Pathways to Economic Outcomes and the Impact of Health: Comparing Hispanic and Non-Hispanic Adults after Foster Care

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Acknowledgements
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INTRODUCTION

Support from caring adults is critical to living successfully in the community. Youth emancipating from care with no “forever family” and without a support network of adults is a major concern. In September 31, 2016, there were 437,465 children placed in out-of-home care, a 2.3% increase since 2015.1 Nearly 23,000 young adults (18 and older) were part of the over 250,000 children who exited the foster care system in the same year.1 These young adults exited or emancipated from foster care without finding a more permanent living situation such as reunification, guardianship, or adoption—with less than 1% (881 youths) leaving care as runaways.1

The proportion of adolescents in care increased in the 1980s, as the permanency planning movement initially resulted in keeping younger children out of care by reuniting them with their biological families following placement, or placing them in adoption or other permanent plans.2 Although youth who emancipate from out-of-home care have typically had relatively short stays in the system, and very few children actually grow up in foster care,1,3 adolescents still constitute a major group in the foster care population. As of 2016, adolescents represented 30% of the 273,539 children who entered foster care that year and 34% of the quarter of a million children who exited.1 Older youth in foster care need better opportunities to transition out of the system.4

Central to this paper is that many of the children and young adults exiting care are Hispanics, who constitute the youngest ethnic group in the nation and represent one quarter of those under age 18. In 2016,1 21% of all children in foster care were Hispanic, and projections point to Hispanic children reaching 31% of the US population younger than 18 for the year 2050.5 Therefore, the trend of Hispanic children entering and exiting the foster care system is expected not only to continue but also to increase. Despite current statistics and demographic trends, research about what happens to Hispanic children and youth in their life journey as adults after foster care is just emerging.6-8

Learning about adults after foster care is important to inform policies, programs, and services aimed at improving children’s outcomes throughout their foster care placement trajectory and life beyond the foster care system. However, the emerging literature on adult outcomes has primarily centered on transitioning youth with little information unique to Hispanics. Prior research published by some of the authors6-8 of this paper demonstrated that Hispanic ethnicity was not a significant predictor of physical or mental-health adult outcomes, and was only a mild (negative) predictor of the educational achievement of adults after foster care. This study expands on prior work utilizing the same database from Casey Family Programs called the Casey National Alumni Study (CNAS). This time, we discern the pathway of predictors that forecasts economic well-being in adulthood after foster care. Specifically, we examine predictors of economic well-being for Hispanics and whether these predictors differ when contrasted with non-Hispanic White adults. In the interest of brevity, non-Hispanic White alumni are referred to simply as “White” in this paper.
LITERATURE REVIEW

Professional literature on adults placed in foster care as children is limited and especially rare for Hispanic adults. In general, concerns about the emotional and financial well-being of maltreated youth have been documented. For example, Macmillan and Hagan\textsuperscript{9} observed that victimization during adolescence doubles the odds of unemployment in adulthood. Their longitudinal study utilized a subsample from the National Youth Survey (NYS) of adults ages 21 to 27 with experiences of sexual assaults, attacks with a weapon, and being threatened or beaten up. The NYS is a representative sample of the youth population of the US. Specific to child abuse, Zielinski\textsuperscript{10} reported on a subsample of adults older than 18 from the National Comorbidity Survey (NCS), an epidemiologically representative psychiatric survey in the continental US. This study found higher rates of unemployment, poverty, and Medicaid usage among adults with childhood experiences of severe neglect, sexual abuse, and physical abuse relative to those with no abuse history. Adults reporting experiences of any abuse had double the odds of household incomes below the federal poverty line. Those reporting multiple types of abuse were twice as likely to have a low family income and 3 times as likely to be in poverty.\textsuperscript{10} In a longitudinal study, lower employment and earnings were also observed among adults in their 40s with court-documented histories of childhood neglect, physical abuse, and sexual abuse when compared to a matching control sample of nonabused adults in a midwestern metropolitan city.\textsuperscript{11} Similarly in Chicago, Mersky and Janczewski\textsuperscript{12} observed 30\% to 46\% lower annual earnings for those with abuse, neglect, and placement childhood experiences relative to other adults with no record of child protective services involvement. The study used an adult prospective sample from the Chicago Longitudinal Study (CLS) of children attending public schools compared to children receiving child protective services.

Among youth aging out of care in California, Illinois, and South Carolina,\textsuperscript{13} Wisconsin,\textsuperscript{14} Iowa, and Illinois,\textsuperscript{15} Minnesota, California, and North Carolina,\textsuperscript{16,17} and Arizona, California, Hawaii, Idaho, Louisiana, Montana, North Dakota, Oklahoma, Oregon, South Dakota, Texas, Washington, and Wyoming,\textsuperscript{18,19} lower rates of employment and salaries have been reported when compared with youth not placed in out-of-home care. For example, Goerge et al\textsuperscript{13} found that no earnings were reported for 30\% of the youth in Illinois, 23\% in California, and 14\% in South Carolina during the total observation period, which lasted 13 quarters. For working youth, the average of yearly wages reported was below the poverty line of a single individual. Related to ethnicity, Hispanic youth in California were more likely to work than Whites and African Americans. In Illinois, African Americans were less likely to work relative to White and Hispanic youth. No race/ethnicity effect was observed in South Carolina. Pecora et al\textsuperscript{18} followed former foster youth or alumni served by Casey Family Programs (CNAS study) from 1966 to 1998 and found that, when compared with the national population and ethnic groups ages 16 and older, Casey alumni had lower employment rates and median household incomes. Dworsky\textsuperscript{14} reported the earnings of 8511 former foster youth older than 16 who were followed post-foster care discharge between 1992 and 1998. The study reported
extremely low earnings and only sporadic periods of employment for most former foster youth during a 2-year period after exiting care in Wisconsin. A majority of former foster youth remained in poverty for 8 years postdischarge. African Americans and Hispanics had the worst employment and earnings outcomes when compared to Whites. More recently, Naccarato et al\textsuperscript{15} reported that only half of former foster youth participants in the Midwest study were employed at age 21, and their average earnings were often below the poverty level.\textsuperscript{15} Similar findings were conveyed when study participants reached age 24\textsuperscript{20,22} and 26\textsuperscript{23} with less than 50\% of the former foster youth employed. Hook and Courtney\textsuperscript{20} noted that 56\% of the former foster youth at age 23-24 met the US Census Bureau definition of poverty when annual earnings were estimated based on current employment and adjusting for partner’s income and family size. Of relevance is that 22\% of working former foster youth also met the poverty definition. Similarly, when compared to the National Longitudinal Survey of Youth 1997 (NLSY1997) sample and state samples of youth from families receiving public assistance, Stewart et al\textsuperscript{17} reported that former foster youth had both lower rates of employment and lower earnings. Other CNAS studies on foster alumni found that African Americans had lower odds compared to White alumni of owning a home or apartment, having a household income level at or above poverty, or having a household income level greater than 3 times the poverty line.\textsuperscript{19} Subsequent studies comparing White, African American, and Hispanic CNAS alumni have determined that ethnicity is not a predictor of mental-health adult outcomes\textsuperscript{7} but that it does have a mild negative impact on the educational outcomes of Hispanic youth.\textsuperscript{6} This is of concern given the link between education, employment, and earnings.\textsuperscript{24} Considering this link and the heightened vulnerability of foster youth, it is important to determine the long-term economic outcomes of adults with a history of foster care, as well as the extent to which ethnicity may play a role.

METHODS

SAMPLE AND PARTICIPANTS

For this study, a subsample of the CNAS participants was used. CNAS’s original full sample comprised 1609 adults who were placed for at least 12 consecutive months in foster care during childhood with Casey’s long-term family foster care program and who were discharged from foster care for at least 12 months prior to the study. Almost 55\% were female; the median age at the time of out-of-home placement was 9 years, and at time of placement in Casey Family Programs, it was 13.8. The median length of time spent in foster care, adjusting for periods of time spent at home, was 6.2 years; the median age at time of study was 30 years. Most alumni were White (65\%), and only 11\% of the sample were Hispanic. Personal interviews were conducted with 1068 alumni; both complete case-records data (from admission to foster care to discharge) and interview data were available for the 1068 alumni.\textsuperscript{18} The criteria to select the subsample for this study were as follows:

• alumni who were White and Hispanic only;
• alumni who had both case-record information and interview data recorded;
• alumni between the ages of 25 and 44;
• alumni without serious intellectual disabilities (IQ > 70).

The application of these criteria resulted in a sample of 585 alumni, 498 (85%) of whom were White and 87 (15%) of whom were Hispanic. Compared to the original sample, both ethnicities were overrepresented in the subsample.

Given our interest in examining economic outcomes of Hispanic adults, we limited the sample to only Hispanic and White males and females; the age limit allowed for time to obtain an education and observe possible differences due to length of time in the work force. Those with intellectual disabilities were excluded due to the impact such a disability has on one’s participation in the labor force. To account for the possible impact of health on economic outcomes, we included a cluster of physical and mental-health variables in the analysis.

VARIABLES

The variables included in this research were selected from the ones used in a prior study on education outcomes.6

INDEPENDENT VARIABLES (PREDICTORS)

Independent variables—those not dependent in any equations in this paper's models—with variable names in brackets are

• Hispanic ethnicity [Hispanic]: coded as White, non-Hispanic = 0, Hispanic = 1;
• male [Male]: coded as female = 0, male = 1;
• age in years when entered Casey Family Services [AgeCasey];
• age in years at time of interview [AgeInter];
• problem characteristics [ProbChar]: a count of the presence of 10 medical or psychiatric history characteristics: attention deficit disorder (with or without hyperactivity), physical disability, drug exposure at birth, other DSM emotional disorder, fetal alcohol syndrome or fetal alcohol effect, hearing impairment, premature birth or low birth weight, learning disability, visual impairment, other impairment (scored as 0 impairments = 0; 1 impairment = 1; 2 impairments = 2; 3 or more impairments = 3);
• square root of placement change rate while in Casey [SqrtPCR] (a square root transformation was used to reduce skewness); and
• interaction of Hispanic ethnicity and problem characteristics [HispXPrCh], formed by multiplying Hispanic ethnicity variable by problem-characteristics variable.

DEPENDENT VARIABLES

The following variables are dependent variables in at least 1 equation in the path modeling that is carried out. We note that the first 3 variables listed below are also predictors in 1 or more equations. Variable names are in brackets:
• degree of preparation for leaving care [Prepare]: coded as 1 = low, 2 = medium, 3 = high;
• education level [EducLev]: coded as 0 = no high-school diploma or GED, 1 = GED, 2 = high-school diploma, 3 = post-high-school certification, 4 = bachelor’s degree or higher;
• married or has partner at time of interview [Partner]: 0 = no, 1 = yes;
• income at time of interview [Income3]: 0 = below poverty line for household, 1 = poverty line or above but below 3 times poverty line, 2 = income 3 or more times poverty line.

ANALYSIS

Path analyses were carried out using linear structural equation modeling (SEM) and generalized (nonlinear) structural equation modeling (GSEM) modules in Stata Release 13. This paper’s central analyses utilized the SEM module. An advantage of the SEM module over the GSEM module is that coefficients for White and Hispanic participants could be compared and tested for equality. The primary use of the GSEM module was to compare its results with those obtained using the SEM module.

The key SEM models use maximum likelihood estimation that includes cases with missing values (MLMV) and use robust standard errors. The robust standard errors reduce the influence of nonnormal distributions. In all SEM models, covariances of purely independent variables varied freely. As some measures of model fit are not available using MLMV estimation with robust errors, maximum likelihood SEM analyses were also carried out with missing values excluded and with default standard errors. The GSEM module does not allow MLMV estimation, so these models are carried out using maximum likelihood estimation; robust standard errors are used in these models.

RESULTS

LINEAR MODELS WITHOUT GROUPS

Figure 1 presents a nonstandardized, linear (nongeneralized) MLMV model (N = 585) with robust standard errors that predicts Prepare, EducLev, Partner, and Income3. This model is termed the “initial model.” Significant (p ≤ .05) predictors with + or − signs conveying direction of effects (respectively, positive or negative) were:

- for Prepare: AgeCasey (+), AgeInter (−), SqrtPCR (−);
- for EducLev: Prepare (+), Male (+), AgeCasey (+), ProbChar (−), SqrtPCR (−);
- for Partner: EducLev (−), Male (−);
- for Income3: EducLev (+), Partner (+), Male (+), ProbChar (−).

Table 1 presents these results in greater detail.
Regarding the model in Figure 1, no modification indices were significant \( (p > .05) \) for all possible paths, and this indicates good model fit. The coefficient of determination equaled 0.183.

For the purpose of generating goodness-of-fit measures, the model in Figure 1 was replicated excluding cases with missing values \( (N = 580) \) and using default standard errors. The likelihood ratio chi-square test of the model in Figure 1 versus a saturated model was \( \chi^2 (12) = 12.046, p = 0.442 \), indicating adequate fit. The standardized mean root residual equaled 0.019, and the root mean squared error of approximation equaled 0.003. Both of these measures conveyed good model fit. All path coefficients in the original model continued to be significant \( (p < .05) \) and in the same direction.

**Linear Models With Groups**

Next, the model in Figure 1 was rerun using the SEM’s groups specification facility to test whether coefficients differed between Hispanic and White participants (between groups). The (overall) Wald test for the 4 structural constants (1 for each equation) result was \( \chi^2 = 3.934 (4), p = .4150 \), an acceptance of the null hypothesis of equal constants in the groups. However, the (overall) Wald test for the 14 paths in the model rejected the null of equal path coefficients in the groups, \( \chi^2 = 24.899 (14), p = .0356 \). Examination of the individual paths revealed that the path from ProbChar to Income3 differed, \( \chi^2 = 10.782 (1), p = .0010 \) between Whites and Hispanics. No other path coefficients differed significantly \( (p > .05) \).

Given the significant difference in the ProbChar to the Income3 path for Whites and Hispanics, the model in Figure 1 was rerun adding the predictors Hispanic and HispXPrCh. This model, termed the “model with interaction of Hispanic ethnicity and problem characteristics,” captures the interaction of Hispanic and ProbChar. Figure 2 and Table 1 present this model \( (N = 585) \). Like the model in Figure 1, this model uses MLMV estimation with robust standard errors. Most coefficients for this model’s values are similar (sometimes identical) to those in the initial model. To see this, compare the coefficients presented in Table 1.

Observe that the path coefficient from Hispanic to Income3 has a negative value. This conveys that for alumni with no impairments (that is, with a score of 0 on ProbChar), Hispanic ethnicity predicts lower income. The path coefficient from HispXPrCh to Income3 is positive. This conveys that the effects of ProbChar on income are more damaging for White alumni than for Hispanic alumni. Indeed, for Hispanic alumni, the positive coefficient for the path from HispXPrCh to Income3 conveys that the higher the score on ProbChar, the higher the predicted value of Income3. The reader should observe that ProbChar has a direct negative effect on Income3 as well as indirect negative effects on Income 3 that are mediated by EducLev and Partner. These negative effects, in essence, counterbalance the positive effect found in the path from HispXPrCh to Income3. This being so, when all paths are considered, the model in Figure 2 does not, on balance, predict that the income of Hispanic alumni increases as impairments increase.
The coefficient of determination for the interaction of Hispanic ethnicity and problem characteristics (MLMV, robust standard errors) model was 0.201. This model was rerun as a maximum likelihood model that excluded cases with missing values and used default standard errors (N = 580). The likelihood ratio chi-square test of this model versus a saturated model was $\chi^2 (18) = 14.329$, $p = 0.707$, indicating good fit. The standardized mean root residual equaled 0.017, and the root mean squared error of approximation was 0.000; both of these conveyed good fit. All path coefficients in this model continued to be significant ($p < .05$) and in the same direction.

**Generalized (Nonlinear) Models**

All of the modeling presented so far has been for linear models. An advantage of these models was that hypotheses pertaining to group invariance (equality) for Hispanic and White alumni could be tested. Yet, the dependent variables were not continuous (numeric) variables. Partner is a binary variable while Prepare, EducLev, and Income3 are ordinal-level variables. To examine whether the results for the models presented in Figures 1 and 2 would replicate in a generalized (nonlinear) model, these models were rerun in Stata’s GSEM module. Binary logit links were used for the equation predicting Partner, and ordinal logit links were chosen for the equations predicting Prepare, EducLev, and Income3. Robust standard errors were used. For the model in Figure 1, all path coefficients in the generalized model continued to be significant ($p \leq .05$) and in the same direction as in the initial model. For the model in Figure 2, all path coefficients in the generalized model except for one continued to be significant and were in the same direction as in the linear model. The one exception was for the path coefficient of AgeCasey on Prepare; this path was in the same direction as in the Figure 2 model but only trended towards significance, $p = .079$. In sum, the results for the generalized models yielded results highly similar to those obtained in the linear ones.

**Study Limitations**

Casey Family Programs (Casey) is a private operating foundation that in 2002 was delivering long-term family foster care services in 13 states.18 The unique Casey program and funding characteristics may preclude generalization of the study results to public agencies. In particular, Casey offers transition and preparation services that may be beyond the scope of many public agencies.26 Kessler et al.26 documented better adult outcomes for the former Casey’s youth when compared to former youth served by two public agencies. Caution, however, is recommended in generalizing findings forward in time due to the fact that data for this study were gathered in 2000 and 2001. Statistically, a limitation of this study is that comparison between the Hispanic and White subsamples required the use of linear (nongeneralized) rather than generalized SEM procedures within Stata.25 Given the presence of several binary and ordinal-level dependent variables, a generalized analysis would have been preferable. On the other hand, comparisons between linear and generalized models evidenced similar findings, so the use of linear models appears not to be
problematic. Another limitation is that physical and mental-health problems were grouped in a composite variable, and it is not possible to discern what specific problems impacted one ethnic group more than the other. Nevertheless, this study contributes to the scarce research on adults with a history of foster care. As such, this study has many strengths. It provides a longitudinal perspective, a diverse and varied sample, and multiple predictor and outcome variables.

DISCUSSION AND POLICY IMPLICATIONS

Table 1 shows that higher household income is predicted by the combination of being a White male, having a higher level of education, having fewer problem characteristics, and having a partner. Being Hispanic is negatively associated with higher income for alumni with no problem characteristics. Table 1 depicts as well that having a higher education is predicted by being male, being prepared to exit foster care, entering the Casey foster care program at an older age, and again having fewer health problems. The flip side of this finding is that being a female reduces the likelihood of obtaining more education and greater household income. It can also be observed in Table 1 that being female and having lower educational attainment relates to having a partner. Therefore, it may be safe to suggest that for some women, marriage or cohabitation is one of the few chances they have of improving their household economic condition. This is, of course, not an ideal scenario as it perpetuates economic dependency. Additionally, early marriage/cohabitation may bring early parenthood, which in turn challenges young adults’ chances of furthering their education. One reason that being female predicts lower household income and education level may be early motherhood, especially while in foster care. Although our study did not control for alumni who were already parents by the time they exited care, the estimated birth rate reported for Casey female alumni while in care was 17.2% relative to the 8.2% birth rate of unmarried 18-year-olds in the US in 1998. Current statistics show that youth in foster care, both males and females, have much higher rates of teen parenthood than the general population, struggle with unstable employment and low earnings, and are affected by low college graduation attainment, which is reported to range from 5% to 10% for former foster youth.

The interaction between Hispanic ethnicity and problem characteristics is thought provoking and counterintuitive. Problem characteristics had a negative direct effect on income for White participants. This effect was significantly more positive for Hispanics than for Whites. When considering this result, caution is warranted, as it may be a statistical artifact particular to this sample. Besides this possibility, a limitation is that the problem-characteristics measure encompasses a wide breadth of conditions (see Methods), and this makes it difficult to tease out the particular conditions that may be most involved in producing the differing effects for Whites and Hispanics. On the other hand, the resiliency of Hispanics to problem characteristics brings to mind the “Hispanic paradox” for health outcomes. As it is most frequently conceptualized, this paradox “flips” the causal direction found in our study. Our study found that, relative to Whites, Hispanics are resilient to problem
characteristics that can predict lower income. Following the logic of the Hispanic paradox, one could conclude that Hispanics may be more resilient than Whites in terms of the negative effects of low income (poverty) on health and longevity of life. Since this conclusion is only a possibility, further research is warranted. Likewise, it is conceivable that the problem characteristics Whites presented were more severe than were those among Hispanics, or that some characteristics that affect cognition and functioning may be more frequent among Whites, which in turn would affect their income potential. For example, White adults may have higher prevalence of fetal alcohol syndrome than do Hispanic adults, considering that alcohol consumption during pregnancy is more prevalent among White women than among Hispanic women.\textsuperscript{31}

Stepping back from the statistical details of these analyses, while additional research studies are needed to distinguish the in-care, transition-from-care, and after-leaving-care experience of different ethnic groups, it will also be important to identify the major factors that may predict successful adulthood after placement in foster care. Indeed, prior work has documented more similarities than differences in outcomes among ethnically diverse groups of alumni.\textsuperscript{5-8} Dworsky et al.\textsuperscript{32} for example, observed that “racial or ethnic differences in outcomes are more the exception than the rule, and that some of those differences can be explained by other factors” (p. 902). Outcome differences, the authors added, “mirror racial or ethnic differences observed in the general population” (p. 902). This heightens the urgency not only to assist children in foster care to overcome the experiences that brought them into care, but also to assist minority children with the skills needed to succeed as adults in a society plagued with health, education, and economic disparities.

Despite some of the paradoxical findings with the Hispanic foster care alumni, the results of this study and other alumni studies underscore the need to significantly improve policy and program design with respect to preparing youth in foster care for adulthood. The National Working Group on Foster Care and Education\textsuperscript{33} recently highlighted a wide range of service strategies to better prepare youth to succeed. To support those strategies, policy change is urgently needed to:

- require child welfare agencies to use strategies to locate and approach relatives of children before they are placed or after they are placed with nonrelatives;
- require more assertive permanency planning actions so fewer children linger in foster care past a year of placement;
- provide education, job, and healthcare support for youth who spend time in foster care until the age of 30. Services could include, among others, access to technical careers, resumé writing, interviewing skills, and job-placement vouchers.

Aiming to maximize opportunities that may come as a result of enhanced education and labor-market skills for youth in care, it would be important to (1) target interventions to avoid unplanned pregnancies, including reproductive-health services, as well as age-appropriate comprehensive sex education that addresses gender roles and empowerment, (2) emphasize socioemotional skills, self-care
practices, and mental-health care in order to promote a culture of holistic health, and (3) increase the advocacy capacity of foster parents so they can be the voice of foster children and youth and so the youth, too, can advocate for themselves.

Because foster care can help protect children from maltreatment but is an unreliable way of helping youth succeed as adults, we should consider better addressing one of the root causes of foster care—family poverty. This can be tackled by adopting the policies identified by the National Academies of Sciences, which include different forms of cash transfers, immigration policies, and minimum wage, among others.
REFERENCES


20. Hook J, Courtney M. Employment of former foster youth as young adults: evidence from the Midwest study. Chicago, IL: Chapin Hall Center for Children at the University of Chicago; 2010.


Figure 1. Initial model predicting preparation, education level, having a partner, and income level (N=585). This is an unstandardized, linear model using Stata’s MLMV approach with robust standard errors. See Methods for a description of the variables. All paths are significant at .05 level or lower; see Table 1 for exact significance levels. For the 5 (pure) predictors, number in upper-right corner of box indicates the mean and number in lower-right corner indicates variance. For dependent variables, number in lower-right corner of box indicates constant, and error variance is located to the right of the error term (the circle).
Figure 2. Model with interaction of Hispanic ethnicity and problem characteristics. This is an unstandardized linear model using Stata’s MLMV approach with robust standard errors (N=585). See Methods for a description of the variables. All paths are significant at .05 level or lower; see Table 1 for exact significance levels. For the 5 (pure) predictors, number in upper-right corner of box indicates the mean and number in lower-right corner indicates variance. For dependent variables, number in lower-right corner of box indicates constant, and error variance is located to the right of the error term (the circle).
## Table 1. Path Models Predicting Preparation, Education Level, Having a Partner, and Income Level

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<th>Dep. Variable</th>
<th>Constant or Predictor</th>
<th>Initial-Model ((N = 585, \text{see Figure 1}))</th>
<th>Model-with-Interaction-of Hispanic Ethnicity and Problem Characteristics ((N = 585, \text{see Figure 2}))</th>
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*Note: Both models are unstandardized, linear MLMV models with robust standard errors. See Methods for variable descriptions.*