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Race/ethnicity and running away from foster care

Fred Wulczyn

Center for State Child Welfare Data, Chapin Hall, University of Chicago, United States

ABSTRACT

Running away from foster care is fairly common, but there is no body of research that explores explicitly the question of whether Black and Hispanic youth run away from foster care at rates that are different from those for White youth. Using data from 17 states, I measured the probability of running away from foster care for Black, Hispanic, and White youth. This approach yields an unambiguous measure of disparity based on the odds ratio, a standard measure for summarizing group differences. In addition to individual differences in rates of running away (e.g., age, gender, race/ethnicity), I was also interested in knowing whether context matters. Context was measured at the county-level using urbanicity, social disadvantage, and a system-level measure of congregate care utilization. I also included whether the state where the county was located had policies that require an assessment of running-away risk. Older youth, girls, and youth with a history of placement in congregate care all have higher rates of running away. Further, Black and Hispanic youth are more likely to run away than White youth, but the magnitude of those differences depends on context. In particular, as measured, disparity in counties where I detected a tendency to use congregate care as a county-level attribute, disparity was greater. Among the implications, better reporting of running away by the federal government is highlighted. Regarding contextual effects and the dynamics of congregate utilization, the results point toward system effects as an important avenue for future research.

1. Introduction

In this paper I examine the risk of running away from foster care, with special emphasis on differences related to race and ethnicity. Running away from foster care is fairly common, but there is no body of research that explores explicitly the question of whether Black and Hispanic youth run away from foster care at rates that are different from those reported for Whites. Young people run away to be with family, to be with friends, or to access drugs and alcohol (Crosland & Dunlap, 2015), but running away from foster care exposes young people to risks such as increased delinquency and trafficking, food insecurity, and problems in school (Crosland & Dunlap, 2015; Finkelstein et al., 2002; Morewitz, 2016). Given the exposure to these other risks, it is important to know who runs away and whether Black and Hispanic youth are more likely to do so than White youth. If that is indeed the case, then the burdens of having run away only add to the substantial disadvantages already facing Black and Hispanic youth.

In addition to knowing whether Black/White and Hispanic/White disparities are observable, I am also interested in whether disparity rates vary. Although it is important to understand the level of disparity as a general matter, it is perhaps more important to understand whether disparity rates depend on attributes of the population being studied, attributes of a young person's placement history, or, in this case, attributes of the county where the young person was living when they entered care. For example, running away may be more common among Black youth than White youth, but should I expect the level of disparity to be the same for Black females and White females as it is for Black males and White males? Or, should I expect the disparity rate to differ depending on whether the county is an urban county or a rural county given that the racial/ethnic composition of urban child welfare populations differs from the populations found in rural counties? Answers to these questions would likely help public agencies and their partners target their efforts to reduce running away and undo any underlying disparities.

To address these questions, I develop a series of descriptive analyses that start with simple tables that show the risk of running away by race/ethnicity, age, and gender. From these data, I construct the corresponding odds ratios. These odds ratios serve as the measure of disparity, as is customary (Braveman, 2006). I then expand the descriptive analysis by including placement history and county as attributes linked (potentially) to the risk of running away. As each new dimension is added to the analysis, I am interested in assessing whether the Black/White and Hispanic/White disparity rates differ from the overall disparity rate. For the final step, I assess whether the subgroup differences are statistically significant. To do this, I apply generalized linear models using whether or not a child ever ran away from foster care as the binary dependent variable.

2. Prior research

With regard to young people placed in foster care, the evidence suggests that running away is fairly common, although precise measures of incidence are relatively hard to find. According to a report published in 2017, just 1 percent of the 437,465 children in foster care

E-mail address: fwulczyn@chapinhall.org.

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on September 30, 2017 were in what is described as a runaway placement setting (Children's Bureau, 2017). However, that point-in-time count (i.e., prevalence) is a low estimate of the prevalence rate because it excludes young people who ran away at some point during the year and returned to care before September 30th. Moreover, the denominator includes *all* children in care. Given that the young people most likely to run away are between the ages of 12 and 17, the national prevalence estimate, based on federal statistics, is undoubtedly much higher.

Simple incidence rates that report the number of children who enter care and then go on to run away at least once are harder to find. Dworsky et al. (2018) report that 17 percent of their sample of young people admitted to care between the ages of 13 and 17 were reported to have run away at least once. There are other estimates that speak to how often young people run away, but they tend to focus on specific sub-populations. For example, in the Midwest Study of Youth Aging Out, nearly 46 percent of the 17-year olds in the sample reported having run away (Courtney et al., 2004). That is a startling figure but it excludes younger teens who are less likely to run away. Biehal and Wade (2000) reported rates of unauthorized absence, which includes running away, that were as high as 71 percent among 11 to 16-year olds. However, it is not clear whether the reported rate refers to a group of young people in care or a group of young people who were followed prospectively after entry into care. Fasulo et al. (2002) did follow young people from admission onward but only *after* they were placed in Specialized Foster Care. Of those young people, 44 percent ran away, but again, the group studied is a high-risk group. Sunseri reported rates of running away in his sample of 33 percent; Attar-Schwartz (2013) found that 44 percent reported running away at least once; Baker et al. (2005) found that 14 percent left care because they ran away, a figure that does not include children who ran away from care but returned. All three of those studies focused on young people placed in residential care.

Because the aforementioned studies focus on slightly different sub-populations, it is difficult to draw clear inferences regarding youth-specific risks. Nonetheless, patterns that speak to who is more likely to run away from care do emerge from the extant literature. The most persistent findings pertain to gender, age, and placement history. Girls were more likely to run away than boys (Courtney & Zinn, 2009; Dworsky et al., 2018; Fasulo et al., 2002; Lin, 2012; Miers et al., 2018); older children (e.g., 15 and above) are more likely to run away than children between the ages of 10 and 14 (Courtney & Zinn, 2009; Dworsky et al., 2018; Eisengart et al., 2008; Lin, 2014; Nesmith, 2006); and children with repeated movements between placements (i.e., placement instability) including placement in some sort of group or congregate care are also more likely to run away (Courtney & Wong, 1996; Lin, 2012). In addition to placement in group settings, time in care has been shown to alter the probability of running away, although the findings are somewhat mixed. Nesmith (2006) found a rising probability with the passage of time in care whereas Courtney and Zinn (2009) and Baker et al. (2005) reported rates of running away that were initially higher (soon after placement), declined, and then increased among the population still-in-care after some period of time.

One other reason it is hard to draw clear inferences with regard to the risk of running away has to do with measurement and whether to count temporary runs, runs that represent an exit from the system, or both. Witherup et al. (2008) used the any run definition; Fasulo et al. (2002) made the distinction between temporary runs and permanent runs, with the former representing absences of less than two weeks followed by a return to care and the latter referring to runs that are tantamount to having left care because of running away. Dworsky's definition (2018) included both temporary and permanent runs to borrow terminology used by Fasulo et al. (2002); Wulczyn et al. (2017) used only permanent runs in their study. Courtney and Zinn (2009) defined running away as absences of at least one night.

Given the more general attention paid to issues of disparity in the child welfare system over the past decade or more (Drake et al., 2011, 2009; Drake & Jonson-Reid, 2010; Fluke et al., 2011; Hill, 2006; Lanier et al., 2014; Maguire-Jack et al., 2015; Wulczyn et al., 2013), the research on running away is oddly silent on whether Black and Hispanic adolescents are at greater risk than White adolescents. Eisengart et al. (2008) and Sunseri (2003) did not consider race or ethnicity. Nesmith (2006) reported no differences for African Americans when compared with Caucasians but found that American Indian youth [sic] are more likely to run away than Caucasians. Fasulo et al. (2002) also found no Black/White disparity. Others *have found* that Black and Hispanic youth were more likely to run away from foster care than White youth. For example, Courtney and Zinn (2009) estimated the increased hazard of the first run was about 30 percent higher for Blacks than Whites. The comparable figure for Hispanics relative to Whites was 24 percent. Lin (2012) found slightly larger effects for Black youth relative to White youth. Dworsky et al. (2018) reported that the odds of running away were about 31 percent higher for both Blacks and Hispanics than Whites. Biehal and Wade (2002) also found a higher rate of running away among Black youth, which they attributed to their over-representation in congregate care, but the statistical evidence for that connection is a bit unclear judging from the published reports.

In summary, running away has deleterious consequences for those who do run away and there is some evidence, albeit inconsistent evidence, that Black youth are more likely to run away than White youth. The question of running away and disparity has received far too little attention, a limitation of the current literature that this study addresses, if only in a preliminary manner.

3. Present study

I build on the research that has been done in the following ways. First, I follow children from the time they enter out-of-home care for the first time until they leave that out-of-home care spell. Thus, I follow young people prospectively, a perspective that yields a more straightforward measure of incidence than studies generally offer. Second, rather than focus on certain types of placement (i.e., foster family care, kinship care, or residential care), I include all types of placements, which provides a global incidence rate that is then adjusted for a set of other relevant factors such as age, race/ethnicity, and placement history. Third, with regard to how I counted running away, I followed the lead of Fasulo et al. (2002) and considered both temporary and permanent runs, an approach that indicates whether the young person ran away without regard to the type of run. Fourth, most of the research cited is focused on the characteristics of children and their families as risk and protective factors that explain relative rates of running away. In contrast, Eisengart et al. (2008), Attar-Schwartz (2013), Courtney and Zinn (2009) and Dworsky et al. (2018) considered context, which is a more expansive view of potential risk factors. For Eisengart and Attar-Schwartz, the context they studied was the private agency with which the child was placed; Courtney and Zinn considered administrative regions in Illinois; Dworsky compared urban and non-urban counties. In each of those examples, the results suggest that the risk of running away is tied to influences embedded in contextual factors and not just individual-level factors that differentiate one group of young people from another. Of course, the idea that individual-level outcomes and disparity are influenced by context lies at the heart of the social determinants literature (Li et al., 2009; Marmot & Friel, 2008; Newman et al., n.d.; Wright et al., 2014; Zimmerman, 2005). Here, I expand the notion of context to include measures of urbanicity (Dworsky et al., 2018), social disadvantage (Wulczyn et al., 2013), and system characteristics (Wulczyn & Halloran, 2017), all of which have been explored previously.

Lastly, I explore Black/White and Hispanic/White disparities in running away. As noted, the results from research on running away vis-á-vis the question of disparity is mixed in part because the question of disparity was not central to the research being done. I aim to fill that void. Accordingly, after the basic groundwork has been put in place, I am interested in two research questions: 1) with regard to running away, what are the Black/White and Hispanic/White disparity rates, and 2) do these disparity rates differ as a function of child characteristics and/or the context where the child was living at the time they entered care? Of the two, the answer to the latter question offers potentially richer policy and practice insights insofar as knowing how disparity varies brings us closer to knowing something about the processes that generate disparity (Knight & Winship, 2013; Neil & Winship, 2019).

4. Data, sample, and variables used in the study

4.1. Data

The data used for the study come from the Foster Care Data Archive (FCDA), which is maintained by the Center for State Child Welfare Data, Chapin Hall, University of Chicago (Wulczyn et al., 1997, 2007; Wulczyn et al., 2017). The FCDA is constructed from the administrative records maintained by states in response to federal reporting requirements. Data sharing agreements are negotiated with each state that sends data to the Center for State Child Welfare data. Rather than use AFCARS files, the raw data are based on person-level records sourced from each state's SACWIS system or its equivalent. The tables received, to the extent possible, come from the source data table. States perform little to no pre-processing of data tables prior to sending them.

Each source record contains a chronological history of placements experienced including whether the young person ran away. Insofar as states do record placement and related events, such as running away differently, the administrative records from these different sources are combined to form a cohesive data set in accordance with a schema developed in cooperation with the states. That is, for each event of interest (placement, discharge reason, etc.), we align (i.e., harmonize) each state's record keeping rules with a common schema that is vetted with each state (Wulczyn et al., 2007).

With respect to whether a young person ran away, states use what might be described as location codes to describe the whereabouts of a child. On any given date, the location code indicates where a child can be found: Is the young person in a placement? Did the young person leave care? If so, did the young person runaway? Those codes are used to ascertain whether a child in foster care was away from placement. I noted absences attributable to a young person having run away using those codes. The start date of the absence was recorded along with the end date of the absence within the context of the all the other placement activity. For example, if a young person ran away and then returned to care (i.e., a temporary run), that young person was counted as having run away. If a young person ran away and never returned to care (i.e., a permanent run), they too were included in the count of young people who ran away. If a young person ran away multiple times, for this analysis, they were counted as having run away once.

4.2. Sample

The sample of young people includes 138,000 children from 17 US states and 1,271 counties in those states. The states represent a demographically diverse collection of states from the northeastern, southern, central, southwestern and western parts of the United States. The states also vary in size. The states were selected for opportunistic reasons. Not all states provide data to the Center for State Child Welfare Data. Of those that do, we were interested in states with valid entry cohort data from 2009 to 2011. We targeted those years because we wanted to minimize right censoring. More recent cohorts provide a contemporary view of running away, but that recency comes with a trade-off. Specifically, newer cohorts would necessarily miss the young people who run away after having been in care a long time. Rather than exclude those young people, we opted for older cohorts in order to minimize the effect of truncation brought about by the shorter window of observation. Of the young people in the study, ninety-nine percent were no longer in care as of December 31, 2018. In addition, those cohort years are well-aligned with the 2010 US census data that was used to describe the level of social disadvantage found in each county.

The sample includes all young people between the admission ages of 10 and 17, inclusive, who entered out-of-home care for the first time between 2009 and 2011. Out-of-home care refers to placements in kinship homes, regular foster care, and congregate care. Congregate care refers to group homes, residential treatment centers, and institutions.

4.3. Dependent variable

The dependent variable is whether, during their first spell of foster care, a child was reported as having run away. A spell of foster care is defined as an entry into and exit from paid out-of-home care. Children in out-of-home care are in the legal custody of the state. A placement spell may have from one to many placements. In addition, a child may run away from care multiple times during a placement spell. According to the schema described above, the dependent variable includes both permanent and temporary runs. A young person could have one to many temporary runs alone or in combination with a permanent run or just a permanent run. I counted either as a run for purposes of the binary dependent variable: ever ran away from care vs. never ran away from care.

4.4. Independent variables

Building on prior research, the study is focused specifically on the question of whether Black, Hispanic, and White youth have differential rates of running away, all other measured characteristics being equal. For child characteristics, I focus on those characteristics shown previously to have a durable connection to whether a young person runs away: age at first or initial admission, gender, and whether the young person was in congregate care during their time in out-of-home care. As noted, congregate care refers to group homes, residential treatment centers, and institutions. Congregate care placement is coded as a binary variable where 1 inidcates the child was in congregate care at some point during their time in foster care and 0 indicates no history of congregate care placement.

In addition to child characteristics, I examine whether county context is linked to running away. Geography and running away have been explored previously (Courtney & Zinn, 2009) but the question of why running away might be higher in some places than in others is an issue that is largely untouched. To address context more directly, I measure county context in three ways. The first measure considers urbanicity. I use the National Center for Health Statistics (NCHS) classification system (Ingram & Franco, 2014), which stratifies counties into six categories. I collapse the six into three: large urban core counties, other urban counties, and rural counties. In addition to urbanicity, I also differentiate counties on the basis of their ecological context. To do this, I construct an index that captures where the counties fall relative to their state on four measures taken from the 2010 census: percent of the child population living in poverty, percent of families with children headed by females, percent of the adult population with less than a high school education, and percent of the population unemployed. Rather than enter attributes of the population into the model separately, I constructed a simple index constructed around each state mean. Counties above or below the mean with respect to a given measure were assigned a binary value of 1 if above the mean and a zero if below the mean. Summed across the indicators the index takes a value of 4 if on each of the measures the county was above the mean and 0 if on each of the measures the county was below the mean. Index values of 1 through 3 are indicative of more diverse social ecological contexts. The index is used to avoid the collinearities that exist between county-level measures of child poverty, unemployment, family structure, and adult education levels (Dworsky et al., 2018; Wulczyn et al., 2013).

As the third attribute of county context, I included a binary indicator that measures whether, based on the history of congregate care utilization at the county-level, there is evidence that the supply of congregate care (i.e., beds) is linked to congregate care utilization. In health services research, the supply/demand dynamic is referred to as supply induced demand elasticity (Delamater et al., 2013; Gooch & Kahn, 2014). In essence, supply-induced demand elasticity refers to a tendency to fill the beds that are available. This is also known as the *Roemer Effect* (Delamater et al., 2013; Roemer, 1961)

To measure the influence of bed supply on congregate care utilization, I calculated the correlation between the number of children admitted to congregate care each week and the number of children discharged from congregate care each week over 700+ weeks in each of the 1271 counties used for the analysis. Recent research suggests that when admissions and discharges to congregate care follow one another closely over time, there are system-level effects at work that connect the utilization of congregate care to the supply of beds (Tuma & Hannan, 1984; Wulczyn, 1996; Wulczyn & Halloran, 2017). Here, I regard the influence of supply on utilization as a macro-level influence that affects whether a young person, over and above their person-level characteristics, will be placed in congregate care.[1] Having measured the weekly admission/discharge correlation, I then differentiate counties based on whether the correlation coefficient was statistically significant. In counties with a statistically significant correlation, I say that this macro influence (i.e., the entry/exit dynamic) is strong; where the coefficient is not significant, I simply say that the macro influence has no effect on utilization.

Finally, I also placed each county in its state policy context. For this, I reviewed state statutes and regulations for evidence of state policies meant to regulate running away. Although I assembled a substantial digest of state policy, for this study I focused on whether states explicitly identified requirements pertaining to an assessment of risk relative to running away (Dworsky et al., 2018). When reviewing statutory and/or regulatory language, I looked for language that mentioned the use of a risk assessment at the time a young person enters care. The language could have mentioned either an assessment or a screening for risk. I also looked for language indicating a preference for a specific assessment tool. However, this analysis focuses on whether an assessment was mentioned in state policy documents: yes or no.

5. Statistical model

To analyze the data, I use a series of generalized linear models with a binary dependent variable: did the young person run away during the first episode temporarily, permanently, or both (1 = yes)? Following the style of Raudenbush and Bryk (2001), I show the models used for the analysis in their hierarchical form, starting with the simplest model:

$$\eta_{ij} = \gamma_{00} + \gamma_{10} * \text{Black}_{ij} + \gamma_{20} * \text{Hispanic}_{ij} \tag{1}$$

where n_{ij} is the log transformation of the odds of running away. The odds of running away are given as the (P/1-P), where P is the probability of running away. Race/ethnicity is recoded into three 0/1 variables where 1 equals Black, Hispanic, or White. Given the model 1 structure, the intercept γ_{00} refers to the log odds a White youth will run away. Setting Black$_{ij}$ to 1 and Hispanic$_{ij}$ to 1 provides the change in the odds of running away attributable to Black and Hispanic youth, respectively. Alternatively, if I drop the intercept, as in model 2, then γ_{10}, γ_{20}, and γ_{30} refer to the odds of running away for White, Black, and Hispanic youth, respectively.

$$\eta_{ij} = \gamma_{10} * \text{White}_{ij} + \gamma_{20} * \text{Black}_{ij} + \gamma_{30} * \text{Hispanic}_{ij} \tag{2}$$

Measured as the ratio of two odds, the Black/White disparity is (γ_{20}*Black$_{ij}$/γ_{10}*White$_{ij}$); (γ_{30}*Hispanic$_{ij}$/γ_{10}*White$_{ij}$) is the Hispanic/White disparity rate. As I will show, the ratio of the odds from Eq. (2) are identical to γ_{10} and γ_{20} from Eq. (1).

In model 3, adding gender and age to Eq. (1) adjusts the interpretation of γ_{00} as follows. With *Male$_{ij}$*, *Black$_{ij}$*, *Hispanic$_{ij}$*, and *Age 16-17$_{ij}$* set to zero, γ_{00} refers to the odds of running away for White females under the age of 16 at the time of admission. With *Black$_{ij}$* and *Hispanic$_{ij}$* set to one and *Male$_{ij}$* and *Age 16-17$_{ij}$* set to zero, the disparity ratio for Black females under the age of 16 at admission relative to the age-comparable group of White females is $(\gamma_{00} + \gamma_{20})/\gamma_{00}$.

$$\eta_{ij} = \gamma_{00} + \gamma_{10} * \text{Male}_{ij} + \gamma_{20} * \text{Black}_{ij} + \gamma_{30} * \text{Hispanic}_{ij} + \gamma_{40} * \text{Age } 16 - 17_{ij} \tag{3}$$

The subscript ($_j$) in models 1 through 3 refers to the county where the young person was living when they entered care. For reasons laid out by Raudenbush and Bryk (2001) and others, it is important to take this nested structure of the data into account for two reasons. First, young people placed in one county are more similar to each other than they are to young people placed in other counties. For instance, family courts typically operate at the county-level so there may be unobserved differences in who is placed into care that are correlated with running away. Secondly, the counties differ in size. If county size is correlated with other variables in the model, then the extra weight given to those counties will unduly influence the fixed effects parameters without adjustment.

The hierarchical (or multilevel) model structure manages both of these issues. Again, following the standard treatment found in Raudenbush and Bryk, the hierarchical model is shown in Eq. (4). As before the η_{ij} is the log odds of running away from foster care. With males, Black, Hispanic, and Age 16–17 all set to 0, β_{0j} is the log odds a White female admitted to care before their 16th birthday from county (j) will run away. In addition, β_{0j} is allowed to vary by county as shown in the level-two model. Specifically, the level one intercept (an outcome at level 2) is a function of the grand mean rate of running away γ_{00} plus the county-level deviations from the mean (u_{0j}). The other coefficients (Male, Black, Hispanic, and Age) are fixed effects. According to Merlo et al. (2016), u_{0j} quantifies the variability in the unobserved influences on running away common to people who were living in the same county at the time of placement. An added benefit of u_{0j} is that it reduces the influence of large and/or small counties in terms of how much information they contribute to the model (Merlo et al., 2016). Model 4 is also known as a random intercept model. β_{2j} and β_{3j} represent the *adjusted disparity rate* given gender and age and the nested structure of the data.

Level-one model:

$$\eta_{ij} = \beta_{0j} + \beta_{1j} * (\text{Male}_{ij}) + \beta_{2j} * (\text{Black}_{ij}) + \beta_{3j} * (\text{Hispanic}_{ij}) + \beta_{4j} * (\text{Age } 16 - 17_{ij}) \tag{4}$$

Level-two model:

[1] The idea of a macro-level influence on what are normally seen as micro-level phenomenon (i.e., the decision to place a young person in congregate care) may need further explication. How is it that something unseen in the moment influences decision-making? Gravity provides a useful analog. The choices any one individual makes with respect to moving about a room are constrained by gravity. So embedded in our thinking is gravity, that we barely give it a moment's thought. Yet, each of us is constrained by gravity even though our individual differences (stride, leg strength) induces variation in how we approach the challenge of getting from one side of a room filled with obstacles to the other.

$\beta_{0j} = \gamma_{00} + u_{0j}$;
$\beta_{1j} = \gamma_{10}$;
$\beta_{2j} = \gamma_{20}$;
$\beta_{3j} = \gamma_{30}$;
$\beta_{4j} = \gamma_{40}$

Model 4 can be extended in two additional ways. Adding characteristics of the counties at level two points to the possibility that between county variation in rates of running away is influenced by county attributes. For example, in the analysis of running away, I am interested in whether the rate of running away is higher in urban counties as opposed to rural counties. Adding an indicator variable (large urban core counties = 1) indicates whether the level one intercept is a function of the grand mean (γ_{00}), whether the county is urban, and county specific deviations from the overall mean (u_{0j}). Put another way, β_{0j} is the adjusted risk of running away for white females under the age of 16 in urban counties when the other factors are set to zero.

Level-one model:

$$\eta_{ij} = \beta_{0j} + \beta_{1j} * (\text{Male}_{ij}) + \beta_{2j} * (\text{Black}_{ij}) + \beta_{3j} * (\text{Hispanic}_{ij}) + \beta_{4j} * (\text{Age } 16 - 17_{ij}) \tag{5}$$

Level-two model:

$\beta_{0j} = \gamma_{00} + \gamma_{01} * (\text{URBAN}_j) + u_{0j}$;
$\beta_{1j} = \gamma_{10}$;
$\beta_{2j} = \gamma_{20}$;
$\beta_{3j} = \gamma_{30}$;
$\beta_{4j} = \gamma_{40}$

Lastly, a random slope model adds a random term to the slope, in this case, the slope corresponding to β_{2j}, which represents the difference between Black females under age 16, White females under age 16, and their rates of running away, if the other covariates in the model are set to zero. Model 6 includes URBAN as a covariate which suggests that the relative rate of running away for Black youth (the slope) is a function of the average rate of running away among Black youth, whether the county is a large urban core county and the unobserved county-specific deviations.

Level-one model:

$$\eta_{ij} = \beta_{0j} + \beta_{1j} * (\text{Male}_{ij}) + \beta_{2j} * (\text{Black}_{ij}) + \beta_{3j} * (\text{Hispanic}_{ij}) + \beta_{4j} * (\text{Age } 16 - 17_{ij}) \tag{6}$$

Level-two model:

$\beta_{0j} = \gamma_{00} + \gamma_{01} * (\text{URBAN}_j) + u_{0j}$;
$\beta_{1j} = \gamma_{10}$;
$\beta_{2j} = \gamma_{20} + \gamma_{21} * (\text{URBAN}_j) + u_{2j}$;
$\beta_{3j} = \gamma_{30} + \gamma_{31} * (\text{URBAN}_j) + u_{3j}$;
$\beta_{4j} = \gamma_{40}$

Substantively, it is important to consider the interpretation of model 6 given the research questions. In the hierarchical form, each level one coefficient becomes an outcome at level two. Given that β_{2j} and β_{3j} represent the disparity in rates of running away for Black youth and Hispanic youth relative to White youth, γ_{io}, γ_{i1}, and u_{ij} represent adjustments to the Black/White, Hispanic/White disparity rates attributable to characteristics of the county and unobserved differences.

6. Results

Using those statistical models, I answer two basic questions: are Black and Hispanic youth more likely to run away than White youth and to what extent do county level differences correlate with running away and the observed levels of disparity. To frame the answers to these questions, I start with basic descriptions of the sample of children included. Two views of the population are provided. The first shows the rates of running away by race/ethnicity, gender, and age at admission together with a set of county characteristics that include: urbanicity, social ecology, the entry/exit dynamic, and a policy variable that captures whether the county is in a state that requires an assessment that rates a young person's risk of running away.

The second view of the sample shows how the children placed in counties differ by the racial and ethnic make-up of the placed population. This latter view is important because, as I show, the make-up of urban foster care populations is different than the make-up of non-urban foster care populations with respect to race and ethnicity. If rates of running away are higher in urban areas, then the composition of the caseload has to be taken into account when judging running away and disparities based on race and ethnicity overall. The failure to stratify the analysis by geography is analogous to an omitted variable problem in regression models (Neil & Winship, 2019).

Sample characteristics are provided in Table 1 together with the baseline risk of running away measured as whether the young person ran away, either temporarily or permanently, during their first spell of out-of-home care. Regarding child characteristics, the largest group of young people is White youth (42.4%) followed by Black (29.8%) and Hispanic (27.8%) youth. Although Black and Hispanic youth represent smaller proportions, relative to their proportion in the general population, both Black and Hispanic teens are over-represented in the population of youth admitted to foster care in this selection of states. Females make up slightly more than one-half the sample, whereas seventy-five percent of the sample is age 12 to 17, with young people between the ages of 14 and 15, inclusive, representing the single largest group.

Characteristics of the sample by the county where they were living when they were admitted to care are found in the lower panel of Table 1. The NCHS classification shows that 38 percent of the youth come from the large urban core counties. Just under one-in-four youth come from non-urban areas. In total, one-half the children came from counties with either a low or high designation on the composite measure of social disadvantage. Finally, most young people were placed into care from counties in states that have no assessment requirement for either placement in congregate care or for the risk of running away. With respect to congregate care entry/exit dynamics, young people placed in congregate care tend to come from counties where there is some evidence of an entry/exit dynamic (75%).

As for the risk of running away and child characteristics, the findings follow what others have reported. Specifically, both gender and age are strongly associated with running away: females and older teens (14 & 15 and 16 & 17-year olds) are all more likely to run away than other youth. Table 1 also provides the first indication that in this sample, Black and Hispanic youth (13.8 percent and 11.5 percent respectively) are more likely to run away than White youth (7.8%). These figures form the basis for the analysis of disparity that follows. Insofar as disparities based on race and ethnicity have been reported before, these findings do not stand apart per se but for the fact that I am using a uniform definition of running away across multiple jurisdictions. As such, these findings add merit to what has been previously reported.

Running away as a function of county characteristics have generally not been studied, so the findings here are somewhat more novel. Rates of running away are higher among young people who come from the large urban core counties than in either other urban counties or rural counties. With respect to young people in the latter category, they are less than half as likely to run away. Rates of running away are highest among the young people who were living in the most disadvantaged counties. In the counties that require assessments pertaining to the need for congregate care and/or the risk of running away, rates of running were lower, which is in the direction one might expect. Congregate care entry/exit dynamics also appear to play a role. In counties with a strong

Table 1
Children admitted to foster care by child and county characteristics and runaway status: 2009–2011.

Child and County Characteristics	Sample Proportion	Runaway - Number			Runaway - Percent		
		No	Yes	Total	No	Yes	Total
Child Characteristics							
Race/ethnicity							
White	42.4%	54,242	4,585	58,827	92.2%	7.8%	100.0%
Black	29.8%	36,641	4,766	41,407	88.5%	11.5%	100.0%
Hispanic	27.8%	33,305	5,323	38,628	86.2%	13.8%	100.0%
Gender							
Female	53.3%	65,538	8,499	74,037	88.5%	11.5%	100.0%
Male	46.7%	58,650	6,175	64,825	90.5%	9.5%	100.0%
Age at admission							
10	12.7%	17,450	124	17,574	99.3%	0.7%	100.0%
11	11.8%	16,127	316	16,443	98.1%	1.9%	100.0%
12 & 13	25.2%	32,556	2,446	35,002	93.0%	7.0%	100.0%
14 & 15	28.3%	33,116	6,229	39,345	84.2%	15.8%	100.0%
16 & 17	22.0%	24,939	5,559	30,498	81.8%	18.2%	100.0%
County Characteristics							
Urbanicity							
Urban core	38.3%	45,592	7,584	53,176	85.7%	14.3%	100.0%
Other urban areas	38.7%	48,785	5,000	53,785	90.7%	9.3%	100.0%
Non-urban areas	23.0%	29,811	2,090	31,901	93.4%	6.6%	100.0%
Social Disadvantage							
Lowest	25.0%	31,060	3,642	34,702	89.5%	10.5%	100.0%
1	11.7%	14,801	1,457	16,258	91.0%	9.0%	100.0%
2	15.4%	19,563	1,857	21,420	91.3%	8.7%	100.0%
3	22.1%	28,052	2,648	30,700	91.4%	8.6%	100.0%
Highest	25.8%	30,712	5,070	35,782	85.8%	14.2%	100.0%
Run Away Risk Assessment							
No	73.4%	90,351	11,533	101,884	88.7%	11.3%	100.0%
Yes	26.6%	33,837	3,141	36,978	91.5%	8.5%	100.0%
Entry/Exit Dynamic							
No effect	24.1%	31,651	1,776	33,427	94.7%	5.3%	100.0%
Strong effect	75.9%	92,537	12,898	105,435	87.8%	12.2%	100.0%
Total Children	100%	124,188	14,674	138,862	89.4%	10.6%	100.0%

entry/exit dynamic, rates of running away are substantially higher. Whether these latter differences are because the states with those policies tend to be larger is an issue taken up in the next section.

One reason why county characteristics are an important feature of this analysis has to do with the racial and ethnic make-up of the youth entering care given the county where they were living at the time of placement. At the extreme, if all children entering care in urban counties are 16 and 17-year olds and all children entering care in non-urban counties are 12 and under, I have to ask whether running away has to do with the urbanicity or age. In this simple example, the urban-rural difference is a by-product of age differences in the children placed.

Table 2 puts the children entering care into their county context. As might be expected, 78 percent of the population who entered care from the urban core counties were either Black or Hispanic youth. In non-urban counties, 72 percent of the children entering care were White youth. In the other urban category, the foster care population is evenly divided. One-half the population was split evenly between Black and Hispanic youth; the other half was White youth. These compositional differences are important because of what each county type contributes to the overall estimate of disparity. In the case of non-urban counties,

Table 2
Children admitted to foster care by county characteristics and race/ethnicity.

County characteristics	Number				Percent			
	Black	Hispanic	White	Total	Black	Hispanic	White	Total
Urbanicity								
Urban core	18,712	22,909	11,555	53,176	35.2%	43.1%	21.7%	100.0%
Other urban areas	16,956	15,780	32,648	65,384	25.9%	24.1%	49.9%	100.0%
Non-urban areas	2,960	2,718	14,624	20,302	14.6%	13.4%	72.0%	100.0%
Social Disadvantage								
0 - Low	7,403	10,913	16,386	34,702	21.3%	31.4%	47.2%	100.0%
1	3,904	2,407	9,947	16,258	24.0%	14.8%	61.2%	100.0%
2	5,740	4,976	10,704	21,420	26.8%	23.2%	50.0%	100.0%
3	7,540	11,465	11,695	30,700	24.6%	37.3%	38.1%	100.0%
4 - High	14,041	11,646	10,095	35,782	39.2%	32.5%	28.2%	100.0%
Runaway Risk Assessment								
No	23,201	30,274	31,817	85,292	27.2%	35.5%	37.3%	100.0%
Yes	15,427	11,133	27,010	53,570	28.8%	20.8%	50.4%	100.0%
Entry/Exit Dynamic								
No effect	5,756	4,328	23,343	33,427	17.2%	12.9%	69.8%	100.0%
Strong effect	32,872	37,079	35,484	105,435	31.2%	35.2%	33.7%	100.0%
Total	38,628	41,407	58,827	138,862	27.8%	29.8%	42.4%	100.0%

nearly three-quarters of the young people coming into care in those counties are White but all children from those counties only make up 23 percent of the total sample.

As for the other county characteristics, Black and Hispanic youth represent larger proportions of the population in counties where the level of social disadvantage is high (39.2% and 32.5% respectively) whereas White youth are the largest group in the counties with low social disadvantage (47.2%). The counties in states with policies that call for the assessment of the risk of running away, the population of Black and Hispanic youth entering care was, on the whole, smaller than the White population. Finally, White youth constituted about 70 percent of the youth entering care in counties where the entry/exit dynamic could not be detected as compared to just 34 percent in counties where the entry/exit dynamic was more apparent.

6.1. Disparities in running away

The central question guiding this research has to do with whether running away from care is more common among Black and Hispanic youth than White youth. In Table 1, I established the fact that Black and Hispanic youth are more likely to run away. In this section and the one that follows, I convert those differences into odds ratios (i.e., disparity rates). In addition, I explore the extent to which the odds ratios vary based on characteristics of the youth placed in care, their placement history, and the county where they were living when they entered care. I did this to understand whether there is a single average rate that describes disparity regardless of the sub-population or where the young person entered care. Table 3 shows these results.

The odds of running away are 1.89 higher for Black youth than White youth; the comparable figure for Hispanic youth is 1.54. With that said, there is notable variation based on age and gender. For example, Black females under the age of 15 are more likely to run away than White females of the same age. Hispanic females in this group are, likewise, relatively more likely to run away than their White counterparts.

At the other end of the age/gender continuum, disparity rates are smaller for Black and Hispanic males between the ages of 16 and 17. Compared to the average disparity rate of 1.89 derived from comparing all Black youth with all White youth, the disparity rate for older Black males compared to White males of the same age is 1.47. Although 1.47 represents a noteworthy difference in the risk of running away, the disparity rate for this group is 28 percent lower than it is for the population as a whole. In sum, even though the rate of running away is lower, disparity rates are generally higher for youth between the ages of 10 and 15 and especially so for females. Among older youth, disparity also tends to be smaller for females.

Table 3 also shows the disparity rates for young people who either did or did not experience a placement in congregate care. Among young people without a history of congregate care placement, the rates of running away are generally much lower but the Black/White difference (2.45 vs. 1.89) is larger. The same is true for Hispanic/White difference (1.76 vs. 1.54). For young people with a history of congregate care placement, the differences are mixed. The Black/White disparity rate is 1.62, which is lower than the population-level disparity rate. For Hispanic youth the disparity rate is somewhat higher (1.69). Again, the gap narrows, in the case of congregate care because, although young people with no history of congregate placement are less likely to run away than young people who did get placed in congregate care, the age composition of the underlying populations is different. This finding is at odds with Biehal and Wade (2002).

Next, I implement the hierarchical models outlined in the methods section. I start with the first model described. I do this to highlight a feature of the logistic regression model that is crucial to interpreting the results. In a traditional logistic model with just an intercept, the intercept, when exponentiated and converted into probability, is interpreted as the likelihood of running away. This is seen in the first row of

Table 3
Odds ratios for running away by age and race/ethnicity.

Race/Ethnicity, Age, Gender	Running Away: No	Yes	Odds	Odds Ratio	
White	92.21%	7.79%	0.085		
Hispanic	88.49%	11.51%	0.130	1.54	Hispanic/ White
Black	86.22%	13.78%	0.160	1.89	Black/White
10 to 15 Yr. Female					
White	93.6%	6.4%	0.069		
Hispanic	89.4%	10.6%	0.118	1.72	Hispanic/ White
Black	87.2%	12.8%	0.147	2.14	Black/White
10 to 15 Yr. Male					
White	94.8%	5.2%	0.055		
Hispanic	92.1%	7.9%	0.086	1.56	Hispanic/ White
Black	90.3%	9.7%	0.107	1.95	Black/White
16 to 17 Yr. Female					
White	85.5%	14.5%	0.170		
Hispanic	80.9%	19.1%	0.237	1.40	Hispanic/ White
Black	77.3%	22.7%	0.293	1.73	Black/White
16 to 17 Yr. Male					
White	85.1%	14.9%	0.175		
Hispanic	79.0%	21.0%	0.266	1.52	Hispanic/ White
Black	79.5%	20.5%	0.258	1.47	Black/White
Never Placed – Congregate Care					
White	97.0%	3.0%	0.031		
Hispanic	94.9%	5.1%	0.054	1.76	Hispanic/ White
Black	93.0%	7.0%	0.076	2.45	Black/White
Ever Placed – Congregate Care					
White	86.2%	13.8%	0.160		
Hispanic	78.7%	21.3%	0.270	1.69	Hispanic/ White
Black	79.5%	20.5%	0.258	1.62	Black/White

Table 4 (Intercept Only) under the column heading probability. It matches the probability of running away reported in Table 1 (last row). When the intercept is dropped from the model and replaced with dummy variables for White, Black, and Hispanic (Table 4 – No Intercept), the exponentiated coefficients are transformed into the odds of running away for each group. When those odds are converted into probabilities, the results replicate the probability of running away for White, Black, and Hispanic youth, as can be seen by comparing the results in the second panel of Table 4 with Table 3. Naturally, the odds ratios (i.e., disparity) are also the same (see the highlighted cells in Table 4).

Finally, when one of the categories is dropped (Intercept - White) and regarded as the intercept, the intercept becomes the odds of running away for White youth and the coefficients in the model are interpreted as the difference between the White rate (the intercept) and the Black rate. In other words, the coefficients reproduce the disparity rate for both Black and Hispanic youth, which can be seen by comparing the third panel of Table 4 with the disparity rates in Table 3.

Going forward, I use the latter two models to explore the remaining research question: to what extent do characteristics of the counties explain differences in the rates of running away observed for White, Black, and Hispanic youth. The results are found in Table 5. There are two models. The first is a no intercept, fixed effects model that controls for whether the young person experiences congregate care while in out-of-home care, gender, and age. Age has been divided into a dummy variable with youth under age 16 and 16 and 17-year olds serving as the two groups. The descriptive analysis in Table 1 showed that age, gender, and placement in congregate care were all highly correlated

Table 4
Disparity rates based on fixed effect logistic regression models.

	Coefficient	SE	t-ratio	p-value	Odds	Probability	Disparity
Intercept Only							
Intercept	-2.14	0.01	-244.66	<0.001	0.12	10.6%	NA
No Intercept							
Whites	-2.47	0.05	-47.62	<0.001	0.08	7.8%	NA
Blacks	-1.83	0.13	-13.69	<0.001	0.16	13.8%	1.89
Hispanics	-2.04	0.12	-16.91	<0.001	0.13	11.5%	1.54
Intercept - Whites							
Intercept	-2.47	0.05	-47.62	<0.001	0.08	7.8%	NA
Blacks	0.64	0.13	5.00	<0.001	1.89	NA	1.89
Hispanics	0.43	0.11	3.86	<0.001	1.54	NA	1.54

with whether a foster youth would run away, findings that are in close alignment with the literature. The second model in Table 5 replicates the first but incorporates county random effects. In this case the coefficients for White, Black, and Hispanic youth have been allowed to vary between counties.

The results, which are aligned with cited studies, demonstrate how important child characteristics and placement history are. Placement in congregate care is associated with an increase in the odds of running away. The odds of running away are higher for 16 and 17-year olds than they are for youth under the age of 16. Males, as reported in Table 1, are indeed less likely to run away than females. Interestingly, when attributes of the young people are taken into account, the Black/White disparity falls but only slightly (1.89 to 1.80) whereas the Hispanic/White disparity rises (1.54 to 1.71).

Results from the second model in Table 5, which incorporates county random effects, tell a similar story with one important exception. Regarding child characteristics and placement history, adding between between-county variation does not change the narrative. Children with a congregate care placement, as compared to young people who stayed with families, are more likely to run away. In addition, males are less likely to run away and older youth are more likely to run away.

Regarding race and ethnicity, the narrative does change. As I showed in Table 2, the racial/ethnic composition of urban counties and counties with higher concentrations of the socially disadvantaged differ substantially when compared with other counties. After taking these differences into account, along with county size, the measure of disparity shifts substantially. Adjusting the disparity rates for age, gender, placement in congregate care, and the nested structure of the data reduces the Black/White disparity to 1.13 and the Hispanic/White disparity to 1.29.

The takeaway from the second model in Table 5 is simple. Rates of running away depend on the county where the young person was living when they entered care, but not because county location causes running away. Rather, county serves as a marker for features of the local child welfare system, features that are somehow correlated with the risk of running away among the young people who enter care in those counites.

To better understand this point, I completed two additional analyses. The first examines the relationship between running away and the county characteristics identified in Table 2: urbanicity, social disadvantage, the state policy context, and the entry/exit dynamic which measures the extent to which, at the county-level, an exit from congregate care is followed by an admission. The second part combines child and county-level data in a single model that addresses whether county characteristics explain the variation in disparities described in Table 5.

In Table 6, I consider the relationship between county characteristics and running away with the aim of identifying whether any combination of county characteristics offers a more parsimonious county profile. Model 1 of Table 6 considers urbanicity, social disadvantage, and whether the county is in a state that requires a run away risk assessment. Of those characteristics, the further one moves away from urban areas, the lower runaway rates are. Counties in states with an assessment policy also have lower rates of running away. However, as foreshadowed in Table 1, social disadvantage did not correlate with rates of running away.

In Model 2 of Table 6, I add whether, as measured at the county-level, I observed the entry/exit dynamic surrounding the use of congregate care. When added to the model, the entry/exit dynamic does change the results. Whereas urbanicity was significant source of variation in Model 1, with the addition of the entry/exit dynamic,

Table 5
Disparity rates based on logistic regression models (No intercept. Black and Hispanic coefficients refer to females under age 16 with no congregate care history.).

	Coefficient	SE	t-ratio	p-value	Odds	Probability	Disparity
County Fixed Effect							
Any Congregate Care	1.45	0.08	17.65	< 0.001	4.25		
Males	−0.31	0.04	−7.43	< 0.001	0.73		
White	−3.41	0.06	−55.62	< 0.001	0.033	3.2%	
Black	−2.82	0.17	−17.01	< 0.001	0.060	5.6%	1.80
Hispanic	−2.87	0.13	−22.22	< 0.001	0.057	5.4%	1.71
Age 16 & 17	0.72	0.03	25.73	< 0.001	2.06		
County Random Effect							
Any Congregate Care	1.63	0.02	72.78	< 0.001	5.11		
Males	−0.36	0.02	−18.65	< 0.001	0.70		
White	−3.81	0.04	−105.64	< 0.001	2.2	2.3%	
Black	−3.68	0.05	−81.45	< 0.001	2.5	2.5%	1.13
Hispanic	−3.55	0.04	−85.46	< 0.001	2.9	2.9%	1.29
Age 16 & 17	0.71	0.02	35.74	< 0.001	2.04		

Table 6
County-level disparity rates – random effects logistic regression.

	Model 1		Model 2		Model 3	
County Characteristics	Coefficient	p-value	Coefficient	p-value	Coefficient	p-value
Intercept	−2.00	< 0.001	−2.56	0.001	−2.60	< 0.001
Urbanicity						
Urban core	Reference		Reference			
Other urban areas	−0.42	0.004	−0.15	0.269	−0.16	0.238
Non-urban areas	−0.65	< 0.001	−0.21	0.139	−0.18	0.187
Social Disadvantage						
Lowest	−0.13	0.173	−0.10	0.278		
1	−0.12	0.222	−0.06	0.54		
2	0.01	0.787	0.02	0.632		
3	−0.01	0.646	0.00	0.984		
Highest	Reference		Reference			
Run Away Risk Assessment						
No	Reference		Reference			
Yes	−0.34	< 0.001	−0.27	< 0.001	−0.27	< 0.001
Entry/Exit Dynamic						
No effect			Reference			
Strong effect			0.59	< 0.001	0.59	< 0.001

Table 7
Running away disparity by child and county characteristics – county random effects.

County Characteristics	Coefficient	SE	t-ratio	p-value	(Odds) Odds Ratio
Intercept (White)	−3.87	0.07	−52.50	< 0.001	(2.1)
Entry/Exit Dynamic	0.46	0.07	7.10	< 0.001	1.59
Risk Assessment	−0.14	0.07	−2.09	0.037	0.87
Ever Congregate Care	1.63	0.07	22.06	< 0.001	5.09
Male	−0.35	0.04	−8.81	< 0.001	0.70
Black	0.03	0.06	0.53	0.599	1.03
Entry/Exit Dynamic	0.23	0.07	3.34	< 0.001	1.26
Risk Assessment	0.07	0.07	1.09	0.275	1.08
Hispanic	0.25	0.06	3.93	< 0.001	1.28
Entry/Exit Dynamic	0.02	0.07	0.21	0.831	1.02
Risk Assessment	−0.14	0.10	−1.37	0.17	0.87
Age 16 & 17	0.71	0.03	25.35	< 0.001	2.04

urbanicity is no longer correlated with running away. Neither the results for social disadvantage nor risk assessment policy change; the former is not correlated with running away, the latter is. The entry/exit dynamic is strongly, positively correlated with running away. It appears then that county size (i.e., urbanicity) is correlated with the entry exit dynamic such that where I find the entry/exit dynamic, the urbanicity of the county matters less. The last model in Table 6 (Model 3) drops social disadvantage from the analysis and reveals a persistent connection between assessment policy and the entry/exit dynamic. For that reason, I retain those two county characteristics in the final model, which is found in Table 7.

Table 7 provides an answer to the basic question: Black and Hispanic youth are more likely to run away but does the level of disparity depend on the county attributes? The presentation in Table 7 is laid out in a manner that follows Raudenbush and Bryk (2001). The main effects at level 1 are gender, ever placed in congregate care, age and race. Females, older teens, and children with a history of placement in congregate are more likely to run away. Across all models, these are durable effects. With regard to race and ethnicity, I show the main effects of race/ethnicity together with the interaction effects between the entry/exit dynamic, the risk assessment policy, and race/ethnicity. From top to bottom, the intercept represents the adjusted odds of running away, with specific reference to White females age 15 and under (2.1). The coefficients for Black and Hispanic youth show the adjusted odds for Black and Hispanic youth when compared to White youth. In the case of Black youth, the adjusted disparity rate is negligible (1.03) and not statistically significant. In the case of Hispanic youth, the disparity rate is substantial (1.28) and statistically significant.

The key to understanding the modeled level of disparity lies in the interaction effects. Starting with White youth, in counties where the entry/exit dynamic is strong, the odds a White youth will run away (1.59) are substantially higher than in counties where the dynamic is weaker. In counties where there is a state policy that calls for an assessment of runaway risk, the rates of running away tend to be lower for White youth. The effects associated with the entry/exit dynamic and the assessment policy show that, for Black and Hispanic youth, assessment policies do not affect disparity rates to a significant degree. With respect to entry/exit dynamics, in counties where there was an observable dynamic, the Black/White disparity tends to be larger. In the case of Hispanic youth, the disparity rate is not affected by the entry/exit dynamic. The difference in the Black/White and Hispanic/White differences (i.e., the Hispanic paradox) echo findings reported elsewhere in the literature (Drake & Zuravin, 1998; Hornstein et al., 2011; Maguire-Jack et al., 2015, 2019; Williams et al., 2010).

7. Discussion

Running away from foster care is a fairly common occurrence. Despite that fact, running away has attracted what is best described as modest interest among policy-makers and researchers. The reasons why are unclear. At a time when outcome measurement is increasingly important, the fact that running away does not sit alongside permanency rates, placement stability, reentry to care, and aging out as one of the explicit federal Child and Family Service Review outcome measures may offer one small clue (Children's Bureau, 2016).

Perhaps even more surprising is the lack of attention focused on whether Black and Hispanic youth are more likely to run away from care than their White counterparts, given that young people who run away face a set of cumulative risks including but not limited to human trafficking, poor relationships, food insecurity, and substance abuse (Morewitz, 2016). On their way to adulthood, Black and Hispanic youth already face substantial challenges and time spent on the street does little to tip the odds in their favor.

To address these gaps in the literature, I used data from 17 US states and measured the probability of running away from foster care using both temporary and exit runs as the basis for noting whether a young person ran away. Rather than select a subsample of young people based on their type of placement, I followed 138,000 young people from the time they entered care until they left. Among other advantages, this approach yields a reliable estimate of the incidence rate for running away. Moreover, the approach adopted allows for unambiguous measures of disparity based on the odds ratio, a standard measure for summarizing group differences. When adjusted for attributes of the child, their placement history, and the county context associated with where they were living when they entered care, the odds ratio also provides a robust measure of whether there is disparity on the one hand and whether the level of disparity varies on the other. The latter observation – do the disparity rates vary - brings us somewhat closer to understanding the processes that generate disparity than does the otherwise simple observation that disparities exist (Knight & Winship, 2013; Reskin, 2003).

For the most part, the findings offered here align closely with the research already cited. Older youth, girls, and young people with a history of placement in congregate care all have substantially higher rates of running away, regardless of the other factors in the model. In the simplest possible terms, although the point estimates will differ, older adolescents, girls, and young people with a history of congregate care are the young people most likely to run away, no matter where one looks.

Regarding race and ethnicity, Black and Hispanic youth are more likely to run away than White youth but the magnitude of those differences – the level of disparity – is clearly correlated with county context. Specifically, at the population-level, the baseline Black/White disparity rate in this collection of states and counties was 1.89; the Hispanic/White disparity rate was 1.54. After statistical adjustments based on gender, age, and a history of placement in congregate care, the Black/White disparity rate contracted, but the Hispanic/White disparity rate widened. When county random effects were added to the model, both the Black/White and the Hispanic/White disparity rates contracted, an indication that factors correlated with county-size have an effect on what we see at the population level. As I showed, the population of youth entering care in urban areas, where rates of running away are above average, is much more diverse (i.e., more Black and Hispanic youth) than in rural areas where running away is less likely. Thus, the observed population-level differences are related *in part* to the fact that running away is more common in urban areas and Black and Hispanic youth together represent a larger proportion of the children entering care in urban areas. In other contexts, this is referred to as the third variable problem (Armistead, 2014).

The shift in disparity based on context raises the possibility that other attributes of place are correlated with disparity. I considered four possibilities: urbanicity, social disadvantage, the congregate care entry/exit dynamic, and whether the county is in a state with a policy that requires an assessment of runaway risk. With the exception of the last issue (Dworsky et al., 2018), these questions of context and their import vis-á-vis running away have not been studied previously.

What I found steers the discussion in the direction of child protection *systems* and how they operate at the local-level. First, in counties from states with an assessment requirement, the rates of running away were lower, which is the expected direction though we have to remember that the relationship is not causal. I also found that the assessment requirement is *not* related to disparity. In other words, all things being equal, disparity rates are no better nor are they worse in the counties where state policy favors the assessment of risk.

The second finding – that disparity is affected by the entry/exit dynamic – suggests a more provocative narrative. Does that context somehow influence the motives of young people and the choices they make? Or, is the connection tied to some sort of selection process that affects which young people wind up in congregate care? More importantly, why does this particular manifestation of context have a differential effect on Black, Hispanic, and White youth such that disparity shifts in its presence? Unfortunately, my analysis stops well short of a firm answer to this question, other than to point the way toward future research.

To do that next-phase research, the investment will offer little in the way of a return without time spent connecting the observation to the child welfare system itself as opposed to conceptualizations centered on the young people and their motives. To that end, theory does offer useful examples of entry and exit dynamics at work within a system context (Bélanger & Sabourin, 2017; Ip et al., 2013; Plard et al., 2019). In their prior work, Wulczyn and Halloran (2017) found evidence of entry and exit dynamics organized around congregate care bed capacity, a connection that mirrors the dynamic between ICU hospital beds and inpatient admissions (Delamater et al., 2013; Gooch & Kahn, 2014; Roemer, 1961). In that literature (Gooch & Kahn, 2014), there is evidence that decision-making is affected such that both inpatient *case-mix* and *outcomes* are affected (Rice & Labelle, 1989; Stelfox et al., 2012; Valley & Noritomi, 2020) when utilization is shaped by supply. By following a thread that connects case-mix, outcomes, and supply, we may well clarify the link between the entry/exit dynamic, running away, and disparity. If we were to do so, the results would have far-reaching implications for how we manage congregate care, not to mention how we think about disparity and the import of structural explanations.

In the meantime, this much is already clear: to pay closer attention to running away, there needs to be a standard approach to how running away is measured. That process might start with a revised approach to how running away is reported by federal agencies. As noted, the federal outcome reports show the number and percentage of young people in a runaway placement. Aside from the awkwardness of the term *runaway placement*, the measure clearly underreports the incidence of running away. Reporting of federal outcomes has already made the shift to cohort measures. Building on that, it would not be too difficult to simply show the percentage of young people who run away within twelve months of entering care. In all likelihood, that figure would itself generate additional policy and practice attention.

8. Limitations

There are number of limitations worth mentioning. First, the measure of running away is limited to yes or no. When the young person runs away relative to the start of the placement is important, too (Courtney & Zinn, 2009). I showed a connection between congregate care utilization and running away, but did not consider the actual order of events: did the congregate care placement happen first or did the running away happen first? If a young person is more likely to be placed in congregate care after having run away, there is a problem of endogeneity that may overstate the connection between congregate care and running away. Nevertheless, the connection between running away and congregate care has been made previously so there is reason to believe the findings would stand up to a more precise link between placement type and running away. Relatedly, we do not have measures of clinical acuity to add to the mix of covariates applied to the child-level models. It is safe to assume that young people placed in congregate care are, for example, clinically different than the young people who avoid congregate care. It is also safe to assume that the clinical factors correlated with congregate care placement are also correlated with running away. If that is the case, we have not per se established congregate care as a risk factor that raises the risk of running way. Rather, in this study, congregate care serves as a proxy for clinical acuity. Again, greater measurement precision would draw a cleaner distinction between placement type, clinical acuity, the risk of running away.

It also important to note that even though we harmonized the data, we cannot say that each state applies the same record keeping standard when it comes to running away. Each state has a way of recording whether a young person runs away but that is different than saying that a young person who runs away in one state will be reported as having run away in another. This is another reason why, given the potential for deleterious consequences, reporting practices ought to be standardized to a greater extent than is currently the case.

Although there appears to be an effect of policy that favors assessment of risk as it relates to running away, it is important to say again that we don't know whether this policy actually lowers running away even though that conclusion would make intuitive sense. We also don't know the extent to which state policy is followed at the local level and by whom. Nevertheless, because quite a few places operate without an assessment requirement, a decision to put an assessment strategy in place where no such requirement exists offers an important evaluation opportunity provided, of course, that the assessment is paired with an appropriate intervention.

It is also important to bear in mind how I defined context. Because family courts are organized at the county-level in most parts of the US, counties are not unimportant in the child welfare context. Still, within county heterogeneity is substantial, especially with regard to such issues as their social ecological composition. Accordingly, we might find that the link between social ecological factors and running away is different than what was reported here although not necessarily (Lery, 2009). With regard to counties and the entry/exit dynamic, the research on supply induced demand in health care suggests that the link is observable regardless of spatial scale (Delamater et al., 2013). Given these uncertainties, the issue of spatial scale provides an organizing heuristic for future research.

Lastly, there is a question related to whether the dynamics of running away have changed. The cohort of young people included in this study entered care a decade ago so it is possible that, were one to update the sample, the findings offered here would in some way change. Given that possibility, it is perhaps best to think of these findings as a baseline. If, upon using an updated sample, one were to find a weaker association between the entry/exit dynamic, for example, then one would be in a position to ask if and how the system has changed such that what was once apparent no longer is. One might also find that the connection between the entry/exit dynamic persists, in which case one would have established an even stronger reason to better understand what those dynamics say about the nexus between congregate care and disparity.

When all is said and done, running away from foster care represents an important but understudied phenomenon. That running away contributes to the ways in which growing up as a Black or Hispanic youth means something different when compared with White youth only adds to the reasons why we ought to know more, so that we can do more.

CRediT authorship contribution statement

Fred Wulczyn: Conceptualization, Methodology, Formal analysis, Writing - review & editing.

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