welfare system.

5.2 | Limitations and future directions

The findings of the current study should be interpreted in light of its limitations. First, although our sample included mothers from 49 states, the District of Columbia, and Puerto Rico, response rates were highly variable across states. The reasons for nonresponse are not clear, but the most vulnerable youth may have been difficult to locate for NYTD interviews. Although the national response rate for the NYTD's FFY 2014 cohort improved substantially as compared with the previous cohort (i.e., FFY 2011), nonresponse still limits the generalizability of our findings. This limitation is partially offset by the prospective study design using a national sample, allowing to examine a large number of mothers transitioning out of foster care.

Second, the NYTD variables are limited in the amount of detail they provide. It is not known how many children the youth had or whether or not they were actively parenting their children (of note, existing research indicates that most young mothers in foster care tend to reside with and actively parent their children; see Courtney et al., 2007; Combs et al., 2017). The specific circumstances associated with homelessness, substance abuse referrals, and incarceration are also not known, as are the circumstances associated with the type and stability of placements at age 17. Moreover, although the NYTD dataset identifies youth who are no longer in care at age 19, it does not explicitly describe the mechanisms for exit. It is reasonable to assume that most youth had exited care through emancipation; however, a small number may have exited through other mechanisms (e.g., adoption). Finally, despite the prospective nature of this study, our ability to make causal inferences (i.e., connecting individual characteristics and child welfare factors at age 17 to functional patterns at age 19) is limited, given the possibility of unexamined influences and measurement challenges. For instance, although mothers classified as resilient were more likely to reside in family-based settings and less likely to experience placement instability at age 17, it is difficult to know whether these placement factors have resulted in improved functioning at age 19 or if mothers with certain pre-existing characteristics (e.g., less problem behaviours) were more likely to be placed in stable, family-like settings.

Future research would benefit from the inclusion of additional domains when examining the outcomes of mothers aging-out of foster care. The domains included in this study are limited in scope and do not address many important aspects of youths' adjustment, such as

earnings and social functioning. This means that mothers defined as resilient in the current investigation may, in fact, exhibit challenges in other unexamined domains. Moreover, a more nuanced assessment of parenting status is necessary, including the number of children, active parenting status, custody situation, etc. Future research should also evaluate the impact of receiving Chafee services on the outcomes of adolescent mothers leaving foster care. Finally, the cluster solution identified in the current study may be used to predict females' functioning at age 21, using the third wave of the NYTD data.

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ENDNOTES

[1] Data for the second follow-up survey (i.e., age 21) was not publicly available when this analysis was conducted.

[2] Fifteen states opted to use sampling for the FFY 2014 cohort: Colorado, Georgia, Illinois, Indiana, Iowa, Kentucky, Louisiana, Maryland, Massachusetts, Missouri, Ohio, Pennsylvania, Tennessee, Texas, and Washington.

[3] This rate represents the percentage of youth who completed the first follow-up survey at age 19, of those who were considered eligible to complete that survey. In states that did not sample, any youth who completed the baseline survey was eligible for the first follow-up survey. In sampling states, only the youth in the sample were eligible.

[4] With the exception of Maine.

[5] With the exception of "emotional disturbance," which was obtained from AFCARS.

[6] n = 8 for pre-adoptive home, n = 24 for supervised independent living, n = 40 for trial home visit and n = 35 for runaway.

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