



Published in final edited form as:

Am Sociol Rev. 2018 August ; 83(4): 716–743. doi:10.1177/0003122418781791.

Permanency and the Educational and Economic Attainment of Former Foster Children in Early Adulthood

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Abstract

Foster children are at disproportionate risk of adverse outcomes throughout the life course. Public policy prioritizes permanency (exiting foster care through reunification with birth parents, adoption, or legal guardianship) as means of promoting healthy development and wellbeing for foster youth, but little empirical evidence indicates that permanency, including its most preferred form—reunification—promotes positive outcomes. Using multi-system, statewide longitudinal administrative data, we employed logistic and mixed-effects regression to examine educational attainment and earnings among former foster youth in early adulthood. We included a variety of sociodemographic and economic controls to reduce selection bias. We found that youth who did not attain permanency (those who aged out of care) had significantly higher odds of graduating high school and enrolling in college than reunified youth and youth who exited to guardianship, and similar odds as adopted youth. Earnings were similar across groups. Among aged-out (but not reunified) youth, odds of high school graduation and average earnings were higher for those who spent more time in foster care prior to age 18. Notably, some findings were sensitive to the categorization of youth who ran away from care. Overall, results suggest that permanency alone is insufficient to promote foster youths' educational and economic attainment.

On any given day in the United States, roughly 430,000 children reside in foster care. Foster care placement is a much more common experience, particularly for racial/ethnic minority and low-income children, than is commonly recognized. Recent estimates suggest that, over the course of childhood (from birth to age 18), 6% of all U.S. children and 12% of black U.S. children experience one or more foster care placements (Wildeman and Emanuel 2014). The majority of youth who experience foster care are from socioeconomically disadvantaged families (Dolan et al. 2011; Lindsey 1991). Given the sociodemographic composition and relatively wide reach of the foster care system, foster children's experiences may affect—positively or negatively—the magnitude of social and racial inequalities. Yet, whereas sociologists have long emphasized the role of governmental institutions in shaping or

maintaining inequalities, foster care, which is among the most intensive and coercive interventions of the state in family life, has received comparatively scant attention (Wildeman and Waldfogel 2014).

The foster care system is part of a larger child welfare system that serves at-risk children and families. Foster care is intended as a temporary intervention for children who unable to be safely cared for at home. Thus, for children in foster care, permanency in living arrangements is a top priority: it is widely held that children have the right to a safe, stable, and permanent home, even when that home cannot be provided by their birth parents. The foster care system prioritizes reunification with birth families for most children who have been removed from their homes, but many parents are unable or unwilling to meet the requirements for reunification. When reunification is not an option, an available relative may assume permanent custody, or children may be placed for adoption. The least optimal outcome from the perspective of the foster care system is for a child to reach the age of majority without obtaining a permanent family (i.e., while still in the legal custody of the state); a process referred to as aging out. Surprisingly, despite the strong policy preference for reunification and, secondarily, for other forms of permanency, there is little empirical research on the implications of these arrangements for child wellbeing. Indeed, whereas decades of research have documented foster children's poor life outcomes (Allen et al. 1997; Pilowsky and Wu 2006; Trout et al. 2008), it remains largely unknown whether one of the most prioritized objectives of the foster care system, permanency, matters for children's long-term success.

In this study, we used multi-system, linked administrative data for the State of Wisconsin to assess whether achieving permanency—as defined by particular types of foster care exit (adoption, reunification, and other permanent placements)—relative to aging out of the foster care system, is associated with superior educational and economic outcomes in young adulthood, and how outcomes differ across types of permanency.

BACKGROUND

Decades of research have established that not all families are equally positioned—for various individual and structural reasons—to support the development of children into well-adjusted adults. The mechanisms through which social and economic inequalities are reproduced across generations—including, for example, family structure (McLanahan and Percheski 2008), parental education (Monaghan 2017), income and wealth (Killewald, Pfeffer, and Schachner 2017), and neighborhood quality (Sharkey 2008)—are all areas in which families involved with the child welfare system tend to be highly disadvantaged (Barth, Wildfire, and Green 2006; Coulton, Korbin, and Su 1999; Drake and Pandey 1996; Lindsey 1991; Sedlak et al. 2010). Yet, the disadvantages of children who spend time in foster care extend beyond these factors: most have been exposed to neglect or abuse (U.S. Department of Health and Human Services 2016), and their families are disproportionately likely to have problems with substance abuse, mental health, and domestic violence (English, Thompson, and White 2015; U.S. Department of Health and Human Services 2016; Zuravin and DePanfilis 1997). In short, the totality of foster children's experiences would place them at significant risk for adverse life outcomes even if they had never entered

foster care. Unsurprisingly, at the point of entering foster care, many have substantial physical, mental, and behavioral health needs (Steele and Buchi 2008).

The foster care system may provide access to services or treatments that temporarily address those needs, but most foster children, even those who age out, do not spend the majority of their childhoods in foster care. Thus, for many children the primary impact of foster care may depend less on their experiences during placement than on when and to whom they leave care. In determining where children go after foster care, the system may significantly influence the quality of environments in which children grow up, and the types of supports they will have as they enter adulthood. Those who are returned home are likely to sustain earlier family relationships in an environment generally similar to that experienced prior to care, whereas those who are adopted or placed in permanent guardianship may have rather different experiences and opportunities than they otherwise would. Children who remain in foster care until adulthood lack the potential benefits of a permanent legal family, but may receive additional supports and services from the government to facilitate a successful transition to adulthood; notably, however, existing descriptive evidence suggests that these children are highly at risk for adverse outcomes during this transition (Courtney et al. 2011; Pecora et al. 2006). Thus, children's trajectories may diverge not when they enter foster care, but rather when they exit.

Of the nearly 250,000 children who exited the foster care system in 2015, about half were reunified with their biological families (U.S. Department of Health and Human Services 2016). Although foster care placement generally results from an assessment of current or imminent risk to child safety, numerous state and federal laws express preference for reunification. For example, both the Adoption and Child Welfare Act (1980) and the Adoption and Safe Families Act (1997) explicitly require states to make reasonable efforts to reunify foster children with their parents, except in extreme or egregious circumstances. Thus, reunification is typically the default permanency goal unless or until the court determines that reunification is no longer feasible or in the child's best interests.

The explicit policy emphasis on reunification is consistent with the preferences of children and their biological parents (Folman 1998; Whiting and Lee 2003). Moreover, without reunification as a (presumed) option, foster care would serve a punitive rather than (or in addition to) a protective function. Children may also benefit from reunification because it preserves family bonds (Goldsmith, Oppenheim, and Wanlass 2004; Roberts 2012). Family relationships, particularly parent-child relationships, provide children and youth with a sense of shared history, identity, and belongingness (Weigert and Hastings 1977). Families bestow and maintain identity and, in this sense, a failure to achieve reunification can disrupt and inhibit the formation of a healthy individual identity. In addition, birth parents are also important for the formation of racial identity (Demo and Hughes 1990). Given the prevalence and complexities of transracial foster and adoptive placements (Evan B. Donaldson Institute 2008; Kreider and Raleigh 2016), reunification is better positioned to maintain children's connection their racial and ethnic heritage. Yet, there is little evidence of the consequences of reunification for child wellbeing. Moreover, although the family is generally considered a social good, the qualities and resources—economic, emotional, and

social supports—that families provide and transmit to children are an important component of that social good.

Children commonly enter foster care following experiences of neglect or abuse at the hands of their parents. These experiences harm children's development and inhibit secure parent-child attachments (Baer and Martinez 2006; Hildyard and Wolfe 2002) and may facilitate the development of antisocial behavior (Maas, Herrenkohl, and Sousa 2008). Prior to (and sometimes for a short period after) reunification, the child welfare system is intended to provide birth parents with services and supports that rectify risks to child safety. However, the system has limited resources to address the personal challenges faced by family members, and even less capacity to address the systemic structural disadvantages faced by many families with children in foster care. Despite that factors such as income and incarceration may have a causal impact on the risk of maltreatment and foster care entry (Andersen and Wildeman 2014; Berger et al. 2017), these issues fall largely beyond the resources and scope of the child welfare system. Thus, it is perhaps unsurprising that, approximately 30% of children who reunify experience new maltreatment within three years (Connell et al. 2009), and 20% to 30% reenter foster care within five years (Brook and McDonald 2009; Wulczyn 2004). Although ongoing risks faced by reunified families may be, at least in part, due to structural or systemic factors, it is nevertheless conceivable that the anticipated benefits of reunification may fail to materialize when a family lacks the supports and resources necessary to provide safety, stability, and positive role models.

A range of factors determine whether to separate a child from their parent(s) and maintain that separation. Yet, even if we consider only the best interests of the child, we must compare reunification not with an ideal family environment, but with the most probable alternative. Federal policy explicitly prioritizes adoption as the best option when reunification is unattainable, followed by guardianship, with aging out being a last resort. The approximately 22% of foster children exiting care to adoption (U.S. Department of Health and Human Services 2016) may experience comparatively high-quality environments. Adoptive parents differ from biological parents, both by self-selection and system design, in ways that are potentially relevant to child wellbeing. First, adoptive parents tend to be more educationally and economically advantaged than child welfare system-involved biological parents (Dolan et al. 2011; Kreider and Lofquist 2014), and although economic and educational advantages are not the sole or primary factors in considering the quality of a family environment, economically-advantaged families have more resources to offer their children during the transition to adulthood (Furstenberg 2010). Augmenting those economic advantages, adoptive families also receive ongoing support in the form of child Medicaid eligibility, adoption subsidies, and post-permanency services (U.S. Department of Health and Human Services 2011). Post-reunification biological families do not typically benefit from this same range of supports.

In addition to socioeconomic advantages, adoptive parents may also be better-positioned to ensure child safety. Adoptive parents must undergo a lengthy screening process to determine their suitability to adopt a child, and may be deemed ineligible on the basis of home safety, criminality, health problems, or other considerations (Child Welfare Information Gateway 2016). Although imperfect, the approval process for adoption should eliminate those least

able to provide a safe and appropriate home environment. Prior research on adopted children (though not specifically focused on adoptions from foster care) has shown that the economic and behavioral outcomes are significantly affected by the socioeconomic attributes of adoptive parents, net of biological parent traits (Plug and Vijverberg 2005; Sacerdote 2000, 2007). Although educational attainment is affected by a number of factors, including early life experiences and genetically-influenced traits (Krapohl et al. 2014), adoptive parents may nevertheless influence children's opportunities for educational and economic success by, for example, promoting cognitive and non-cognitive skill development, setting academic expectations, and being involved in schooling (Heckman 2008; Sandefur, Meier, and Campbell 2006). Of course, adoption is a selective process, such that the children more likely to be adopted may also be better situated for later success. Specifically, children adopted from foster care tend to be younger (and thus have greater opportunity for additional development) and less likely to have serious mental and behavioral health problems than other foster children (Snowden, Leon, and Sieracki 2008).

Despite the potential benefits from, and policy preference for, adoption, it is an unlikely outcome for a considerable fraction of foster children who cannot be reunified. Even when children are freed for adoption (their biological parents' rights are terminated), they may not be matched with an adoptive family. At any given time, there are over 100,000 adoption-eligible foster children waiting for adoptive families (U.S. Department of Health and Human Services 2016). Prospective adoptive families are often reluctant to adopt from foster care, viewing foster children as undesirable for reasons of age, race, and disability (Zhang and Lee 2011). Consequently, for many children, especially older children and racial minority children, the alternative to reunification may be permanent guardianship or aging out of care.

Guardianship (and similar legal custody arrangements) is categorized as a form of permanency, but differs from adoption in that it does not require the termination of parental rights and is primarily restricted to children in kinship care (living with relatives; (Child Welfare Information Gateway 2015b). Guardianship is generally pursued when a child or kinship foster parent is unwilling to proceed with an adoption; yet, it is an increasingly common option for children in kinship care, with about 15% of children exiting care being placed in a guardianship or custodial arrangement with a relative (U.S. Department of Health and Human Services 2016). Guardianships have an approval process that is similar to that for becoming a kinship foster parent, including a home study and criminal and child protection background checks; however, the process is often less lengthy and intensive than that for adoption. Since 2008, federal funding has been available to provide guardianships with financial subsidies similar to those provided for adoptions, the amount of which tends to mirror the foster care maintenance payment for which the child's foster parent would otherwise be eligible (Fostering Connections to Success and Increasing Adoptions Act 2008). Thus, children who emancipate from a kinship foster placement and children placed in guardianship with kin may have similar experiences and outcomes. However, there has been little research on the characteristics of, or youth outcomes associated with, guardianships.

About 9% of foster care exits involve youth who age out of foster care. Although never a preferred outcome, aging out has received substantial scrutiny in recent years, with new

federal guidelines requiring states to pursue permanency as a goal for all foster youth under the age of 16 (Preventing Sex Trafficking and Strengthening Families Act 2014). Implicit in these guidelines is an expectation that most youth, irrespective of age, will benefit from permanency. In part, this policy change was driven by widespread recognition of the hardships faced by emancipated youth during the transition to adulthood: they experience high rates of poverty, homelessness, and criminal justice involvement, and relatively low educational and occupational attainment (Courtney et al. 2011; Pecora et al. 2006). Yet, those who enter foster care and ultimately age out are a distinct group. On average, they experienced higher levels of placement instability, running away, and involvement with mental health systems than other foster youth (Shook et al. 2013). As such, these youths may face poor social, educational, and economic outcomes in early adulthood, regardless of whether they aged out of care. The extent to which aging out is, itself, likely to be a causal agent in long-term outcomes is not well understood.

There are, however, several reasons to suspect that there is a causal link between aging out of foster care and a less successful transition to adulthood. Youth who age out of care have no legally or formally recognized family. Given that the family continues to serve as the primary institution through which children and youth are socialized, including during the transition to adulthood (Furstenberg 2010), this may have considerable social and economic consequences, including directly reducing economic support and the transmission of social and human capital. Although there is vast heterogeneity in the quality of caregiving and level of family engagement for children who exit care and, indeed, for children who never experience care, children who age out are disproportionately likely to have no de facto family unit to which to turn for advice, comfort, or support—or even with which to spend events and holidays. This may be both symbolically and transactionally meaningful. Thus, we may expect aging out of care to be associated with poorer outcomes in early adulthood.

Despite not having been adopted by or placed in legal guardianship with their foster parents, some youth may nevertheless strongly identify with them, internalize their values and expectations, and receive concrete and emotional support from them. This may promote successful transitions to adulthood given that, on average, foster parents have higher incomes and education levels than birth parents (Dolan et al. 2011), and are also screened for physical and mental health problems (Child Welfare Information Gateway 2014). To this end, youth who spend a longer period of time in foster care prior to aging out should be more likely to benefit from related environmental advantages (e.g., access to better schools or work opportunities) and identify with the values and expectations (e.g., regarding educational attainment and employment) of their foster families. At the same time, foster parents, particularly those who choose not to adopt or take on legal guardianship of their foster youth who are at risk of aging out, may not hold high expectations or feel ultimately responsible for the successes or failures of these youth. Prior research has shown that, although there is considerable heterogeneity in foster parents' commitment to foster children, on average they express less commitment to those placed at an older age (Dozier and Lindhiem 2006), which is often the case for children who age out of care. In addition, the permanent aspect of a legally and socially recognized family is arguably essential to its impact—both parents and youth have greater incentives to invest in relationships that are perceived as lasting commitments. Whether a youth is perceived as a family member is

likely an important consideration for whether they and their foster families have a shared set of positive expectations and norms (Schofield and Beek 2005). On the whole, this too suggests that aging out of care should be linked to poorer transitions to adulthood relative to exits from care to permanent family arrangements.

Finally, some research indicates that aged-out foster youth frequently return to live with their biological parents after leaving care (Collins, Paris, and Ward 2008), despite that the child welfare system deemed these families unsafe for reunification. This may occur because youth have nowhere else to go or because they continue to identify as a member of their birth family. Regardless, the extent to which they receive financial or emotional support from their birth families after aging out is unknown. To compensate for potential losses in financial support, federal policy now mandates the provision of some resources to aged-out youth, including continuation of Medicaid coverage and vouchers for attending college. However, the privileges concomitant with family membership extend beyond finances. Even in early adulthood, families provide substantial emotional support and guidance. Since 2008, some states have used federal funding to support extended foster care (allowing youth to remain in foster care after age 18, under specific conditions). If extended benefits and the option to remain in foster care provides, in addition to shelter and basic needs, the emotional support and guidance typically provided by a family, then we may not expect early adulthood outcomes to significantly differ between aged-out youth and other youth who spent time in foster care but did not age out. Notably, these benefits would largely manifest too late to affect high school graduation rates, but may support college enrollment and employment after high school.

Time in care prior to exit is likely to moderate the effects of exit type and provide information as to mechanisms. For example, because expedient reunification is highly prioritized, children who take longer to reunify are likely to have higher-risk family situations and may thus be expected to benefit less from reunification. In contrast, for youth who age out, time in care is inextricably linked with age at entry; if a youth ages out after 1 year in care, for instance, it is inferable that they entered near their 17th birthday. The accumulation of values and skills that influence educational attainment and employment occurs over time; as such, if the quality of the caregiving environment during foster care placement is a mechanism for superior outcomes among aging out youth, we would expect a greater positive effect of aging out of care (relative to reunification) for those who remained in care longer prior to aging out. At the same time, aged-out youth are eligible for supports irrespective of how long they were in care prior to aging out. Thus, if enhanced resources support positive educational and employment outcomes, we would expect equivalent outcomes for aged-out youth irrespective of duration in care.

Few studies have compared outcomes for youth with different foster care exit types. Importantly, existing studies have typically compared youth who reunified to those who are still in care but may later exit to permanency. As such, findings from these studies do not necessarily reflect the effects of aging out. Nevertheless, existing research suggests that youth who have reunified have equivalent or worse academic and behavioral outcomes than youth who have not reunified (Bellamy 2008; Biehal 2007; Taussig, Clyman, and Landsverk 2001), but perhaps better outcomes than those who remain in foster care and are not adopted

(Lloyd and Barth 2011). Notably, however, such studies have used small samples (149–604 children) and relied on caregiver or self-reported outcomes rather than objective measures. Moreover, a review of the U.S. and U.K. studies focusing on reunification (Biehal 2007) concluded that there is no consistent evidence that reunification improves children’s psychosocial outcomes. Large-scale, longitudinal studies on the long-term outcomes of specific types of foster care exits are long overdue. To our knowledge, this is the first study to consider how educational attainment and earnings differ depending on whether former foster youth were reunified, adopted, or placed in guardianship, or aged out of care.

METHOD

Data

We used linked longitudinal administrative data from the Wisconsin Multi-Sample Person File (MSPF), housed at the Institute for Research on Poverty at the University of Wisconsin-Madison, matched to administrative data from the Wisconsin Department of Public Instruction (DPI) for the years 2004 to 2015. The MSPF includes individual-level administrative records from state-administered public social welfare program data systems in Wisconsin, which have been linked across programs and over time. We specifically used records from the child welfare system (CPS; which includes foster care data), Supplemental Nutrition Assistance Program (SNAP; formerly food stamps), Unemployment Insurance system (UI; which includes earnings data), Supplemental Security Income program (SSI), cash welfare (Temporary Assistance to Needy Families [TANF] and its predecessor, Aid to Dependent Families with Children [AFDC]), and Department of Corrections (DOC). Educational attainment data were drawn from DPI administrative records, which also include information on college enrollment from the National Student Clearinghouse.

Child welfare records were not completely electronic in all Wisconsin counties until mid-2004. Thus, our sample was constrained to children who entered foster care on or after July, 1, 2004. We restricted our sample to children who were under age 16 in 2005 (the first year for which education data are available) and at least 19 years old in 2015 in order to observe individuals at appropriate ages to assess high school graduation, college enrollment, and earnings. We further excluded anyone who died prior to their 18th birthday or were known to have left the state. There were 11,713 individuals who met our sample inclusion criteria. We dropped a small group of youth whom we could not link to their birth parents (resulting in missing data on important control variables; $n=474$). In our primary analyses, we also excluded children who were not identified in the public school records, meaning they were home-schooled, or attended a private or “choice” school ($n=2,014$). These exclusions resulted in a potential analysis sample of 9,225 youth. However, to focus on intentional (child welfare system determined) exits, we then excluded youth whose type of foster care exit was unable to be discerned ($n=92$). In our primary models, we also excluded youth whose last observed exit was identified as ran away ($n=435$) or detained in a (juvenile or adult) correctional facility ($n=246$). Thus, our primary analytic sample contained 8,452 individuals.

We assessed the sensitivity of our results to several alternative sample specifications. First, we estimated earnings models in which we included those youths who were missing public

school records ($n=10,230$). In addition, we estimated models for each outcome in which we included in the sample those youths whose last observed foster care exit was ran away or detained. We did so out of concern that foster youth who ran away or were detained prior to exiting care may have been on the path to aging out. In other words, it is possible that those foster youths who are least likely to be reunified, adopted, or placed in guardianship are disproportionately likely to select or be selected out of the foster care system by running away or becoming detained prior to adulthood. If so, and if they are also disproportionately likely to experience adverse educational and earnings outcomes, then their exclusion would artificially reduce the risk level of the aged-out sample relative to that of other exit types. We cannot say for certain whether, had the youth not run away or been detained, they would have achieved permanency or aged out. However, given this possibility, we assess the robustness of our results to the assumption that runaways whose cases remained open and detainees are best categorized as a subset of the aged-out population.

Measures

Educational attainment and earnings.—We focus on two outcomes: educational attainment and earnings. We assessed educational attainment by high school graduation (received diploma vs. dropped out or obtained GED/other completion credential) and college enrollment. Our main economic outcome was quarterly earnings, drawn from employer-reported earnings in the UI system. Excluded from these data are employment that is not covered by UI, including informal (under-the-table) work, federal student work study jobs, and self-employment. Earnings were measured quarterly and adjusted for inflation using the Consumer Price Index to be in 2015 dollar amounts. We used a log-transformed measure of quarterly earnings in our analyses.

Foster care exit type.—Our primary explanatory variable was type of foster care exit. We focused on the four most common exit types: reunification, adoption, guardianship or permanent placement with a relative, and emancipation (aging out). Because some children may exit care only to later reenter, we used the youth's final observed exit from foster care as their exit type. (As such, some of the youth who were adopted, placed in other permanency, or aged out had previous unsuccessful reunifications.) Exit type is recorded by the caseworker at or near the time of case closure. This data element is consistently recorded for all foster youth because it factors into federal reporting requirements and evaluation metrics. As noted above, in our primary analyses, we excluded from consideration “unplanned” exits: youth who exited care into detention or incarceration and youth who ran away from care and did not return. In supplemental analyses, we coded these youth as having aged out of care.

Covariates.—We included two types of covariates: characteristics of children's foster care experiences and sociodemographic characteristics of the child and their family of origin. We considered six characteristics of children's foster care experiences. Placement characteristics included percent of total foster care time spent in a restrictive placement (group home, residential facility, detention center), percent of time spent in kinship care, and total number of placements. Removal-related characteristics included age at first removal from home (first foster care placement) and an indicator of whether a child had been removed from the home

more than 1 time (many youth experiencing foster care experience unsuccessful reunifications). Lastly, we created indicators of total length of foster care stay between 2004 and age 18 (less than 6 months, 6–18 months, 19–36 months, and more than 36 months). We excluded from the measure of length of foster care stay any time spent in foster care after the youth's 18th birthday, which may have occurred as part of an extended foster care stay. This exclusion was made because only those who age out of care are permitted to stay past their 18th birthday and because there are relatively stringent conditions attached to extended stays, which include employment and educational requirements.

Sociodemographic characteristics included sex (male, female), race (black, white, Asian, American Indian, Hispanic, multiracial, unknown), indicators for birth year, childhood receipt of Supplemental Security Income (SSI), and child maltreatment history. SSI was used as a proxy for disability among the low income population: the primary eligibility criterion for children is a documented diagnosis of a mental or physical impairment that is chronic or results in severe functional limitations; however, the MSPF includes SSI data only for child SSI recipients who were also participating in another program (requiring SSI information for eligibility). Child maltreatment history was approximated by a binary indicator of any CPS involvement (since 2004 and prior to age 18) and indicators of any alleged victimization for each of four non-mutually-exclusive maltreatment types: sexual abuse (excluding allegations involving juvenile perpetrators), physical abuse, physical (basic needs) neglect, and supervision neglect. Also included were indicators of early life (between the ages of 0 and 5) experiences: maternal imprisonment, maternal receipt of cash welfare, child receipt of SNAP, average maternal earnings (inflation-adjusted), and average quarters per year with maternal employment. Finally, we included indicators of family size (number of children born to the youth's biological mother), family complexity (number of fathers of the mother's children), whether the youth was born to unmarried parents, and whether there was ever a child support case for the youth. These indicators all refer to children's birth mothers.

We adjust for these foster care experiences and characteristics of the children and their families or origin in our empirical models because they are likely associated with the process of selection into specific exit types as well as with young adult educational attainment and earnings. A potential concern, however, is that there is inadequate overlap in the distributions of the selection variables across foster care exit groups. We investigated the likelihood that this is the case by estimating the conditional probability of each type of exit as a function of the observable sociodemographic characteristics of each youth and their family of origin. Specifically, the probabilities were obtained from a multinomial logit model regressing exit type on the full set of sociodemographic covariates; the models did not include the foster care experiences measures, which are endogenous to the selection process. We then graphically examined overlap in the predicted probability of (propensity for) each exit type compared to all other exit types. This strategy parallels a propensity score approach and essentially allows an examination of overlap in the joint distribution of the covariates associated with each exit type. We present these comparisons in Appendices A through D, which show the distribution of predicted probabilities of each exit type by observed exit type. Although there is variability in the probability distributions by observed exit type (which we would expect given that exit type is nonrandom), there is also extensive overlap.

Notably, the foster care characteristics, which were excluded from the exit type prediction models, were more pertinent to exit type probabilities and reduced the degree of overlap, indicating the exit type is, at least in part, affected by (or reflected in) children's experiences during foster care. In examining each of the foster care variables (as shown in Table 1), there are two factors that appear to most strongly distinguish exit type: duration in care and number of placements.

Analytic Approach

We used logistic regression with county fixed effects to model the odds of high school graduation and college enrollment. County fixed effects are a necessary control because child welfare agencies in Wisconsin are organized and administered at the county level and exercise a fair amount of autonomy in determining their procedures and protocols. Family courts, which are heavily involved in the determination of foster care exit, are also organized at the county level. We used Wald tests to assess the statistical significance of differences between exit types. For college enrollment, we present both unconditional models and models conditional on high school graduation. To model earnings, we used mixed-effects models, which included a random intercept for each individual and a random slope for time. Earnings were organized by quarter. We estimated both differences in average earnings and differences in earnings trajectories over time by exit type.

To further examine the extent to which the resources provided to youth who aged out matter relative to other factors, we also investigated whether the associations between aging out and educational attainment depend on the length of time youth spent in foster care prior to age 18 by modelling interactions between time spent in care and exit type. However, because our sample primarily included youth who entered foster care at an older age, the vast majority reunified or aged out of care. We did not have sufficient statistical power to assess these interactions for all exit types. Thus, we focused this analysis on a comparison of aging out and reunification only.

It is also important to consider whether our analyses should be approached as sample-based or population-based. Because we utilize data on the full population of Wisconsin foster youth during the observation period, our data could be conceptualized as population based (Gibbs, Shafer, and Miles 2017). If so, inferential statistics (statistical significance testing) would be inappropriate, as such an approach assumes the analyses use a sample from some larger population. However, our data capture a population in a specific state at a specific point in time and, although there are important differences across states and time, we nevertheless have an interest in generalizing beyond Wisconsin in 2005–2015. Thus, we use inferential statistics to better describe the precision of our estimates, but acknowledge that results that do not achieve statistical significance may nevertheless hold practical significance for our population. As such, we pay careful attention to the extent to which the magnitude of our estimates are substantively significant, rather than heavily weighting their “statistical” significance.

RESULTS

Sample Description

Descriptive statistics by exit type are presented in Table 1. Notably, most sample youth experienced reunification ($n=5,581$; 67%) or aged out of care ($n=1,885$; 22%); comparatively few were adopted ($n=205$; 2%) or experienced other permanency (guardianship or permanent placement with kin) exits ($n=781$; 9%). Overall, adopted youth were most likely, and reunified youth least likely, to graduate high school or enroll in college; aged-out youth had the lowest median earnings across all post-18th birthday observed quarters. There were substantial differences in the length of exposure to foster care among groups. A majority of aged-out youth and adopted youth were in foster care for more than 18 months, whereas this was true of only 15% of reunified youth and 33% of youth experiencing other exit types. On other characteristics, reunified and aged-out youth were more similar to one another than to adopted or other permanency youth. Reunified and aged-out youth spent less time in kinship care and more time in congregate or shelter care, and were more likely to have had multiple foster care entries, as compared with adopted and other permanency youth. Aged-out youth had the largest average number of placements (5.35 vs. 2.46–2.90), and were oldest at entry.

Turning to child characteristics, reunified youth were disproportionately male (58%), whereas other groups were evenly distributed by gender. Reunified and adopted youth were more likely to be non-Hispanic White (62% and 57%, respectively) than aged out (55%) or other exit youth (54%). Black youth were underrepresented in the reunified group. Aged-out youth were substantially more likely than all other groups to have received SSI as a child. Other permanency youth were most likely to have families that received SNAP or cash welfare in early childhood and reunified youth were least likely. Youth in the reunified group were more likely to have entered foster care without CPS involvement (meaning they entered foster care due to child or family problems that did not rise to the level of child maltreatment), and were far less likely to have a recorded experience of alleged neglect.

Educational Outcomes

Table 2 shows results of our logistic regression models predicting high school graduation. Model 1 includes the full set of sociodemographic characteristics of the child and their family of origin, but excludes experiences that occurred in foster care. Model 2 adds foster care experiences. Both sets include county fixed effects. The results from Model 1 indicate that aged-out youth and other permanency youth have relatively similar odds of graduation, whereas adopted youth have higher, and reunified youth have lower, odds. These differences were large in magnitude: odds of graduation were twice as high for adopted youth, and about 48% lower for reunified youth, than for aged out youth. After accounting for foster care experiences, we found that, compared with aged-out youth, reunified and other permanency youth were considerably less likely to have graduated high school. There were no statistically significant differences between adopted and aged-out youth; however, the coefficients indicated a slightly higher probability of graduation among adopted youth. Those who remained in care longer than 36 months were more likely to receive a diploma than those in care less than 6 months. Number of placements, percentage of time in

congregate or shelter care, and age at first removal were negatively associated with graduation, whereas percent time in kinship care and reentry were not associated with high school graduation.

Table 3 shows the results of models predicting college enrollment. In models that were not conditional on graduating high school and did not include foster care-specific controls, the results were largely similar to those for high school graduation: adopted youth were more likely, and reunified youth less likely, to enroll in college than aged-out youth. Upon adding foster care measures, we found that youth who experienced reunification and other permanency were less likely to enroll in college than those who aged out of care or were adopted.

The conditional (on high school graduation) models suggest that these associations are not entirely due to differences in high school graduation. Though differences across exit types were not consistently statistically significant, the trends were similar to the unconditional models. In models controlling for foster care experiences, adopted youth who graduated high school were more likely to attend college than reunified and other permanency youth. Also, although there were no statistically significant differences between adopted and aged-out youth, the coefficients for adoption were consistently positive and relatively large, raising the possibility that they were imprecisely estimated (likely due to a comparatively small sample size). Among high school graduates, college enrollment was less likely among those in care for longer than 3 years than for those in care for a shorter duration. Of the other foster care attributes, only percent time in congregate, detention or shelter care and age at first removal were associated with college enrollment among high school graduates in the full sample.

The differences in educational outcomes by type of exit (Tables 2 and 3) contribute to our understanding of factors shaping educational outcomes for former foster youth. But given that exit type encompasses differences in both pre-adulthood environments and eligibility for government supports, a critical next step is understanding the extent to which differential outcomes between aged-out and reunified youth reflect the experience of remaining in foster care (versus returning home), or the governmental benefits that are contingent upon aging out. Table 4 presents results from models that included an interaction between exit type and time in care, focusing on aged-out versus reunified youth. The rationale for these models was twofold. First, because high school dropout is the culmination of a process of disengagement (Tyler and Lofstrom 2009), it is more probable that we are observing a true effect of remaining in foster care until adulthood if there is a dose-response relation, such that the size of the effect increases with time in care prior to aging out. Second, we sought to assess whether the college enrollment advantages we observed for aged-out youth in our primary models may reflect differential access to tangible economic resources provided to children who age out, as opposed to differences in social environments. Resources, such as college tuition support should be available to all aged-out youth irrespective of how long they were in care prior to emancipating. Thus, if differences between aged-out youth and reunified youth were driven by resource access, we would expect no gradient for time in care. Alternatively, if foster care provides an environment more conducive to educational success, we would expect that youth in care for longer periods of time would have higher

educational attainment, and that the gradient would be steeper for aged-out youth because they remained in foster care through the end of high school.

In Figure 1, we show predicted probabilities from logistic regression models for high school graduation and college enrollment (results shown in Table 4). We found that the probability of high school graduation among aged-out youth increased the longer they were in care prior to age 18. Among aged-out youth who spent less than 6 months in care, the predicted probability of high school graduation was .61, whereas the predicted probability among those in care longer than 36 months was .77. For reunified youth, the probability of high school graduation was relatively stable across time in care. The pattern of results was similar with respect to college enrollment in the full sample (unconditional on high school graduation). For college enrollment conditional on high school graduation, we found no consistent time in care gradient. For youth in care less than 36 months, the probability of college enrollment among high school graduates was equivalent for reunified and aged-out youth. For those in care longer than 36 months who graduated high school, reunified youth were less likely than aged out youth to enroll in college.

Earnings

Results of our models of earnings are found in Table 5. In unconditional Model 1, we found that adopted youth had higher base earnings than aged out and reunified youth and that adoption and other permanency were associated with increased earnings over time. When adding foster care controls (Model 2), we found no differences in base earnings, but that adopted and other permanency youth both had increased earnings over time relative to aged-out and reunified youth. Some young adults may have low (or no) earnings because they are college students. To account for this, we also estimated the models excluding those enrolled in college; the results are qualitatively similar, except that, in the full sample, when not accounting for foster care experiences, reunified and other permanency youth had higher base earnings. When accounting for foster care experiences, there were no statistically significant differences in base earnings, but differences in earnings trajectories remained. Of our foster care control variables, time in congregate, detention or shelter care, number of placements, and age at entry were negatively associated with earnings, and time in kinship care was associated with higher earnings.

We then compared earnings trajectories for aged-out and reunified youth by the duration spent in care prior to age 18, as shown in Table 6. Reunified youth who spent less than six months in care had higher base earnings than aged-out youth who spent less than six months in care (intercept coefficients). Among those spending more than 6 months in care, duration spent in care prior to age 18 was associated with greater base earnings among aged-out youth, whereas duration in care was associated with lower base earnings among reunified youth. There were no differences in earnings growth over time (slope coefficients) for reunified versus aged-out youth, irrespective of duration in care.

Sensitivity Analyses

We also estimated a variety of alternative specifications to assess the robustness of our findings. First, we conducted our analyses under the assumption that youth with a runaway

or detained foster care exit status would have otherwise aged out. Specifically, we re-estimated our models using a measure of exit type that included those who ran away, but whose cases remained open (meaning they were eligible for the benefits provided to aged-out youth) and detained youth as aged out (of the 435 youth whose last observed exit was a runaway status, 22% [$n=97$] were listed as having their case closed and were excluded from the analysis). This analysis indicated that reunified youth had lower odds of high school graduation or completion than all other groups of youth, and adopted youth had higher odds than all other groups (Appendix E). There were no notable differences in college enrollment between reunified and aged-out (including runaway and detained) youth. Base wages were higher among reunified youth as compared with aged-out (including runaway and detained) and other permanency youth, and wage trajectories were stronger for adopted and other permanency youth as compared with aged-out or reunified youth (Appendix G). Among youth spending less than 6 months in care, reunified youth had higher odds of high school graduation and completion (Appendix F) and higher base wages (Appendix H) than aged-out (including runaway and detained) youth. Yet, for both education and earnings, the time in care gradient remained the same: longer durations were beneficial for aged-out (including runaway and detained) youth, but not for reunified youth. Overall, categorizing runaway and detained youth as aged out diminishes (and, in the case of wages, reverses) observed differences between aged out and reunified youth. However, these results appear to largely reflect differences among those in care for fewer than 6 months, as the time in care gradient for aged out youth remained strongly positive for aged out youth (including runaway and detained youth) and null to negative for reunified youth.

Second, in online appendices I through M, we present separate models by youth sex, given both well-documented gender differences in educational and labor market success among disadvantaged populations (Buchmann, DiPrete, and McDaniel 2008), and evidence that boys are, on average, more sensitive than girls to environmental stress (Zaslowsky and Hayes 1986). Results are largely similar for males and females; however, associations the time in care gradient for educational attainment among aged out youth is generally stronger for males than females.

Third, to test the sensitivity of our results to sample reductions related to missing DPI data, we re-estimated the models of earnings using the complete sample (i.e., our analytic sample plus those missing educational data; $n=10,230$). The results of these models were substantively similar in direction and magnitude to those of our primary analyses.

Fourth, to assess the sensitivity of our findings with regard to duration in care to cohort-related differences in observed duration (that is, that children born in the earlier years of our sample were less likely to be observed in care for 3+ years), we re-estimated our interaction models using only the subsample of youth who were born after 1991. Whereas long durations were more common for the earlier cohorts, there was not substantial variation in observed spells across cohorts born after 1991. Again, our results were substantively similar in direction and magnitude (though, reduced sample size resulted in some loss of statistical significance).

Fifth, not all youth enter foster care due to child maltreatment or CPS involvement. In our sample, approximately 30% of foster youth did not have a protective services history proximal to their entry to foster care. It is possible that these youths differ in unobservable ways from their maltreated counterparts. In addition, given that they were, to our knowledge, not maltreated prior to care, they may benefit more from reunification than maltreated youth. In separate models of youth with and without known CPS involvement, we found similar results for high school completion and earnings, with the exception that differences between reunified and aged-out youth on base earnings were larger (and statistically significant) in the CPS only sample. There were differences in the college enrollment findings for the CPS and non-CPS samples. Specifically, whereas time in care was associated with somewhat higher college enrollment among aged-out youth in the CPS sample, the association was negative for aged-out youth in the non-CPS sample. In addition, whereas educational outcomes were better for those with longer durations in foster care in the CPS sample, this was not true for non-CPS youth.

DISCUSSION

This study is among the first to compare associations of reunification, adoption, other permanent exits (guardianship or permanent kinship placement) and aging out of foster care with education and earnings in early adulthood. The strengths of the study include the use of statewide longitudinal data, adjustments for county-level variation, and use of administrative records to identify family background as well as educational and economic outcomes among the population of youth in foster care in Wisconsin. On the whole, our analyses suggest that—contrary to what is generally thought to be the case—youth who age out of foster care fare no worse in terms of education and earnings than those who are reunified with their families of origin. Rather, after accounting for differences in children's experiences during foster care, aged-out youth tend to fare similarly (with regard to earnings) or better (with regard to education) than children who reunify and who exit to guardianship and other arrangements; their outcomes are, for the most part, similar to those of youth who are adopted. Although more work is needed to disentangle the extent to which the relations documented here are causal, our results generally suggest that spending a greater duration of time in care prior to aging out is associated with improved outcomes, a dose-response pattern less easily attributed to selection.

These findings challenge commonly held assumptions and raise questions about the basis of policy preferences regarding the role of particular foster care exits for youth development. They also contribute evidence to inform alternative theories of the role of foster care in youth development and transitions to adulthood. Child welfare policy explicitly prioritizes reunification with birth parents, followed by adoption, and permanent guardianship. Aging out is the least preferred outcome and is assumed to run counter to youth's best interests. Yet, despite a large literature documenting that, on average, foster children, in general (Allen et al. 1997; Pilowsky and Wu 2006; Trout et al. 2008), and those who age out of care, in particular (Courtney et al. 2011; Pecora et al. 2006), experience a host of adverse life outcomes, there is scant evidence comparing the wellbeing of youth experiencing particular types of exits from care.

Prevailing family theory also predicts that reunification, adoption, and permanent guardianship should better promote healthy development and transitions to adulthood than aging out of care. Reunification is thought to benefit youth by preserving family bonds (Goldsmith et al. 2004; Roberts 2012) and honoring the preferences of children and their biological parents (Folman 1998; Whiting and Lee 2003). In this framing, less attention is given to structural and personal barriers that biological parents—particularly those whose children are removed from their homes—may face and the potential effects of those barriers on children’s opportunities for success. Adoption and, to a somewhat lesser extent, permanent guardianship are in part thought to be beneficial (relative to aging out) because prospective parents or guardians have made an active choice to permanently take on parenting responsibilities for a non-biological child. Conversely, aging out is thought to represent disconnection from the family as a socializing institution, though there is some evidence that such youth reconnect with (and sometimes go back to living with) their birth families (Collins et al. 2008), either out of necessity (lack of other options) or ongoing identification and connectedness as a family member. Even in such cases, however, it is generally assumed that youth will not receive the same level and quality of investment as they would in biological homes that were able to reunify, or in adoptive or permanent guardianship homes.

Our findings that, overall, reunification does not predict higher educational attainment or earnings relative to other foster care exits, may reflect disparities in how reunified children are supported as compared with peers in other arrangements. Although permanency of family arrangement is an organizing principle for child welfare policy, it does not necessarily follow that permanency, itself, will substantially account for youth outcomes.. Rather, the level and continuity of governmental investment may be one factor influencing such outcomes. The child welfare system is unambiguously responsible for the care of children who remain in foster care; in addition, the federal government acknowledges a degree of long-term responsibility for those who are adopted, and (more recently) those placed in guardianship (Child Welfare Information Gateway 2015a; U.S. Department of Health and Human Services 2011). In addition to financial supports, states may also provide the families of children in adoption or guardianship with ongoing access to therapeutic services, support groups, and trainings (Child Welfare Information Gateway 2012). The provision of (and targeted federal funding for) supports to adoptive and guardianship families signals a recognition that such arrangements may require ongoing support to be successful. Reunified families, in contrast, typically receive no such long-term supports or resources. Thus, it is possible that reunified youth are at high risk of adverse adult outcomes precisely because they are treated as though they are not at risk. Notably, we also found no evidence that guardianship or similar permanency arrangements, which predominately constitute placements with kin, was beneficial compared with aging out or adoption. This may reflect structural factors: federal policy of providing funding to support guardianships was not in place until 2008, though Wisconsin’s program began somewhat earlier (Children’s Defense Fund 2004), and kinship foster parents have traditionally received less financial support than non-relative foster parents (Murray, Macomber, and Geen 2004).

In addition to structural constraints faced by families, family environment and characteristics may help to explain the effects of exit type on educational attainment and earnings.

Adoptive, foster, and guardianship parents are subject to screening and evaluation processes (Child Welfare Information Gateway 2016) and, though standards can vary, such processes should exclude those families least able to provide a suitable home environment. In addition, evidence suggests that adoptive parents are, on average, more emotionally, socially, and economically advantaged than birth parents whose children have been removed (Kreider and Lofquist 2014); such factors are associated with better child and youth development in both biological and adoptive homes (Heckman 2008; Plug and Vijverberg 2005; Sacerdote 2000, 2007; Sandefur, Meier, and Campbell 2006). That similar screening and selection processes are applicable to foster parents (Child Welfare Information Gateway 2014; Dolan et al. 2011), albeit to a somewhat less-intensive extent, may imply benefits for youth in stable family-based foster settings. To the contrary, kinship foster parents (the pool most likely to provide permanency without adoption) tend to be less socioeconomically advantaged than non-relative foster or adoptive parents, and are more similar in education, income, and family structure to children's birth parents (Dolan et al. 2011).

Our findings suggest that—at least with respect to educational attainment and earnings in early adulthood—there is cause for some degree of optimism in a context in which aging out is a relatively common experience. Furthermore, our finding that greater duration (dosage) in care is beneficial with respect to subsequent education and earnings, particularly among those aging out of care, provides some suggestive evidence that foster care, itself, may help to support self-sufficiency. This too, runs contrary to both perception and policy, as a primary impetus for the Adoption and Safe Families Act of 1997 was the presumption that children were being stranded in foster care, to their own detriment, while awaiting permanency (Golden and Macomber 2009). Notably, in our models that did not control for foster care experiences (e.g., number of placements, time in restrictive care settings), differences between aged out and reunified were slightly diminished, whereas differences between adopted and all other youth were stronger. This may suggest that outcomes for aged-out youth will be most optimal when the foster care system provides stability and a family-like environment, whereas the benefits attributed to permanency do not, per se, require legal permanency.

Current federal performance standards for state foster care systems designate shorter durations in foster care as an unambiguous positive (Administration for Children and Families 2014; U.S. Department of Health and Human Services 2013). Future research should further assess whether, and how, post-permanency supports can minimize duration in care while also ensuring that permanency provides children with safe and supportive environments. For some children, however, permanency may not be achieved quickly or at all. Thus, research is needed to understand whether and how longer duration in care is, in fact, harmful, as well as what mechanisms likely link foster care duration, exit type, and young adult outcomes. One possible avenue for exploration among youth aging out of care is whether they develop more or stronger connections with foster parents, caseworkers, or other supportive or mentoring persons when they spend more time in care. Youth in foster care are believed to experience more positive adjustment when they have adult mentors (Ahrens et al. 2008, 2011), and youth with longer stays in foster care have greater opportunities to develop new and enduring supports that follow them into adulthood. Though some have argued that permanency supports the acquisition of natural mentors

(Pecora 2012), non-parental mentors are beneficial for educational attainment above and beyond parental relationships (Soucy and Larose 2000), and those in care for long periods and who know they are not returning home may have greater incentives to develop and invest in supportive relationships. Unfortunately, we cannot assess the quality or quantity of supportive relationships that youth have with the administrative data used in our study. This area is ripe for future inquiry. In addition, concern for the plight of youth aging out care has resulted in policy changes that have addressed the needs of aged-out youth, including educational supports, extended Medicaid eligibility, and the potential for remaining in foster care past age 18. These supports may be equivalent, or even superior, to the educational, medical, and housing supports that children received when reunified, adopted, or placed in guardianship. More research is needed to assess the role of these policies in explaining the relatively positive outcomes found for aged-out youth. We also caution that some results were sensitive to the categorization of youth who ran away or were detained prior to reaching age 18; outcomes for these groups were especially poor. Future research on the antecedents of running away in foster care is critical to forming evidence-based prevention strategies and improving outcomes for older youth in foster care.

Despite this study's strengths, there are also limitations that should be considered. First, because electronic records were not available for Wisconsin's child welfare system until 2004, our sample included only youth who entered foster care between ages 8 and 15. As a result, our sample underrepresents children who exit to adoption and over-represents those who age out of care. In addition, because children who enter at an older age tend to have greater social and emotional difficulties, our sample constitutes a higher-risk sample of foster children.

Second, there are likely selection mechanisms that we are unable to observe or measure. For example, youth who do not reunify may have suffered more severe harms (such that reunification was never considered) or may have parents who were less committed to or able to facilitate their return. State and federal law require efforts to reunify unless a parent committed an especially egregious act against the child, such as attempted murder, sexual abuse, or abandonment. Thus, reunification is usually sought and whether it occurs depends on a variety of factors, of which the biological parents' compliance with treatment services is perhaps most significant (D'Andrade and Nguyen 2014). Parents who are most committed to their children, as well as most motivated and able to change the factors that led to child removal, should thus be most likely to reunify; children of such parents may, irrespective of reunification, be more well-adjusted. Similarly, characteristics favorable to educational attainment, such as motivation to succeed, stable temperament, and cognitive ability, may also affect whether children are adopted or have relatives willing to assume permanent custody. Due to these potential unobserved selection factors, we cannot ensure we are detecting causal associations. Notably, however, selection bias should largely disfavor youth who aged out. Hence, our findings that aged-out youth appear to attain comparatively higher levels of education and earnings than reunified youth and those placed in guardianship or like arrangements, and generally similar levels of education and earnings as those of adopted youth, are particularly noteworthy. Indeed, our findings suggest that youth who age out of care are as or more prepared for education- and work-related transitions to adulthood as those experiencing foster care exits (reunification, adoption, permanent guardianship) for

which policy stipulates an explicit preference. Certainly, educational and economic success are not the only indicators of successful transition to adulthood, however, and we caution that aged-out youth may be comparatively disadvantaged in other life domains, which should be the focus of future research in this area.

Finally, our findings may not be generalizable to other states. States and, in many cases, counties, have considerable autonomy in setting policy for their child welfare systems and prioritizing expenditures. Some states and counties may, for example, heavily emphasize supports for aging-out youth and provide fewer post-reunification services. The balance of supports to children and families post-permanency or during preparation for emancipation may produce differential effects of exit type across states. In addition, state practices can affect patterns of selection into exit type; for example, states with highly effective adoption recruitment practices should have fewer highly-functioning children who never achieve permanency, whereas states that do not have effective recruitment practices should have higher levels of heterogeneity in their aging out population. We therefore encourage replication of this study in other states.

Notwithstanding these cautions, this study provides new evidence that, despite concerns about educational and economic outcomes of youth who age out of care, they do not, on average, fare worse in terms of education and earnings than foster care youth who reunify with their families, who are placed in permanent guardianship or similar custody arrangement, or who are adopted. Rather, youth who age out appear to have more favorable outcomes than those who reunify: they are more likely to complete high school and enroll in college, and they experience similar earnings. Moreover, these advantages appear to accumulate over time spent in care, such that they are larger for youth who spend a greater length of time in foster care. This implies that programs and services, including independent living preparation, should target the larger group of youths experiencing foster care rather than specifically focusing on those who age out or are at high risk thereof. The United States serves hundreds of thousands of children in the foster care system each year, many of whom experience poor life outcomes. Without robust evidence on the importance of system priorities for helping foster youth achieve their full potential, the hardships faced by former foster youth are likely to perpetuate. The results of this study, among the first to examine the relationship between permanency and youth outcomes, suggest that permanency is not the most critical factor for promoting the educational and economic success of youth entering adulthood.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

Acknowledgements

This work was funded by the Eunice Kennedy Shriver National Institute of Child Health and Human Development (1 R21 HD091459-01) and with support from the Population Research Institute at Penn State University (P2CHD041025). We thank the Wisconsin Dept. of Children and Families, Dept. of Health Services, Dept. of Corrections, Dept. of Public Instruction, and Dept. of Workforce Development for the use of data, but acknowledge that these agencies do not certify the accuracy of the analyses presented.

REFERENCES

- Administration for Children and Families. 2014 Final Notice of Statewide Data Indicators and National Standards for Child and Family Services Reviews. Washington DC: Children's Bureau.
- Ahrens Kym R. et al. 2011 "Qualitative Exploration of Relationships with Important Non-Parental Adults in the Lives of Youth in Foster Care." *Children and Youth Services Review* 33(6):1012–1023. [PubMed: 22661797]
- Ahrens Kym R., David Lane DuBois Laura P. Richardson, Fan Ming-Yu, and Lozano Paula. 2008 "Youth in Foster Care with Adult Mentors during Adolescence Have Improved Adult Outcomes." *Pediatrics* 121(2):e246–e252. [PubMed: 18182469]
- Allen Reva I., Westerfelt Alex, Piliavin Irving, and McDonald Thomas P. 1997 *Assessing the Long-Term Effects of Foster Care: A Research Synthesis*. MI: Child Welfare League of America Press Retrieved January 28, 2015 (<http://eric.ed.gov/?id=ED408036>).
- Andersen Signe Hald and Wildeman Christopher. 2014 "The Effect of Paternal Incarceration on Children's Risk of Foster Care Placement." *Social Forces* 93(1):269–298.
- Baer Judith C. and Colleen Daly Martinez. 2006 "Child Maltreatment and Insecure Attachment: A Meta-Analysis." *Journal of Reproductive and Infant Psychology* 24(3):187–197.
- Barth Richard P., Wildfire Judy, and Green Rebecca L. 2006 "Placement into Foster Care and the Interplay of Urbanicity, Child Behavior Problems, and Poverty." *American Journal of Orthopsychiatry*.
- Bellamy Jennifer L. 2008 "Behavioral Problems Following Reunification of Children in Long-Term Foster Care." *Children and Youth Services Review* 30(2):216–28. [PubMed: 19190714]
- Berger Lawrence M., Font Sarah A., Slack Kristen S., and Waldfogel Jane. 2017 "Income and Child Maltreatment in Unmarried Families: Evidence from the Earned Income Tax Credit." *Review of Economics of the Household* 15(4):1345–72. [PubMed: 29456463]
- Biehal Nina. 2007 "Reuniting Children with Their Families: Reconsidering the Evidence on Timing, Contact and Outcomes." *British Journal of Social Work* 37(5):807–23.
- Brook Jody and Tom McDonald. 2009 "The Impact of Parental Substance Abuse on the Stability of Family Reunifications from Foster Care." *Children and Youth Services Review* 31(2):193–198.
- Buchmann Claudia, DiPrete Thomas A., and Anne McDaniel. 2008 "Gender Inequalities in Education." *Annu. Rev. Sociol* 34:319–337.
- Child Welfare Information Gateway. 2015a *Health-Care Coverage for Youth in Foster Care— and After*. Washington DC: U.S. Department of Health and Human Services.
- Child Welfare Information Gateway. 2014 *Home Study Requirements for Prospective Foster Parents*. Washington DC: U.S. Department of Health and Human Services.
- Child Welfare Information Gateway. 2016 *Home Study Requirements for Prospective Parents in Domestic Adoption*. Washington DC: U.S. Department of Health and Human Services, Children's Bureau.
- Child Welfare Information Gateway. 2015b *Kinship Guardianship as a Permanency Option*. Washington DC: U.S. Department of Health and Human Services, Children's Bureau.
- Child Welfare Information Gateway. 2012 *Providing Postadoption Services*. Retrieved (https://www.childwelfare.gov/pubPDFs/f_postadoptbulletin.pdf).
- Children's Defense Fund. 2004 *States' Subsidized Guardianship Laws at a Glance*. Retrieved (<http://www.childrensdefense.org/library/data/state-subsidized-guardianship-laws.pdf>).
- Collins Mary Elizabeth, Paris Ruth, and Ward Rolanda L. 2008 "The Permanence of Family Ties: Implications for Youth Transitioning from Foster Care." *American Journal of Orthopsychiatry* 78(1):54–62. [PubMed: 18444727]
- Connell Christian M. et al. 2009 "Maltreatment Following Reunification: Predictors of Subsequent Child Protective Services Contact after Children Return Home." *Child Abuse & Neglect* 33(4):218–28. [PubMed: 19327834]
- Coulton Claudia J., Korbin Jill E., and Su Marilyn. 1999 "Neighborhoods and Child Maltreatment: A Multi-Level Study." *Child Abuse & Neglect* 23(11):1019–40. [PubMed: 10604060]

- Courtney Mark E. et al. 2011 *Midwest Evaluation of Adult Functioning of Former Foster Youth: Outcomes at Age 26*. Chicago, IL: Chapin Hall.
- D'Andrade Amy C. and Nguyen Huong. 2014 "The Relationship between Use of Specific Services, Parental Problems, and Reunification with Children Placed in Foster Care." *Journal of Public Child Welfare* 8(1):51–69.
- Demo David H. and Hughes Michael. 1990 "Socialization and Racial Identity among Black Americans." *Social Psychology Quarterly* 364–374.
- Dolan Melissa, Smith Keith, Casanueva Cecilia, and Ringeisen Heather. 2011 *Nscaw II Baseline Report: Introduction to Nscaw II Final Report OPRE Report 2011–27a*. Washington, DC: Office of Planning, Research and Evaluation, Administration for Children and Families, U.S. Department of Health and Human Services.
- Dozier Mary and Lindhiem Oliver. 2006 "This Is My Child: Differences Among Foster Parents in Commitment to Their Young Children." *Child Maltreatment* 11(4):338–45. [PubMed: 17043318]
- Drake Brett and Pandey Shanta. 1996 "Understanding the Relationship between Neighborhood Poverty and Specific Types of Child Maltreatment." *Child Abuse & Neglect* 20(11):1003–18. [PubMed: 8958452]
- English Diana J., Thompson Richard, and Catherine Roller White. 2015 "Predicting Risk of Entry into Foster Care from Early Childhood Experiences: A Survival Analysis Using LONGSCAN Data." *Child Abuse & Neglect* 45:57–67. [PubMed: 25982428]
- Evan B. Donaldson Institute. 2008 *Finding Families for African American Children: The Role of Race & Law in Adoption from Foster Care*. NY Retrieved (<https://www.adoptioninstitute.org/wp-content/uploads/2013/12/MEPApaper20080527.pdf>).
- Folman Rosalind D. 1998 "'I Was Taken' How Children Experience Removal from Their Parents Preliminary to Placement into Foster Care." *Adoption Quarterly* 2(2):7–35.
- Furstenberg Frank Jr. 2010 "On a New Schedule: Transitions to Adulthood and Family Change." *Future of Children* 20(1):67–87. [PubMed: 20364622]
- Gibbs Benjamin G., Shafer Kevin, and Miles Aaron. 2017 "Inferential Statistics and the Use of Administrative Data in US Educational Research." *International Journal of Research & Method in Education* 40(2):214–20.
- Golden Olivia and Macomber Jennifer. 2009 *The Adoption and Safe Families Act (ASFA)*. Center for the Study of Social Policy, Urban Institute.
- Goldsmith Douglas F., Oppenheim David, and Wanlass Janine. 2004 "Separation and Reunification: Using Attachment Theory and Research to Inform Decisions Affecting the Placements of Children in Foster Care." *Juv. & Fam. Ct. J.* 55:1.
- Heckman James J. 2008 "Schools, Skills, and Synapses." *Economic Inquiry* 46(3):289–324. [PubMed: 20119503]
- Hildyard Kathryn L. and Wolfe David A. 2002 "Child Neglect: Developmental Issues and Outcomes." *Child Abuse & Neglect* 26(6–7):679–95. [PubMed: 12201162]
- Killewald Alexandra, Pfeffer Fabian T., and Schachner Jared N. 2017 "Wealth Inequality and Accumulation." *Annual Review of Sociology* (0). Retrieved (<http://www.annualreviews.org/doi/abs/10.1146/annurev-soc-060116-053331>).
- Krapohl Eva et al. 2014 "The High Heritability of Educational Achievement Reflects Many Genetically Influenced Traits, Not Just Intelligence." *Proceedings of the National Academy of Sciences* 111(42):15273–78.
- Kreider Rose M. and Lofquist Daphne A. 2014 *Adopted Children and Stepchildren: 2010 Population Characteristics*. U.S. Census Bureau, U.S. Department of Commerce.
- Kreider Rose M. and Raleigh Elizabeth. 2016 "Residential Racial Diversity: Are Transracial Adoptive Families More Like Multiracial or White Families?*" *Social Science Quarterly* (Wiley-Blackwell) 97(5):1189–1207.
- Lindsey Duncan. 1991 "Factors Affecting the Foster Care Placement Decision: An Analysis of National Survey Data." *American Journal of Orthopsychiatry* 61(2):272–81. [PubMed: 2048642]
- Lloyd E, Christopher and Barth Richard P. 2011 "Developmental Outcomes after Five Years for Foster Children Returned Home, Remaining in Care, or Adopted." *Children and Youth Services Review* 33(8):1383–91.

- Maas Carl, Herrenkohl Todd I., and Sousa Cynthia. 2008 "Review of Research on Child Maltreatment and Violence in Youth." *Trauma, Violence, & Abuse* 9(1):56–67.
- McLanahan Sara and Percheski Christine. 2008 "Family Structure and the Reproduction of Inequalities." *Annu. Rev. Sociol* 34:257–276.
- Monaghan David. 2017 "Does College Enrollment and Bachelor's Completion by Mothers Impact Children's Educational Outcomes?" *Sociology of Education* 90(1):3–24.
- Murray Julie, Jennifer Ehrle Macomber, and Rob Geen. 2004 Estimating Financial Support for Kinship Caregivers. Urban Institute: Washington, DC Retrieved October 12, 2015 (<http://www.urban.org/research/publication/estimating-financial-support-kinship-caregivers>).
- Pecora Peter J. et al. 2006 "Educational and Employment Outcomes of Adults Formerly Placed in Foster Care: Results from the Northwest Foster Care Alumni Study." *Children and Youth Services Review* 28(12):1459–81.
- Pecora Peter J. 2012 "Maximizing Educational Achievement of Youth in Foster Care and Alumni: Factors Associated with Success." *Educational Interventions, Practices, and Policies to Improve Educational Outcomes Among Children and Youth in Out-of-Home Care* 34(6):1121–29.
- Pilowsky Daniel J. and Wu Li-Tzy. 2006 "Psychiatric Symptoms and Substance Use Disorders in a Nationally Representative Sample of American Adolescents Involved with Foster Care." *Journal of Adolescent Health* 38(4):351–58. [PubMed: 16549295]
- Plug Erik and Vijverberg Wim. 2005 "Does Family Income Matter for Schooling Outcomes? Using Adoptees as a Natural Experiment." *The Economic Journal* 115(506):879–906.
- Roberts Dorothy E. 2012 "Prison, Foster Care, and the Systemic Punishment of Black Mothers." Retrieved April 12, 2017 (https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2184329).
- Sacerdote Bruce. 2007 "How Large Are the Effects from Changes in Family Environment? A Study of Korean American Adoptees." *The Quarterly Journal of Economics* 122(1):119–157.
- Sacerdote Bruce. 2000 The Nature and Nurture of Economic Outcomes. National Bureau of Economic Research Retrieved April 13, 2017 (<http://www.nber.org/papers/w7949>).
- Sandefur Gary D., Meier Ann M., and Campbell Mary E. 2006 "Family Resources, Social Capital, and College Attendance." *Social Science Research* 35(2):525–553.
- Schofield Gillian and Beek Mary. 2005 "Providing a Secure Base: Parenting Children in Long-Term Foster Family Care." *Attachment & Human Development* 7(1):3–26. [PubMed: 15981613]
- Sedlak Andrea J. et al. 2010 "Fourth National Incidence Study of Child Abuse and Neglect (NIS-4)." Washington, DC: US Department of Health and Human Services Retrieved on July 9:2010.
- Sharkey Patrick. 2008 "The Intergenerational Transmission of Context." *American Journal of Sociology* 113(4):931–969.
- Shook Jeffrey J. et al. 2013 "How Different Are Their Experiences and Outcomes? Comparing Aged out and Other Child Welfare Involved Youth." *Children and Youth Services Review* 35(1):11–18. [PubMed: 29167589]
- Snowden Jessica, Leon Scott, and Sieracki Jeffrey. 2008 "Predictors of Children in Foster Care Being Adopted: A Classification Tree Analysis." *Children and Youth Services Review* 30(11):1318–1327.
- Soucy Nathalie and Larose Simon. 2000 "Attachment and Control in Family and Mentoring Contexts as Determinants of Adolescent Adjustment at College." *Journal of Family Psychology* 14(1):125. [PubMed: 10740687]
- Steele Julie S. and Buchi Karen F. 2008 "Medical and Mental Health of Children Entering the Utah Foster Care System." *Pediatrics* 122(3):e703–9. [PubMed: 18762506]
- Taussig Heather N., Clyman Robert B., and Landsverk John. 2001 "Children Who Return Home From Foster Care: A 6-Year Prospective Study of Behavioral Health Outcomes in Adolescence." *Pediatrics* 108(1):e10–e10. [PubMed: 11433089]
- Trout Alexandra L., Haganam Jessica, Casey Kathryn, Reid Robert, and Epstein Michael H. 2008 "The Academic Status of Children and Youth in Out-of-Home Care: A Review of the Literature." *Children and Youth Services Review* 30(9):979–94.
- Tyler John H. and Lofstrom Magnus. 2009 "Finishing High School: Alternative Pathways and Dropout Recovery." *The Future of Children* 19(1):77–103. [PubMed: 21141706]

- U.S. Department of Health and Human Services. 2013 Child Welfare Outcomes 2010–2013: Report to Congress. Washington DC: Children’s Bureau Retrieved (<http://www.acf.hhs.gov/programs/cb/resource/cwo-10-13>).
- U.S. Department of Health and Human Services. 2011 Children Adopted from Foster Care: Adoption Agreements, Adoption Subsidies, and Other Post-Adoption Supports. Office of the Assistant Secretary for Planning and Evaluation Retrieved (https://aspe.hhs.gov/basic-report/children-adopted-foster-care-adoption-agreements-adoption-subsidies-and-other-post-adoption-supports#_Toc300132864).
- U.S. Department of Health and Human Services. 2016 The AFCARS Report: Preliminary FY 2015 Estimates as of June 2016. Washington, DC: Author, Administration for Children and Families, Children’s Bureau.
- Weigert Andrew J. and Hastings Ross. 1977 “Identity Loss, Family, and Social Change.” *American Journal of Sociology* 82(6):1171–1185.
- Whiting Jason B. and Lee Robert E. 2003 “Voices from the System: A Qualitative Study of Foster Children’s Stories.” *Family Relations* 52(3):288–295.
- Wildeman Christopher and Emanuel Natalia. 2014 “Cumulative Risks of Foster Care Placement by Age 18 for US Children, 2000–2011.” *PloS One* 9(3):e92785. [PubMed: 24671254]
- Wildeman Christopher and Waldfogel Jane. 2014 “Somebody’s Children or Nobody’s Children? How the Sociological Perspective Could Enliven Research on Foster Care.” *Annual Review of Sociology* 40:599–618.
- Wulczyn Fred. 2004 “Family Reunification.” *The Future of Children* 14(1):95–113.
- Zaslow Martha J. and Hayes Cheryl D. 1986 “Sex Differences in Children’s Response to Psychosocial Stress: Toward a Cross-Context Analysis.” *Advances in Developmental Psychology* 4:285–337.
- Zhang Yuanting and Lee Gary R. 2011 “Intercountry versus Transracial Adoption: Analysis of Adoptive Parents’ Motivations and Preferences in Adoption.” *Journal of Family Issues* 32(1):75–98.
- Zuravin Susan J. and Diane DePanfilis. 1997 “Factors Affecting Foster Care Placement of Children Receiving Child Protective Services.” *Social Work Research* 21(1):34–42.

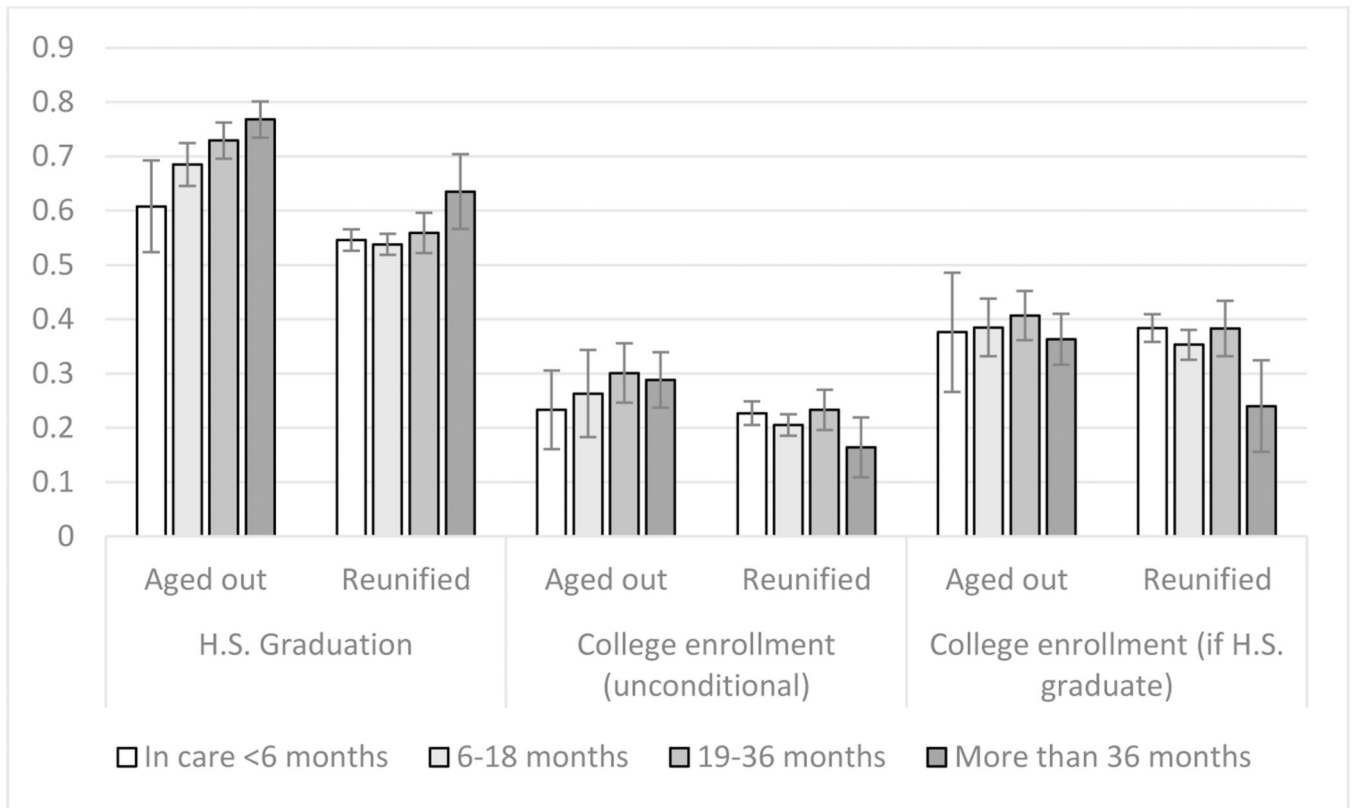


Figure 1.
 Predicted Probabilities of H.S. Graduation and College Enrollment, Aged out vs. Reunified
 by Duration in Care

Table 1.

Descriptive Statistics by Permanency Type

	Aged Out	Adopted	Reunified	Other Permanency
<i>N</i>	1,885	205	5,581	781
Duration in care				
< 6 months ^{bcdef}	0.06	0.07	0.46	0.24
6 – 18 months [*]	0.26	0.16	0.39	0.44
19–36 months [*]	0.33	0.45	0.12	0.23
36 months + ^{bcdef}	0.34	0.32	0.03	0.1
Placement				
% Time in kinship care ^{acdef}	0.16 (0.32)	0.28 (0.42)	0.15 (0.34)	0.64 (0.43)
% Time in congregate care [*]	0.33 (0.37)	0.05 (0.17)	0.56 (0.45)	0.14 (0.30)
# of placements ^{abcf}	5.35 (4.94)	2.68 (2.17)	2.90 (3.05)	2.46 (2.38)
Removal				
Multiple entries ^{abcdf}	0.28	0.15	0.25	0.18
Age at first entry [*]	14.99 (1.99)	12.05 (2.21)	14.53 (1.92)	13.96 (2.17)
Gender ^{bdf}				
Male	0.49	0.53	0.58	0.49
Female	0.51	0.47	0.42	0.51
Race/Ethnicity				
Black ^{bcdf}	0.31	0.30	0.21	0.25
White ^{bf}	0.55	0.57	0.62	0.54
Asian	0.01	0.02	0.02	0.01
American Indian	0.04	0.04	0.05	0.06
Hispanic	0.06	0.06	0.07	0.09
Multiracial	0.04	0.02	0.03	0.04
Unknown	<.01	<.01	<.01	<.01
Birth year				
1989 ^{df}	0.05	0.02	0.06	0.04
1993 ^{ade}	0.13	0.02	0.13	0.11
1991	0.14	0.09	0.14	0.11
1992 ^{ade}	0.15	0.08	0.15	0.14
1993	0.17	0.12	0.14	0.14
1994	0.14	0.15	0.14	0.13
1995 ^{ade}	0.13	0.27	0.12	0.16
1996 ^{abcdf}	0.09	0.25	0.12	0.16
SSI receipt in childhood ^{abc}	0.21	0.11	0.17	0.13

	Aged Out	Adopted	Reunified	Other Permanency
<i>N</i>	1,885	205	5,581	781
Age 0 to 5: SNAP receipt ^{bcd^f}	0.70	0.74	0.67	0.82
Age 0 to 5: Welfare receipt ^{bcd^f}	0.55	0.43	0.5	0.59
Age 0 to 5: Mother incarcerated ^b	0.02	0.02	0.01	0.02
Age 0 to 5: Mother's mean wages ^{bde}	4387.28 (9295.81)	4379.14 (6805.72)	6198.28 (9525.92)	4252.21 (6033.08)
Age 0 to 5: Mother's mean quarters employed ^{abc}	1.23 (1.27)	1.41 (1.25)	1.59 (1.38)	1.47 (1.27)
Marital birth	0.27	0.19	0.32	0.24
Nonmarital birth ^{abcd^f}	0.58	0.67	0.53	0.68
Unknown birth type	0.15	0.14	0.15	0.09
Num. of children to mother	3.92 (2.33)	3.97 (2.10)	3.57 (2.01)	3.88 (2.10)
Num. of fathers to mother's children	1.71 (1.18)	1.80 (1.12)	1.63 (1.06)	1.93 (1.21)
Child support order	0.65	0.69	0.70	0.73
Maltreatment allegations ^{bdf}	0.75	0.79	0.62	0.75
Sexual abuse or exploitation ^{ace}	0.30	0.32	0.22	0.20
Physical abuse ^{bc}	0.40	0.35	0.33	0.30
General neglect ^{bdf}	0.47	0.52	0.31	0.52
Supervision neglect	0.06	0.07	0.06	0.07

Note: 8,452 observations. Means (and standard deviations) or proportions presented.

* All groups significantly different on this measure at $p < .01$.

^a. Aged out adopted.

^b. Aged out reunified.

^c. Aged out other permanency.

^d. Adopted reunified.

^e. Adopted other permanency.

^f. Reunified other permanency.

Table 2.

Logit Results, High School Graduation

	b(SE)	OR
<i>Model 1. Sociodemographic and family controls</i>		
Type of exit (reference is aged out)		
Adopted	.72 (.21) ^{***ac}	2.05
Reunified	-.66 (.06) ^{***bc}	0.52
Other permanency	-.10 (.10) ^{ab}	0.90
Age at first entry	-.05 (.01) ^{***}	0.95
<i>Model 2. Add foster care-specific controls</i>		
Type of exit (reference is aged out)		
Adopted	.17 (.21) ^{ac}	1.19
Reunified	-.74 (.08) ^{***b}	0.48
Other permanency	-.46 (.11) ^{***}	0.63
Time in care (reference is <6 months)		
6–18 months	-.00 (.06)	1.00
19–36 months	.15 (.09)	1.16
More than 36 months	.42 (.12) ^{**}	1.52
Number of placements	-.13 (.01) ^{***}	0.88
% time in congregate care	-.56 (.07) ^{***}	0.57
% time in kinship care	-.00 (.09)	1.00
Multiple entries	-.08 (.06)	0.92
Age at first entry	-.06 (.02) ^{***}	0.94

Note: Log odds coefficients with standard errors in parentheses. OR=Odds ratios. County fixed effects included.

^a Different from Reunified at $p < .05$

^b Different from Adopted at $p < .05$;

^c Different from Other permanency at $p < .05$.

* $p < .05$

** $p < .01$

*** $p < .001$

Table 3.

Logit Results, College Enrollment

	b(SE)	OR
<i>Unconditional</i>		
<i>Model 1. Sociodemographic and family controls</i>		
Type of exit (reference is aged out)		
Adopted	.52 (.17) ^{***ac}	1.68
Reunified	-.36 (.07) ^{***bc}	0.70
Other permanency	-.07 (.10) ^{ab}	0.88
Age at first entry	-.06 (.02) ^{***}	0.94
<i>Model 2. Add foster care-specific controls</i>		
Type of exit (reference is aged out)		
Adopted	.21 (.17) ^{ac}	1.23
Reunified	-.40 (.09) ^{***b}	0.67
Other permanency	-.36 (.11) ^{**b}	0.70
Time in care (reference is <6 months)		
6–18 months	-.11 (.07)	0.90
19–36 months	.07 (.09)	1.07
More than 36 months	-.07 (.13)	0.93
Number of placements	-.07 (.01) ^{***}	0.93
% time in congregate care	-.57 (.08) ^{***}	0.57
% time in kinship care	.11 (.09)	1.12
Multiple entries	-.05 (.07)	0.95
Age at first entry	-.06 (.02) ^{***}	0.94
<i>Conditional on High School Graduation</i>		
<i>Model 1. Sociodemographic and family controls</i>		
Type of exit (reference is aged out)		
Adopted	.37 (.18) ^{***ac}	1.45
Reunified	-.16 (.08) ^{*b}	0.85
Other permanency	-.01 (.12) ^b	0.99
Age at first entry	-.05 (.02) ^{**}	0.95
<i>Model 2. Add foster care-specific controls</i>		
Type of exit (reference is aged out)		
Adopted	.25 (.19) ^{ac}	1.28
Reunified	-.18 (.10) ^b	0.84
Other permanency	-.19 (.13) ^b	0.83
Time in care (reference is <6 months)		

	b(SE)	OR
6–18 months	-.13 (.08)	0.88
19–36 months	-.03 (.11)	0.97
More than 36 months	-.31 (.15) [*]	0.73
Number of placements	.00 (.01)	1.00
% time in congregate care	-.37 (.09) ^{***}	0.69
% time in kinship care	.16 (.10)	1.17
Multiple entries	-.07 (.09)	0.93
Age at first entry	-.05 (.02) ^{**}	0.95

Note: Log odds coefficients with standard errors in parentheses. OR=Odds ratios. All models include county fixed effects.

^a Different from Reunified at $p < .05$

^b Different from Adopted at $p < .05$;

^c Different from Other permanency at $p < .05$.

^{*}
 $p < 0.05$

^{**}
 $p < 0.01$

^{***}
 $p < .001$

Table 4.

Educational Attainment, Aging out Vs. Reunification by Duration in Care

	b(SE)	OR
<i>HS Graduation</i>		
Reunified (vs. Aged out)	-.30 (.22)	0.74
Duration in care (reference < 6 months)		
6–18 months	.39 (.23)	1.48
19–36 months	.64 (.23)**	1.90
More than 36 months	.88 (.24)***	2.41
Reunified X 6–18 months	-.43 (.24)	0.65
Reunified X 19–36 months	-.58 (.24)*	0.56
Reunified X More than 36 months	-.45 (.29)	0.64
<i>College Enrollment</i>		
Reunified (vs. Aged out)	-.04 (.24)	0.96
Duration in care (reference < 6 months)		
6–18 months	.18 (.25)	1.20
19–36 months	.40 (.25)	1.49
More than 36 months	.32 (.26)	1.38
Reunified X 6–18 months	-.33 (.26)	0.72
Reunified X 19–36 months	-.36 (.27)	0.70
Reunified X More than 36 months	-.77 (.35)*	0.46
<i>College Enrollment, conditional on HS graduation</i>		
Reunified (vs. Aged out)	.04 (.28)	1.04
Duration in care (reference < 6 months)		
6–18 months	.04 (.29)	1.04
19–36 months	.15 (.29)	1.16
More than 36 months	-.07 (.30)	0.93
Reunified X 6–18 months	-.19 (.30)	0.83
Reunified X 19–36 months	-.16 (.31)	0.85
Reunified X More than 36 months	-.70 (.39)	0.50

Note: Log odds coefficients with standard errors in parentheses. OR=odds ratios. Models include all covariates from Table 1 and county fixed effects.

* $p < .05$

** $p < .01$

*** $p < .001$

Table 5.

Mixed-Effects Models Results, Earnings

	Unconditional	Excluding College-Enrolled
	<i>b</i> (<i>SE</i>)	<i>b</i> (<i>SE</i>)
<i>Model 1. Sociodemographic and family controls</i>		
Type of exit (reference is aged out)		
<i>Intercepts</i>		
Adopted	0.43 (0.21) ^{*a}	0.16 (0.26)
Reunified	-0.02 (0.08) ^{bc}	0.20 (0.08) [*]
Other permanency	0.21 (0.12) ^a	0.33 (0.13) [*]
<i>Slopes</i>		
Adopted [*] time	0.06 (0.02) ^{**a}	0.05 (0.02) [*]
Reunified [*] time	0.01 (0.01) ^{bc}	0.01 (0.01) ^c
Other permanency [*] time	0.04 (0.01) ^{**a}	0.04 (0.01) ^{**c}
Time since 18th birthday	0.07 (0.00) ^{***}	0.07 (0.01) ^{***}
Age at first entry	-0.04 (0.02) [*]	-0.01 (0.02)
<i>Model 2. Add foster care-specific controls</i>		
Type of exit (reference is aged out)		
<i>Intercepts</i>		
Adopted	0.11 (0.21)	-0.05 (0.26)
Reunified	-0.08 (0.09)	0.10 (0.10)
Other permanency	-0.21 (0.13)	-0.04 (0.14)
<i>Slopes</i>		
Adopted [*] time	0.05 (0.02) ^{**a}	0.05 (0.02) [*]
Reunified [*] time	0.01 (0.01) ^{bc}	0.01 (0.01) ^c
Other permanency [*] time	0.04 (0.01) ^{**a}	0.04 (0.01) ^{**a}
Time since 18th birthday	0.07 (0.00) ^{***}	0.07 (0.01) ^{***}
<i>Foster care controls</i>		
Time in care (reference is <6 months)		
6–18 months	-0.19 (0.07) ^{**}	-0.18 (0.08) [*]
19–36 months	-0.13 (0.10)	-0.15 (0.11)
More than 36 months	-0.08 (0.14)	-0.18 (0.15)
Number of placements	-0.06 (0.01) ^{***}	-0.03 (0.01) ^{**}
% time in congregate care	-0.52 (0.09) ^{***}	-0.32 (0.09) ^{***}
% time in kinship care	0.40 (0.10) ^{***}	0.44 (0.11) ^{***}
Multiple entries	-0.01 (0.07)	-0.06 (0.08)
Age at first entry	-0.04 (0.02) [*]	-0.02 (0.02)

Note: Linear coefficients with standard errors in parentheses. All models include county fixed effects. Models excluding college enrollees control for high school completion.

^a Different from Reunified at $p < .05$

^b Different from Adopted at $p < .05$;

^c Different from Other permanency at $p < .05$

*
 $p < 0.05$

**
 $p < 0.01$

 $p < .001$

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Table 6.

Logged Quarterly Wages, Aged out Vs. Reunified by Time in Care

	Basic Model	Excluding Those Enrolled in College
	<i>b</i> (<i>SE</i>)	<i>b</i> (<i>SE</i>)
<i>Intercepts</i>		
Reunified (vs. Aged out)	0.80 (0.26) **	0.77 (0.28) **
Duration in care (reference < 6 months)		
6–18 months	0.44 (0.27)	0.26 (0.30)
19–36 months	0.82 (0.27) **	0.52 (0.30)
More than 36 months	0.83 (0.28) **	0.51 (0.31)
Reunified X 6–18 months	-0.68 (0.29) *	-0.50 (0.31)
Reunified X 19–36 months	-1.18 (0.29) ***	-0.84 (0.32) **
Reunified X More than 36 months	-1.30 (0.34) ***	-0.98 (0.37) **
<i>Slopes</i>		
Time since 18th Birthday	0.09 (0.02) ***	0.07 (0.02) ***
Reunified X Time since 18th birthday	-0.00 (0.02)	0.01 (0.02)
Duration in care X Time		
6–18 months X time	-0.02 (0.02)	-0.01 (0.02)
19–36 months X time	-0.02 (0.02)	-0.00 (0.02)
More than 36 months X time	0.00 (0.02)	0.01 (0.02)
Reunified X Duration X Time		
6–18 months X Reunified X time	0.02 (0.02)	0.01 (0.02)
19–36 months X Reunified X time	0.01 (0.02)	-0.00 (0.03)
More than 36 months X Reunified X time	0.03 (0.03)	0.01 (0.03)

Note: Linear coefficients with standard errors in parentheses. Models include all covariates from Table 1 and county fixed effects. Models excluding college enrollees control for high school completion.

*
 $p < .05$

**
 $p < .01$

 $p < .001$