

Contents lists available at ScienceDirect

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journal homepage: www.elsevier.com/locate/chiabuneg



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An updated examination of the predictors of running away from foster care in the United States and trends over ten years (2010–2019)

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ARTICLE INFO

Keywords: Child welfare Foster care system Foster children Running away

ABSTRACT

Background: Among the more than 400,000 children in foster care, there is a small group who will run away from care and face increased risks of negative outcomes. Previous studies on the predictors of running away from care use limited samples or outdated data.

Objective: The present study replicates and extends prior research by presenting an updated analysis of predictors of running away from foster care as well as 10-year trends in the prevalence and predictors of running from care.

Participants and setting: This study uses the Adoption and Foster Care Analysis and Reporting System (AFCARS) data to assess the runaway status of 597,911 children who were involved in foster care in 2019. Longitudinal trend analyses utilize AFCARS data from 2010 to 2019.

Method: Using chi-square/t-tests and binary logistic regression analyses, this study investigates individual- and case-level predictors of running away from foster care programs.

Results: Findings show that girls (OR = 1.29, p < .001), African American children (OR = 1.89, p < .001), and older children (OR = 1.61, p < .001) are at increased risk of running away from foster care. Removal reasons such as child substance abuse (OR = 1.65, p < .001), abandonment (OR = 1.38, p < .001), and child behavioral problems (OR = 1.31, p < .001) are also associated with an increased risk. Analysis of 10-year trends shows a steady decline in running from care: 1.40% in 2010 to 0.98% in 2019. The profile of risk factors is stable overall, with a few notable exceptions.

Conclusions: The percent of children running from foster care is at a 10-year low. Prevention and intervention efforts regarding running from care must focus on the needs of African American and Hispanic children, especially girls, as well as children with substance use or behavior problems. Given that programs rarely have prospective information regarding why children leave care and the negative consequences of labeling children as "runaways," shifting language to "missing from care" should be considered.

1. Introduction

There are more than 400,000 children in foster care programs in the United States (U.S.) at any given time (U.S. Department of Health and Human Services, 2018). Children may be placed in foster care because of abuse or neglect in their family of origin, parental

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abandonment, death, or incarceration, among other reasons (U.S. Department of Health and Human Services, 2018). Among children in foster care, some may run away or otherwise go missing from their foster care placements, thereby increasing their risk of victimization and a host of other negative outcomes (e.g., substance use, dropping out of school; Courtney & Zinn, 2009; Crosland & Dunlap, 2015; Latzman et al., 2019).

Given the risks of running from foster care placement, prior research has focused on the individual- and case-level factors that predict running from care; however, most studies rely on data from single states/jurisdictions or specific care settings, (e.g., Courtney et al., 2005; Crosland & Dunlap, 2015; Nesmith, 2006). The one previous study that utilize national data – the National Adoption and Foster Care Analysis and Reporting System (AFCARS) – relied on a single year of data, from 2009, and has become quite dated (Lin, 2012).

The present study aims to replicate and extend prior research by using AFCARS data to present (1) a multivariate analysis of predictors of running from care using the most recent data (2019) as well as (2) trends in predictors from 2010 to 2019. Findings show that running behavior dramatically decreased over the 10-year study period, and that most predictors of running remained stable. Findings are discussed in the context of prevention and intervention strategies for addressing running behavior among children in foster care as well as priorities for future research and practice.

1.1. Running behavior in foster care programs

Children involved in foster care are about twice as likely to run away than children in the general population (Sedlak et al., 2005), and while many children who run from care return after approximately one week, roughly a quarter are missing from care for five or more weeks (Courtney et al., 2005). Running from a foster care placement is associated with an increased risk of many harmful behaviors. For example, children who have run away from care report higher rates of substance abuse (Courtney & Zinn, 2009), crime perpetration (Crosland & Dunlap, 2015; Yoder et al., 2003), truancy from school, and dropping out of school (Crosland & Dunlap, 2015; Sullivan & Knutson, 2000), compared to children who have not run from their foster care placement. Running from foster care has also been associated with an increased risk of sexual exploitation and trafficking (Cohen et al., 1991; Latzman et al., 2019; Yates et al., 1988), repeated victimization (Hoyt et al., 1999; Yates et al., 1988), exposure to STDs/STIs (Booth et al., 1999; Courtney et al., 2005), and attempted suicide (Yates et al., 1988).

Given that children who run from care are particularly vulnerable to violence and victimization, understanding the predictors of running from care is paramount. Prior research has included qualitative case studies (e.g., Clark et al., 2008) or interviews with children who have run from their foster care placements (e.g., Courtney et al., 2005). In addition, quantitative research has predominantly analyzed administrative data from single state child welfare systems (e.g., Illinois, Courtney et al., 2005) or specific care settings (e.g., family foster care, Nesmith, 2006; specialized foster care, Fasulo et al., 2002).

Taken together, these prior studies identify a host of individual- and case-level predictors of running from foster care. For example, research shows that girls (Fasulo et al., 2002; Sunseri, 2003) and children of color (African American or Hispanic children; Dworsky et al., 2018; Wulczyn, 2020; America Indian/Alaska Native children; Nesmith, 2006) are at an increased risk for running away from care. Additionally, running behavior peaks around 16 to 18 years of age (Courtney et al., 2005; Sunseri, 2003). Other individual-level risk factors include substance abuse (Courtney et al., 2005; Courtney & Zinn, 2009; Eisengart et al., 2008; McIntosh et al., 2010), previous running behavior (Bowden & Lambie, 2015; Courtney & Zinn, 2009; Sunseri, 2003), mental and physical disabilities (Clark et al., 2008; Courtney et al., 2005; Courtney & Zinn, 2009), and sexual minority/LGBTQ+ identity (Fish et al., 2019; Wilson & Kastanis, 2015).

In addition to individual characteristics, there are several placement-level factors associated with running from care. Using a sample of over 14,000 children in Illinois who had run away from care and returned, Courtney et al. (2005) found that children who were not placed with their siblings were more likely to run from placement than children who were placed with their siblings. Similarly, children ran away more often when placed in group homes—instead of foster families—and with foster families who are not relatives, compared to placement with foster families who are relatives (Courtney et al., 2005). Furthermore, placement history and instability are strongly associated with running behavior. For instance, children are more likely to run away from care when they experience greater numbers of removals from their family of origin and more changes in their foster care placements (Bowden & Lambie, 2015; Courtney & Zinn, 2009; English & English, 1999; Zimmerman et al., 1997).

In addition to the aforementioned research, one study to date has examined the population of children in foster care using the Adoption and Foster Care Analysis and Reporting System (AFCARS) data from 2009 (Lin, 2012). Lin's analysis substantiated the general demographic profile of children who are at greatest risk for running away – females, children of color, and older youth. She also found that children who are removed from their family of origin at an older age are more likely to run than those who are younger at first removal and that physical and mental health diagnoses are correlated with a higher risk of running away (Lin, 2012).

1.2. Theoretical explanations for running behavior

Broadly, the literature suggests that children run away from home as a coping behavior (Cochran et al., 2002; Courtney et al., 2005; Crosland & Dunlap, 2015; Safyer et al., 2004). Running behavior predecessors include perceived or actual family hostility towards or rejection of the child (e.g., as in the case of a child who identifies as LGBTQ+), caregiver or interfamilial conflict, depressive symptomology, and abuse (Cochran et al., 2002; Safyer et al., 2004; Thrane et al., 2006). Taken together, Hammer et al. (2002) summarize the nature of why children run away by noting that, "children may leave to protect themselves or because they are no longer wanted in the home" (p. 2).

Crossland et al. (2018) have specifically reasoned children run away from foster care due to broad categories of *running to* and *running from* behaviors. To elaborate, *running to* behaviors were categorized as seeking out friends, family, and a sense of normalcy (e. g., parties, sporting events, and extracurricular activities) (see also Courtney et al., 2005). For instance, research has found that children are more likely to run away from care when their families of origin are comprised of a single-parent caregiver, compared to two-parent households (Lin, 2012), perhaps because the child fills a responsibility as a caretaker to their sole parent or is a caretaker to siblings. In contrast, *running from* behaviors were characterized as those aimed at avoiding negative environments such as foster care staff, families, and peers that make them feel unwanted, unloved, or prevent them from engaging in activities the child desires (e.g., dating; Crosland & Dunlap, 2015; Courtney et al., 2005; Fasulo et al., 2002). To that end, research shows that children in foster care placements report higher rates of physical and sexual abuse from their caregivers than children not living in foster care placements (Euser et al., 2014) as well as higher rates of exposure to violence (e.g., violence in their neighborhoods, violence between caregivers) (Turney & Wildeman, 2017).

2. Current study

Prior research has demonstrated that running away is concentrated among children in foster care and that children who run away from care are at an increased risk of violence and other harmful outcomes. While prior research has examined the individual and system-level predictors of running away from care, most of these prior studies have focused on single jurisdictions/states or specific care settings (e.g., Courtney et al., 2005; Crosland & Dunlap, 2015). Further analyses by Lin (2012) provided a foundation for understanding the national landscape of children who run away; however, these studies represent an analysis of a single year (2009) of annual national data and have become quite dated. To this end, the present study provides a 10-year update to Lin's (2012) analysis by replicating her research using 2019 AFCARS data and providing an analysis of trends in predictors of running from care from 2010 to 2019.

3. Methodology

3.1. Sample

Data for this study were drawn from the Adoption and Foster Care Analysis and Reporting System (AFCARS) from the National Child Abuse and Neglect Data System (NCANDS). These data contain case-level information for all children in foster care or who are adopted through states' child welfare agencies. The U.S. Department of Health and Human Services houses the annual data collection effort. Data reporting to AFCARS is mandatory for all Title IV-E agencies. Each fiscal year the AFCARS data reflects the reporting period between October 1 of the prior year and September 30 of the current year. For example, the AFCARS data for the fiscal year 2019 was collected between 10/1/2018 through 9/30/2019. This study first examined the 597,911 children in foster care in 2019; AFCARS data for years 2010 to 2019 was used for an analysis of 10-year trends.

3.2. Measures

Following previous research by Lin (2012), we included children's age, sex, and race/ethnicity as well as seven independent control variables: children's age at first removal, number of removals from the family of origin, number of placements, duration of current placement, reason for removal, clinically diagnosed disability, and original family structure. Census region was also included in the present analysis.

3.2.1. Dependent variable

The child's *runaway status* was derived from the AFCARS variable for the child's current placement in foster care. The AFCARS report defined a child's placement as one of the following: (1) pre-adoptive home, (2) foster family home, relative, (3) foster family home, non-relative, (4) group home, (5) institution, (6) supervised independent living, (7) trial home visit, and (8) runaway. The only placement that was excluded in this study was "supervised independent living" since the foster care youth lives independently. For this study, placement was dichotomized (0 = not runaway) (includes all other placement settings), 1 = runaway).

3.2.2. Independent variables

Sex was coded dichotomously (0 = male; 1 = female). Since the AFCARS report only provides the child's birth date, the *child's age* was computed by subtracting the date of birth from the reporting year. Like Lin (2012), children were excluded if they were younger than 0 years-old (which occurred in the event of errors in the dataset) and older than 23 years-old. Lin explains the decision to include individuals between 18 and 23 years-old was made because some states (e.g., Massachusetts and Connecticut) have extended foster care services to age 23 (Child Welfare League of America, 2009). Race/ethnicity was coded as five mutually exclusive categories (1 = White, non-Hispanic, 2 = African American, non-Hispanic, 3 = American Indian/Alaskan Native, non-Hispanic, 4 = Asian, 5 = Other, non-Hispanic (including Hawaiian/Other Pacific Islander, and more than one race, and 5 = Hispanic)). We replicated Lin's (2012) derived measure for the age at first removal from the caretaker of origin. This measure was created by subtracting the child's birth year by the first removal year. Children who were younger than 0 years-old (because of a coding error) and older than 17 years-old at time of first removal were omitted from the sample.

We also replicated Lin's (2012) three indicators for placement instability. First, we measure the duration in months a child had been

in their most recent foster care episode. To do this, we take the number of days between the date of placement in the most recent foster care setting and the end of the fiscal year and divide by 30.417. Second, the remaining two indicators were pulled directly from the AFCARS report. The first of these indicators consists of the *number of placement* settings in the current foster care episode. This includes the child's current placement. The second indicator consists of the *total number of removals* from the child's home of origin over the child's entire life, including the current removal.

Reason for removal from original family is comprised of 13 circumstances that are dichotomously coded (0 = no, 1 = yes) and include: (1) physical abuse, (2) sexual abuse, (3) neglect, (4) parent substance use (drugs or alcohol), (5) child substance use (drugs or alcohol), (6) child disability, (7) child behavior problem, (8) parent death, (9) parent incarceration, (10) caretaker inability to cope, (11) abandonment, (12) relinquishment, and (13) inadequate housing. Clinically diagnosed disability was collected in the AFCARS report through several variables. First, a series of five dichotomous variables indicated that a child had been clinically diagnosed with any of the following disabilities: intellectual disability, visual or hearing impairment, physical disability, emotionally disturbed, and other condition that requires special care (e.g., asthma, AIDS, autistic spectrum disorder). Additionally, the AFCARS reported whether a child had been diagnosed with any disability in which "yes" referred to the children who had responded "yes" to any of the previous dichotomous variables. In this variable, children who responded with "no" and "not yet to be determined" were collapsed into a single category. This was done because "no" indicated that a child had undergone clinical testing and had been found to have no disability, whereas "not yet to be determined" indicated that a child had not been assessed by a professional. In this study, clinically diagnosed disability was operationalized categorically (0 = no disability/not yet determined (reference group), 1 = intellectual disability, 2 = intellectual disabilityvisual or hearing impaired, 3 = physical disability, 4 = emotionally disturbed, 5 = other disability). The AFCARS data reports original family structure using five categories (1 = married couple, 2 = unmarried couple, 3 = single female family (reference group), 4 = singlemale family, 5 = undetermined families). Lastly, we also added the U.S. census region where the child was located. We used the U.S. Census Bureau's official regions (1 = Northeast, 2 = Midwest, 3 = South (reference group), 4 = West).

3.3. Analytical strategy

We begin by presenting an analysis of the 2019 AFCARs data. Descriptive statistics were calculated for all study variables and a series of bivariate analyses were conducted to assess significant differences between children who did and did not run away (Table 1). Independent samples t-tests were used to assess all continuous variables, and chi-square analyses were used to assess all categorical variables. Then, a binary logistic regression model was estimated to evaluate the independent effects of all study variables on runaway status (see Table 2). The results of the binary logistic regression are presented as an odds ratio. Odds ratios can be interpreted as the relative odds of an outcome (here, runaway status) dependent on an independent variable (e.g., a child's age, race, disability status). Finally, we replicated our binary regression model using AFCARS data for 2010 to 2018 to examine trends in the prevalence and predictors of runaway behavior over the ten years since Lin's (2012) study (i.e., 2010 to 2019; see Tables 3 and 4). Regarding missing data, approximately 9.16% of data for the independent variables were missing from the AFCARS files. Specifically, 21 variables had <1% missing data; 2 variables had 1–3% missing data; and 1 variable had 3.65% missing data. We also assessed for cell missingness and found that cell missing was 0.61%. Alpha was set at p < .05 for all analyses.

4. Results

Descriptive statistics for youth in foster care in 2019 as well as bivariate comparisons for children who did and did not run away from foster care are presented in Table 1. Regarding runaway status, findings showed that running away from foster care is a rare event: less than 1% (0.98%) of children's foster care placement was listed as "runaway". Children in foster care ranged from 0 to 23 years old (M = 8.27; SD = 5.56). Children who ran away from foster care were significantly older (M = 16.87; SD = 1.88) than children who did not run away (M = 8.18; SD = 5.52, t = -120.53, df = 597,909, p < .001). Girls comprised slightly less than half of children in foster care (48.31%); however, were significantly more likely to runaway (SD = 1.529, SD = 1.529,

There were statistically significant racial differences between children who ran away from foster care and children who did not. Despite White children making up 46.58% of the foster care population, they only comprised 30.94% of children who ran away from foster care ($x^2 = 760.51$, df(5), p < .001). In contrast, African American children comprised the highest proportion of children who ran away from care (33.22%), despite only consisting of about 22% of the foster care population. In addition, Hispanic children were also disproportionately represented as having run away (26.37%) (p < .001). The age a child was first removed from their family of origin ranged from 0 to 18 years old (M = 5.79, SD = 5.13). Children who ran away from foster care were more likely to be older when removed from their family of origin (M = 12.01, SD = 4.90), compared to children who did not run away (M = 5.73, SD = 5.09), t = -94.06, df = 597,909, p < .001.

All three indicators of placement instability were significantly different for children who did and did not run away from foster care. First, children in care had been removed on average 1.24 times (SD = 0.57, Range = 1-18); however, children who had runaway had been removed an average of 1.58 times (M = 1.58, SD = 0.89) compared to children who did not run away (M = 1.24, SD = 0.56), t = -45.67, df = 597,909, p < .001. Second, while children had an overall average of 2.78 prior foster care placements (SD = 3.36, Range = 1.58).

¹ AFCARS continues to use the term "mental retardation", however, the term intellectual disability is now the preferred term by the federal government and has been codified in the Federal Register for the evaluation of mental impairments in children and adults (see Social Security Administration, 2013).

Table 1 Descriptive statistics for children in foster care and bivariate differences based on runaway status (N = 597,911).

Variable	M (SD)/%	M (SD)/%	$\%/M^{Diff}$		
	Total sample $N = 597,911$	Runaway $n = 5867$	Non-runaway $n = 592,044$		
Female	48.31%	54.97%	48.24%	6.73%***	
Race/ethnicity					
White	46.58%	30.94%	46.74%	-15.80%**	
Black/African American	22.00%	33.22%	21.89%	11.33%***	
American Indian/Alaskan Native	2.31%	1.98%	2.31%	-0.33%***	
Asian	0.50%	0.55%	0.50%	0.04%***	
Other	8.05%	6.95%	8.06%	-1.11%***	
Hispanic	20.56%	26.37%	20.50%	5.87%***	
Clinically diagnosed disability					
No disability	74.36%	58.96%	74.51%	-15.55%**	
Intellectual disability	0.52%	0.14%	0.53%	-0.39%***	
Visually or hearing impaired	0.79%	1.43%	0.78%	0.65%***	
Physical disability	0.27%	0.09%	0.27%	-0.19%***	
Emotionally disturbed	10.68%	24.29%	10.55%	13.74%***	
Other disability	13.38%	15.10%	13.37%	1.74%***	
Original family structure					
Single female	47.77%	52.51%	47.72%	4.79%***	
Married couple	18.02%	18.82%	18.02%	0.80%***	
Unmarried couple	24.74%	13.04%	24.85%	-11.82%**	
Single male	5.55%	10.53%	5.50%	5.03%***	
Unknown	3.92%	5.10%	3.91%	1.19%***	
Removal reason	3.5270	3.1070	3.5170	1.1370	
Physical abuse	12.92%	11.32%	12.93%	-1.62%***	
Sexual abuse	4.05%	6.05%	4.03%	2.02%***	
Neglect	65.65%	51.68%	65.78%	-14.11%**	
Parent substance abuse	40.41%	16.33%	40.65%	-24.32%**	
Child substance abuse	2.32%	6.58%	2.28%	4.30%***	
Child disability	1.92%	2.68%	1.91%	0.76%***	
Child behavior problem	7.61%	34.55%	7.35%	27.20%***	
Parent death	0.85%	1.38%	0.85%	0.53%***	
Parent incarceration	7.55%	4.40%	7.58%	-3.18%***	
Caretaker inability to cope	14.37%	18.19%	14.33%	3.85%***	
Abandonment	4.96%	12.00%	4.89%	7.11%***	
Relinquishment	0.99%	2.10%	0.98%	1.12%***	
Inadequate housing	11.76%	7.65%	11.80%	-4.15%***	
Census region	11.76%	7.05%	11.80%	-4.15%"""	
e	27 270/	20.450/	27 260/	-8.91%***	
South	37.27%	28.45%	37.36%	-8.91%^^^ 3.31%***	
Northeast	11.93%	15.20%	11.90%		
Midwest	26.89%	25.94%	26.90%	-0.96%***	
West	23.90%	30.41%	23.84%	6.57%***	
Age	8.27 (5.56)	16.87 (1.88)	8.18 (5.52)	8.69***	
	Range = $0-23$	Range = 0-22	Range = 0-23		
Age at first removal	5.79 (5.13)	12.01 (4.90)	5.73 (5.09)	6.28***	
	Range = $0-18$	Range = $0-17.99$	Range = 0–18		
Duration (months)	9.44 (11.64)	5.00 (6.83)	9.49 (11.67)	-4.49***	
	Range = $0-252$	Range = 0-116	Range = 0-252		
Number of previous placements	2.78 (3.36)	6.67 (7.60)	2.75 (3.27)	3.92***	
	Range = 197	Range = 1-89	1–98		
Number of total removals	1.24 (0.57)	1.58 (0.89)	1.24 (0.56)	0.34***	
	Range = 117	Range = 1-8	1–18		

^{*} p < .05, ** p < .01, *** p < .001.

= 1–99), children who ran away had four additional prior placements (M = 6.67, SD = 7.60) compared to children who did not run away (M = 2.75, SD = 3.30, t = -89.38, df = 597,909, p < .001). Third, children who had runaway had spent approximately four months less time in their current placement (M = 5, SD = 6.83) than children who did not run away (M = 9.49, SD = 11.67), t = 29.38, df = 597,909, p < .001.

Regarding reason for removal, most children in foster care were removed from their primary caregivers for reasons of neglect (65.65%) or parental substance abuse (40.41%), while 7.61% were removed for the child's own behavioral problems. In comparison, 34.55% of children who had run away from foster care were removed from their family of origin for behavioral problems, compared to children who did not runaway (7.35%) ($x^2 = 6111.28$, df(1), p < .001). In contrast, children who experienced neglect were underrepresented in the runaway group compared to the non-runaway group, 51.68% and 65.78%, respectively ($x^2 = 512.57$, df(1), p < .001). Moreover, caretaker inability to cope was significantly related to runaway status, (18.19% versus 14.33%, $x^2 = 70.08$, df(1), p < .001) as was children's disability status (2.68% versus 1.91%, $x^2 = 18.05$, df(1), p < .001), child substance abuse problems (6.58%)

Table 2 Binary logistic regression model examining predictors of runaway status among children in foster care (N = 597,911).

Variable	В	SE	95% CIs	OR		
Female	0.25	0.03	1.22 1.36		1.29***	
Race/ethnicity						
Black/African American	0.64	0.04	1.77	2.03	1.89***	
American Indian/Alaskan Native	0.37	0.10	1.19	1.76	1.45***	
Asian	0.21	0.18	0.86	1.77	1.23	
Other	0.43	0.06	1.37	1.71	1.53***	
Hispanic	0.60	0.04	1.69	1.96	1.82***	
Clinically diagnosed disability						
Intellectual disability	-0.78	0.36	0.23	0.93	0.46	
Visually or hearing impaired	0.23	0.12	1.00	1.58	1.26	
Physical disability	-0.54	0.46	0.24	1.43	0.58	
Emotionally disturbed	0.05	0.03	0.98	1.12	1.05	
Other disability	-0.16	0.04	0.79	0.92	0.85***	
Original family structure						
Married couple	-0.21	0.04	0.76	0.88	0.81***	
Unmarried couple	-0.02	0.04	0.90	1.06	0.98	
Single male	0.13	0.05	1.03	1.25	1.14**	
Unknown	-0.04	0.06	0.85	1.09	0.96	
Removal reason						
Physical abuse	-0.03	0.04	0.89	1.06	0.97	
Sexual abuse	-0.10	0.06	0.81	1.01	0.90	
Neglect	0.16	0.03	1.10	1.24	1.17***	
Parent substance abuse	-0.10	0.04	0.84	0.98	0.91*	
Child substance abuse	0.50	0.06	1.47	1.85	1.65***	
Child disability	-0.35	0.09	0.60	0.84	0.71***	
Child behavior problem	0.27	0.03	1.22	1.40	1.31***	
Parent death	-0.01	0.12	0.79	1.24	0.99	
Parent incarceration	-0.07	0.07	0.82	1.06	0.93	
Caretaker inability to cope	0.05	0.04	0.98	1.13	1.05	
Abandonment	0.32	0.04	1.27	1.51	1.38***	
Relinquishment	0.06	0.10	0.88	1.29	1.06	
Inadequate housing	0.05	0.05	0.95	1.17	1.06	
Census region						
Northeast	0.27	0.05	1.20	1.43	1.31***	
Midwest	0.26	0.04	1.20	1.39	1.30***	
West	0.61	0.04	1.70	1.98	1.84***	
Age	0.48	0.01	1.59	1.63	1.61***	
Age at first removal	0.01	0.00	1.00	1.02	1.01**	
Duration (months)	-0.06	0.00	0.94	0.94	0.94***	
Number of previous placements	0.03	0.00	1.03	1.04	1.03***	
Number of total removals	0.12	0.02	1.09	1.18	1.13***	
Intercept	-12.11	0.12	_	_	-	
F (DF)	20,141.24 (36)**					
Nagelkerke R square	0.32					

Note: Reference Categories: White, No disability, Single female, and South. $p<.05. \\ p<.01. \\ p<.001.$

Table 3 Ten year trends for the prevalence of children running away from FC programs (2010–2019).

Year	Children in foster care programs N	Children who ran away N	Prevalence of children who ran away %
2010	534,056	7456	1.40%
2011	535,944	7340	1.37%
2012	526,366	6235	1.18%
2013	542,315	6121	1.13%
2014	569,333	6344	1.11%
2015	592,639	6537	1.10%
2016	594,285	6470	1.09%
2017	610,723	6707	1.10%
2018	608,826	6162	1.01%
2019	597,911	5867	0.98%
10-Year average	571,239.80	6523.90	1.14%

Table 4Ten year trends for the predictors of children running away from FC programs (2010–2019).

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	10-Yea average
Married couple	1.02	1.00	0.96	0.98	1.00	1.08	0.99	1.04	1.08	0.81	0.99
Unmarried couple	0.72	0.72	0.71	0.77	0.75	0.82	0.75	0.76	0.87	0.98	0.78
Single male	1.00	0.92	0.95	1.00	1.05	1.13	1.07	1.03	1.06	1.14	1.03
Unknown	1.00	0.92	1.06	0.90	0.97	1.12	0.88	0.99	1.10	0.96	0.99
Female	1.50	1.34	1.37	1.37	1.41	1.45	1.45	1.42	1.33	1.29	1.39
Black/African American	1.54	1.55	1.55	1.46	1.53	1.62	1.55	1.56	1.77	1.89	1.60
American Indian/Alaska Native	1.21	1.88	1.92	1.61	1.57	1.36	1.56	1.76	1.51	1.45	1.58
Asian	1.44	1.64	1.56	1.34	1.33	0.90	0.94	1.06	1.01	1.23	1.24
Other	1.35	1.29	1.56	1.52	1.49	1.45	1.37	1.40	1.50	1.53	1.45
Hispanic	2.09	2.23	2.07	1.87	1.86	1.89	1.78	1.79	1.69	1.82	1.91
Intellectual disability	0.51	0.46	0.53	0.75	0.43	0.62	0.43	0.43	0.30	0.46	0.49
Visually/hearing impaired	1.15	1.26	1.52	1.76	1.44	1.02	1.12	1.18	1.08	1.26	1.28
Physical disability	0.76	0.84	0.52	0.92	0.84	0.53	0.35	0.88	0.38	0.58	0.66
Emotionally disturbed	0.95	0.99	1.17	1.27	1.14	1.06	1.09	1.12	1.15	1.05	1.10
Other disability	0.96	0.94	1.09	1.25	1.18	1.04	0.99	0.91	1.03	0.85	1.03
Northeast	0.69	0.62	0.75	0.66	0.61	0.81	0.90	0.91	0.81	1.31	0.81
Midwest	0.92	1.00	1.11	1.29	1.30	1.31	1.47	1.23	1.19	1.30	1.21
West	1.46	1.53	1.55	1.77	1.96	2.06	2.20	1.86	1.84	1.84	1.81
Age at first removal	1.01	1.01	1.01	1.02	1.02	1.01	1.02	1.02	1.01	1.01	1.01
Duration (months)	0.94	0.94	0.94	0.93	0.93	0.93	0.94	0.94	0.93	0.94	0.94
Number of previous	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.03	1.03	1.04
placements											
Number of total removals	1.12	1.10	1.13	1.17	1.14	1.14	1.20	1.20	1.12	1.13	1.15
Age	1.59	1.58	1.60	1.57	1.63	1.59	1.59	1.62	1.63	1.61	1.60
Physical abuse	0.94	1.04	1.04	0.95	0.95	1.00	0.95	0.92	1.04	0.97	0.98
Sexual abuse	0.97	0.99	0.98	0.86	0.96	0.95	0.89	0.85	0.85	0.90	0.92
Neglect	1.14	1.22	1.16	1.20	1.11	1.13	1.14	1.17	1.09	1.17	1.15
Parent substance abuse	1.09	1.14	1.27	1.10	1.23	1.18	0.99	0.91	0.94	0.91	1.07
Child substance abuse	1.43	1.47	1.55	1.40	1.32	1.43	1.38	1.39	1.39	1.65	1.44
Child disability	0.77	0.78	0.71	0.79	0.75	0.66	0.67	0.56	0.58	0.71	0.70
Child behavior problem	1.06	1.19	1.14	1.14	1.11	1.07	1.13	1.30	1.26	1.31	1.17
Parent death	0.99	0.99	1.15	1.06	1.23	1.07	0.85	0.84	0.86	0.99	1.00
Parent incarceration	1.00	0.94	0.93	0.97	0.86	0.83	0.96	0.88	0.99	0.93	0.93
Caretaker inability to cope	1.19	1.20	1.09	1.10	1.03	1.02	1.01	1.07	1.04	1.05	1.08
Abandonment	1.36	1.41	1.51	1.60	1.55	1.48	1.42	1.37	1.35	1.38	1.44
Relinquishment	0.88	1.07	1.05	0.89	1.07	1.07	0.98	1.00	1.06	1.06	1.01
Inadequate housing	1.14	0.99	1.12	1.17	1.10	1.01	1.02	1.11	1.07	1.06	1.08

Notes: p < 0.05, p < 0.001 Reference Categories: White, No disability, Single female, and South

versus 2.28% $x^2 = 474.62$, df(1), p < .001), abandonment (12.00% versus 4.89%, $x^2 = 623.60$, df(1), p < .001), and sexual abuse (6.05% versus 4.03%, $x^2 = 60.97$, df(1), p < .001). In contrast to Lin's (2012) findings, these analyses also demonstrated that voluntary relinquishment of parental rights was overrepresented among children who ran away: relinquishment of parental rights was present in 2.10% of children who ran away from foster care compared to 0.98% of children who did not run away, $x^2 = 74.33$, df(1), p < .001.

Regarding clinically diagnosed disabilities, there were statistically significant differences between children who ran away from foster care and children who did not, $x^2 = 1284.03$, df(5), p < .001. However, inconsistent with Lin's (2012) analysis of 2009 AFCARS data, the present analysis using 2019 data did not find that children who had runaway were overrepresented across each type of disability. Specifically, children who had runaway had higher rates of being visually or hearing impaired (1.43% versus 0.78%), having an emotional disturbance (24.29% versus 10.55%), and having "other" disabilities (15.10% versus 13.37%), compared to children who had not runaway; however, children who had runaway were underrepresented among children with an intellectual disability (0.14% versus 0.53%) or a physical disability (0.09% versus 0.27%).

Regarding original family structure, nearly half of children in foster care had been removed from a single-female caregiver (47.77%) compared to a married couple (18.02%) or a single-male caregiver (5.55%). Original family structure was significantly related to running away from foster care, $x^2 = 644.17$, df(4), p < .001. Children who had been removed from a single male caregiver of origin (10.52%) and single female care giver of origin (4.81%) were most disproportionately overrepresented among children who had run away, while children who had been removed from an unmarried couple were most disproportionately underrepresented among children who had run away. In contrast to Lin's (2012) findings, children removed from married couples were also overrepresented—although only slightly—among children who had run away (18.82% versus 18.01% for non-runaways).

Most foster care children were in the southern census region (32.27%). Children who ran away, however, were most likely to be in the northeast (15.19% versus 11.90%) and western (30.38% versus 23.84%) census regions ($x^2 = 281.28$, df(3), p < .001).

Next, a binary logistic regression model was estimated to examine the relationship between the independent variables and runaway status. To begin, age and female sex was associated with running away. Specifically, for every year of age, the odds of running away increased by 1.61 (p < .001), while girls had 1.29 times greater odds of running away than boys (p < .001). Additionally, African American, Native American, children of "Other" races, and Hispanic children were at an increased odds of running away compared to White children with an increase in the comparative odds of 89%, 45%, 53%, and 82% respectively.

There were also significant relationships between running away and the age at first removal, number of removals, number of foster care placements, and duration spent in foster care. Specifically, for every year older a child was at the time of their first removal, there was 1.01 times greater odds of running away (p = .008) and each additional removal was associated with 1.13 greater odds of running away (p < .001). Additionally, each additional placement was associated with 1.03 greater odds of running away (p < .001), while each additional month a child spent in their current foster care placement was associated with a 6% decrease in the odds of running away from the placement (p < .001).

Regarding the relationship between removal reason and runaway status, neglect (OR = 1.17, p < .001), child substance abuse (OR = 1.64, p < .001), child behavior problems (OR = 1.31, p < .001), and abandonment (OR = 1.38, p < .001) were each associated with an increase in the odds of a child running away from placement compared to children who were not removed for those respective reasons. Comparatively, parental substance abuse was associated with a 9% decrease in the odds of running away compared to children who had not been removed for parental substance abuse (p = .01). Removal due to a child's disability status was associated with a 29% reduction in odds of running away (p < .001).

Among children with clinically diagnosed disabilities, those with an 'intellectual disability' were associated with a 54% reduction in the odds of running away (p = .03) while having an 'other disability' was associated with a 15% decrease in the odds of running away compared to those with no disability. In addition, children who had been removed from families of origin consisting of married couples had a 19% decrease in the odds of running away (p < .001), compared to children whose family of origin included a single female household. Children from single male households of origin, in contrast, had 1.13 times greater odds of runaway from their foster care placement (p = .007). Finally, census region was related to running away with children from the Northeast, Midwest, and Western regions all associated with an increased odds of running away compared to children in foster care in the Southern census region (p < .001).

Lastly, we present a series of binary logistic regression analyses that chart 10-year trends for running behavior from foster care from 2010 to 2019. First, we present 10-year trends for the prevalence of running away from foster care programs (see Table 3). In 2010, about 1.40% of children in the AFCARS data were identified as having run away from foster care. Over the 10-year study period there has been a consistent decline in the percentage of children who run away from care, with 2019 data showing that 0.98% of children in the AFCARS data had run from care.

Next, we present 10-year trends in the odds ratios for individual- and case-level variables predicting running away from care (see Table 4). Findings show an overwhelmingly stable profile of predictors from 2010 to 2019; however, there are some notable exceptions. For example, in 2019 (and 2015) single male households of origin is a significant predictor of running behavior, but not in other previous years. In addition, children who identified as Asian were significantly more likely to run away from foster care in years 2010 to 2012, but not since 2012. Further, inadequate housing has been sporadically related to an increased risk for running from care; however, not since 2018.

Finally, the relationship between the different disability types and running behavior has been intermittently related to running behavior across the 10-year period. For example, although not a significant predictor of running from care in 2019, visual/hearing impairments and emotional disturbances have been identified as increasing the likelihood of running in previous years, while both intellectual disabilities and physical disabilities have been associated with a decreased likelihood. In comparison, having an 'other disability' has been previously identified as both increasing and decreasing the risk of running behavior.

5. Discussion

Prior research on running away from foster care has primarily used interviews with children who have run from care or administrative record reviews from single state/jurisdictions or specific care settings (e.g., Courtney et al., 2005; Crosland & Dunlap, 2015; Nesmith, 2006). Lin (2012) provided the first national profile on children who run away from foster care using 2009 AFCARS data. Although AFCARS data is collected annually, we know of no other study that has sought to replicate Lin's analysis with additional years of data or examine patterns over time. The present research provides a 10-year update regarding predictors of running from foster care using 2019 AFCARS data and examines trends in the prevalence and predictors of running from care from 2010 to 2019.

First, in regard to our primary aim, the analyses presented here replicated most findings from Lin (2012). Consistent with prior work (Clark et al., 2008; Fasulo et al., 2002; Lin, 2012; Sunseri, 2003), the present study found that girls were more likely to run away from care compared to boys. In addition, race was the strongest predictor of running from care with children of color at a greater risk of running away compared to White children. Specifically, we found that African American children were at the greatest risk of running away; then Hispanic children, children from "Other" races, and American Indian/Alaska Native children. In comparison, Lin's (2012) findings showed that Hispanic children had the highest risk of running away, then American Indian/Alaska Native children, children from "Other" races, and African American children. Additionally, the present results showed that Asian children were not statistically more or less likely to run compared to White children; however, Lin's (2012) previous findings showed that Asian children were nearly 54% more likely to run away than White children.

Regarding disabilities, 'other' disability diagnoses – asthma, autism spectrum disorder, and cancers – were associated with a decreased risk of running away (see also Courtney & Zinn, 2009). In contrast, Lin (2012) found that multiple disability types (e.g., visual/hearing impairments, intellectual disabilities) were associated with a reduced risk of running away compared to having no disabilities. Further, Lin's findings regarding original family structure were partially replicated. Like in Lin's analysis children who had been removed from married couples were less likely to run than those who had been removed from single female households of origin; however, diverging from Lin's findings, the present analysis showed that children who were removed from single-male households were at a greater risk of running away compared to children who had been removed from single female households.

Also consistent with Lin (2012), the present findings showed that child substance abuse was the most important removal reason when anticipating risk of running away; here, child behavior problems were also an important risk factor. Further, the present study found that children who ran away from foster care were more likely to be older (approximately eight years older; see also Lin, 2012; Sunseri, 2003). Also, in line with prior research, all three indicators of placement instability – duration in care, number of placements, and number of removals – were related to increased risk of running away (Bowden & Lambie, 2015; Courtney & Zinn, 2009; Lin, 2012). The present findings showed that children who ran away were in their current foster care placement for an average of four fewer months than children who did not runaway, compared to an average of seven fewer months in Lin's study. Similarly, children who ran away had an average of four more placements and more removals from their family of origin than children who did not runaway. This is consistent with research by Lin (2012) and Clark et al. (2008) which demonstrated that multiple placement settings increased the risk of running away; however, the most salient indicator of placement instability both here and in Lin's research was number of removals.

Regarding 10-year trends in running away from care, findings first showed that the percent of children in foster care who ran away steadily declined from about 1.4% in 2010 to less than 1% in 2019. Further, the profile of predictors of running behavior was overwhelmingly stable – females, children of color, children with substance use or behavior problems, older children, and those with greater placement instability were more likely to run from care – however, some notable exceptions were identified. For example, over the 10-year period running behavior among Asian children dramatically reduced, and the relationship between disability and running behavior was intermittent and in some instance changed directions over time.

While these data are limited in their ability to make causal inferences regarding changes in prevalence and predictors of running behavior, national efforts to reduce disparities in foster care have possibly contributed the noted decline. For example, a series of pieces of federal legislation (e.g., Multiethnic Placement Act of 1994, Family First Prevention Services Act of 2018) have supported a national shift in foster care system priorities to focus on reunification between children and families of origin. Additionally, state legislatures have taken responsibility to reduce racial disparities in the foster care system—specifically, 29 bills in 19 states (NCSL, 2021). Given that children of color are most likely to run away from foster care, the steady decline in running behavior may be a product of efforts to reduce racial disproportionalities.

5.1. Limitations and areas of future research

While the present research provided a much-needed update to the prior national-level research on running away from foster care, several limitations should be noted. First, the AFCARS consists of administrative data collected from 50 individual states and the District of Columbia and thus is vulnerable to inconsistencies in the definitions used and differences in standards for collection and measurement across state systems. The very nature of such a large data collection effort comes with risks for untraceable variation and potential errors. For instance, there were some abnormally high values on certain variables; however, consultation with the statisticians at NCANDS indicated that these outliers should be accepted as true values. It is worth noting that we conducted sensitivity analyses to ensure that these few outliers did not impact the presented estimates. Second, these data reflect a point-in-time count of profiles for children in foster care. In other words, these data do not represent every instance of running away for every child in foster care annually, and thus provide a conservative estimate of the true scope of this issue. In this regard, these data do not allow for the tracking of a child's prior history of running away, nor does it include potentially important risk factors such as the placement setting

from which a child ran away or LGBTQ+ identity. In addition, these data do not allow for a direct test of *why* children had run away from care, and relatedly, why the rates of running from care declined. Longitudinal analysis of children who run away from foster care is a critical area for future research but will require changes to how the AFCARS data is collected and reported. In addition, further analysis of the impacts of efforts to reduce racial disparities in foster care on running away from care is sorely needed, as children of color are most likely to run from care. Understanding the contextual reasons that predict running away are paramount to developing effective prevention and intervention programming.

Finally, the AFCARS data only identifies children as having run away (i.e., as one of the AFCARS placement settings). There is no distinction for children who are "missing from care" (i.e., the youth has been reported as a missing person) even though it seems unlikely that the reason or reasons a child is not present in placement is often known, i.e., that they ran away. This distinction as a runaway rather than a missing child minimizes the role of individual foster caretakers and the larger system regarding the supervision and welfare of children in foster placements and likely mischaracterizes the context in which many children leave or are forced from their placements (e.g., due to violence or victimization, coercion by predatory adults) (Lacey, 2019). Further, children labeled as a "runaway" are at risk for delinquency status and involvement in the youth justice system which may have a host of negative consequences and ripple effects (Lacey, 2019). Future research must focus on how and when a child is identified as a missing person rather than a runaway and whether and how this distinction is made in administrative records. Given the limitations of current data systems it is impossible to know the scope of missingness among children in foster care. Finally, research focusing on missing persons has found that American Indian/Alaska Native and African American youth are at particular risk of going missing (Richards, Wright, Nystrom, Gilbert & Branscum, 2021). Given the disproportionate involvement of children of color as both foster children (U.S. Department of Health and Human Services, 2018) and children who have run away from foster care, future research must consider the role of system involvement in research on missingness among children and the implications for prevention and intervention (see Nystrom et al., 2022).

5.2. Policy implications

Despite these limitations, there are six important policy implications for foster care services, practitioners, and researchers. First, the present analysis shows that of the variables examined, racial identity is the strongest predictor of running away from foster care with African American and Hispanic youth at particular risk for running behavior. These findings must be considered within the larger context of foster care experiences for children of color. Prior research shows that children of color are disproportionately involved in the foster care system (Dworsky et al., 2018; Wulczyn, 2020) and are often removed from their families of origin due to behaviors deemed to be neglectful such as inadequate nutrition or housing (U.S. Department of Health and Human Services, 2018). However, these neglectful behaviors are also synonymous with poverty suggesting that families may be better served by supportive services rather than removals. Second, prior research shows that African American children are overrepresented in group homes and institutions rather than family foster homes (Biehal & Wade, 2000), which may at least partially explain the current findings as children are more likely to run from group homes (Nystrom et al., 2022). Likewise, most foster caregivers are White and thus it is likely that even when children of color are placed in family foster homes, they are placed with caregivers of different racial and/or ethnic identities which may negatively impact the caregiver's ability to serve the child in a culturally competent way (Courtney et al., 2005; Iglehart, 1994). Taken together, policies that address the disproportionate representation of children of color in foster care as well as their disparate representation in group settings and with foster families that have different racial/ethnic identities will also likely address disproportionate rates of running away among children of color.

Foster care services should take time early on to identify the reasons why a child might run away from foster care placement and provide preventative intervention measures. As noted by Lin (2012) older children are more likely to know how to run and where to go. In addition, children who are older when they enter foster care have likely enjoyed significant autonomy in their families of origin and may have served as the caretaker for siblings or other family members. As such, new rules in a foster care setting limiting where they can go, when, and with who are often met with resistance (see Courtney et al., 2005). Further, adolescence is a time when individuals begin to assert their autonomy and question rules and authority. Thus, making adolescents an active part of placement decisions as well as negotiating placement plans regarding rules and responsibilities (e.g., curfews, chores) with the child and caregiver will likely reduce the likelihood of running away (see Clark et al., 2008; Michael, 2005).

Fourth, and relatedly, factors that are predictive of running away have been contextualized in the literature as *running to* and *running from* behaviors. Courtney et al. (2005) cite those children leave placements because they are running *to* families of origin, friends, and romantic partners. In this regard, it is unsurprising that children were more likely to run away when removed from single-parent households of origin compared to dual-parent households (Lin, 2012). One reason for this is the child may fill a caretaker role to their sole parent or a sibling(s). Although these data did not allow for examination of siblings and separation from siblings, prior research shows that children in foster care who remain with siblings are less likely to run from care (Courtney et al., 2005). Placing siblings together when possible and helping to maintain children's relationships with their families of origin may reduce running behavior. Further children were more likely to run away when the reason they were removed cited neglect, child substance abuse, child behavior problems, and abandonment which could be due to combination of *running to* and *running from* behaviors that contextualize their rationale for leaving care (Courtney et al., 2005; Crosland, Joseph, Slattery, Hodges & Dunlap, 2018; Finkelstein et al., 2004). Thus, ensuring that caretakers are adequately trained to support children with substance abuse and/or mental health challenges and providing supportive services to children who are most at-risk should reduce running from care.

Lastly, the AFCARS data does not distinguish children who "runaway" and children who are "missing from care," which is problematic because there is no way to know, prospectively, if leaving care was done so on their own or under the influence or harm of

another. Put another way, this process assigns a status offense to children whose motivations for not being present in their foster placement are unclear. Subsequently, assigning a runaway status obscures important placement-level and systemic-level factors that underpin why the child is not present in their foster placement (e.g., trafficking, abuse, leaving to unite with parents or siblings) and may have ripple effects for the child regarding the youth justice system.

6. Conclusion

Considering the limited research on the prevalence and predictors of running behavior among children in foster care, the current study provides a 10-year updated examination using national data on foster-care involved children. In this regard, the prevalence of children running from care has steadily declined since Lin's (2012) prior analysis of 2009 data. Further, there was relative stability in the predictors of running behavior across the 10-year study period, with few notable exceptions. Importantly, racial identity remained the strongest predictor of running away from foster care, with African American and Hispanic children experiencing the highest risks; child substance use was also a consistent and strong predictor of running from care. In light of prior research contextualizing why children run from foster care as well as emerging research on the prevalence of youth of color (Richards et al., 2021) and youth of color in foster care among missing persons cases (Nystrom et al., 2022), future research and practice would be likely better served by shifting terminology from children who are "run aways" to those who are "missing from care".

Declaration of competing interest

The authors have no conflict of interests to declare.

Acknowledgements

None.

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