

# Final Project

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## Introduction

The Individuals with Disabilities Education Act (IDEA) Part C is a federal grant program that supports states in providing Early Intervention (EI) services for children zero to two who experience developmental delays and/or disabilities (Early Childhood Technical Assistance Center, 2023). These EI services incorporate family-centered practices, aiming to support caregivers' understanding of their children to provide the most effective support for their development (Romano, 2006). However, racially and/or linguistically minoritized children are less likely than White, English speaking monolingual children to receive EI services (Morgan et al., 2012) despite federal mandates to reach the most marginalized, hard-to-reach communities.

The IDEA Section 618 requires that the data is collected on children with an active IFSP who stopped receiving EI services (U.S. Department of Education [DOE], 2024). Recent data revealed that racially and/or linguistically marginalized infants and toddlers are much more likely to leave EI services via disqualification from EI services due to non-response to agencies' outreach efforts after they had been made eligible.

The purpose of this study is to explore the patterns in which families from racially and/or linguistically marginalized communities leave EI services by examining extant data on EI exit between 2013-2022. The data was obtained from the Office of Special Education Services (OSEP, 2024). The research questions are as follows:

- What are the associations between children's race and their reasons for exiting EI services, as analyzed through descriptive statistics, including chi-square tests and odds ratio analysis? For this project, we looked at the associations between children's race (Black/African American and White) and the exit reason of disqualification due to non-response rate.

## Methods

**Independent variables (IV):** Student' race served as the independent variable (IV), while exit reason served as the dependent variable (DV). There were seven racial categories serving as

IVs (Alaska Native/American Indian, Asian, Black/African American, Hispanic, Multiracial, Pacific Islander, White). We briefly discussed collapsing racial categories in order to make the analysis more powerful (as Maiko will also be working on state-level data with cells with no data as certain populations are very underrepresented). However, we decided against doing so as this would likely obscure the results, as there are large disparities in exit reasons within BIPOC populations.

**Dependent variables (DV):** There are ten exit categories under three general exit reason “umbrellas” (Hansen et al., 2016). The three reasons

Table 1: Table of Exit Reasons

exiting_reasons	exiting_category_codes
Program completion	Category (C) 1: A child is no longer eligible for Part C prior to reaching age three
Exit at age three	C2: A child is exiting Part C and has been determined to be eligible for Part B
Exit at age three	C3: Part B eligible, continuing in Part C
Exit at age three	C4: Not eligible for Part B, exit with referrals to other programs
Exit at age three	C5: Not eligible for Part B, exit with no referrals
Exit at age three	C6: Part B eligibility not determined
Not receiving services	C7: Deceased
Not receiving services	C8: Moved out of state
Not receiving services	C9: Withdrawal by parent (or guardian)
Not receiving services	C10: Attempts to contact the parents and/or child were unsuccessful

These ten categories were then collapsed into six categories, based on the scope of the study and for logistical reasons (e.g. “Deceased” category is beyond the scope of this study; one code is not being used in Oregon; multiple codes were similar in nature to each other):

- Attempts to contact unsuccessful (DQ)
- Withdrawal by parent (Withdrawal)
- Complete/not eligible for Part B (Complete or Not Eligible)
- Moved out of state (Moved Out)
- Part B eligibility not determined (Eligibility Not Determined)
- Part B eligible (Eligible)

**Preparatory work:** As the original data sets from OSEP contained dependent variables that are beyond the scope of this study (e.g. “deceased”), we prepared the data specified below:

1. Created an Excel sheet from the national and Oregon data sets
2. Imported Excel sheet into RStudio
3. Collapsed/removed DVs
4. Collapsed multiple years into one aggregated data by race

**Data Analysis:** We used chi-square goodness of fit test to understand associations between children's race and their EI exit reasons on multiple levels. First, we ran descriptive analysis of the national dataset as an omnibus test. For this, we used fundamental statistical functions and ran chi-square to test our null-hypothesis, which was that there was no associations between children's races and their exit reasons.

We then analyzed the association between the exit reason, "Attempts to Contact Unsuccessful", to run similar analysis. For this analysis, we looked at the association between two racial categories, Black/African American and White children's groups, with this exit reason. We created 2x2 table for these groups, complete with the total number of exit that year. This also enabled us to analyze the odd ratio.

## Results

The initial exploration included exit data from 3,310,559 children who exited the EI services between 2013 and 2022 nationally. Approximately \_\_\_\_% of the children were Black/African American, while \_\_\_\_\_ children were reported as being White. The chi-square omnibus test indicated that there was a statistically significant association between children's race and their exit reasons, X-squared (30, N = 3,310,559) = 52218,  $p < 2.2e-16$  or 0.00000000000000022.

Looking specifically at the Attempts to Contact Unsuccessful/DQ category, approximately 13.5% of Black/African American children exited EI per disqualification due to agencies losing contact with families, while only about 5.98% of White children were disqualified from services for the same reason (Figure 1). The chi-square indicated that there was a statistically significant association between children being Black/African American or White and them leaving EI due to being disqualified, (CHI SQUARE VALUES BASED ONLY ON THE us\_data\_DQ\_proportion BUT WITH JUS TBLACK AND WHITE!)

Figure 1: Unsuccessful Contacts/DQ (U.S.)

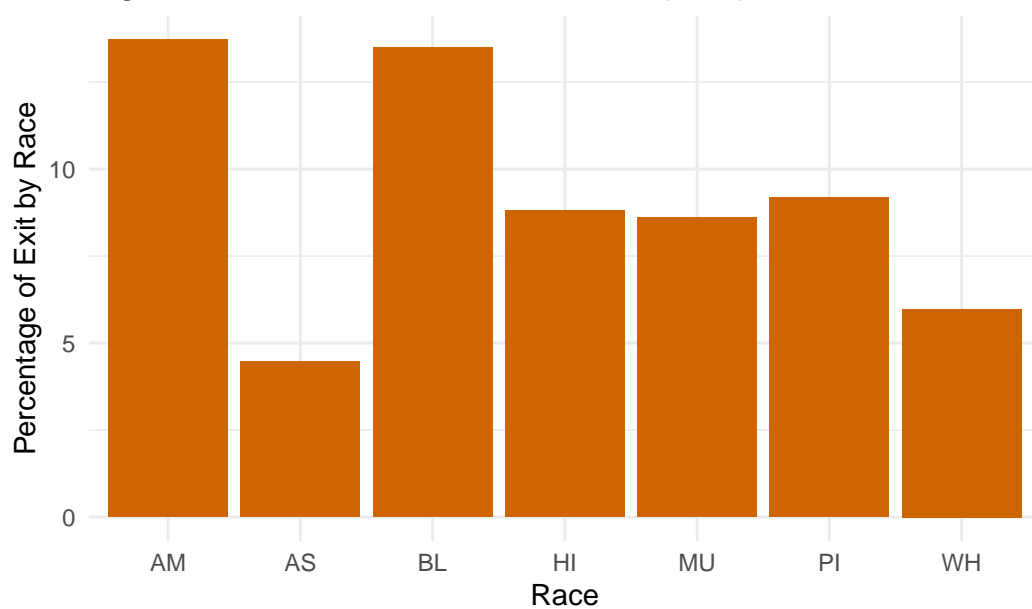
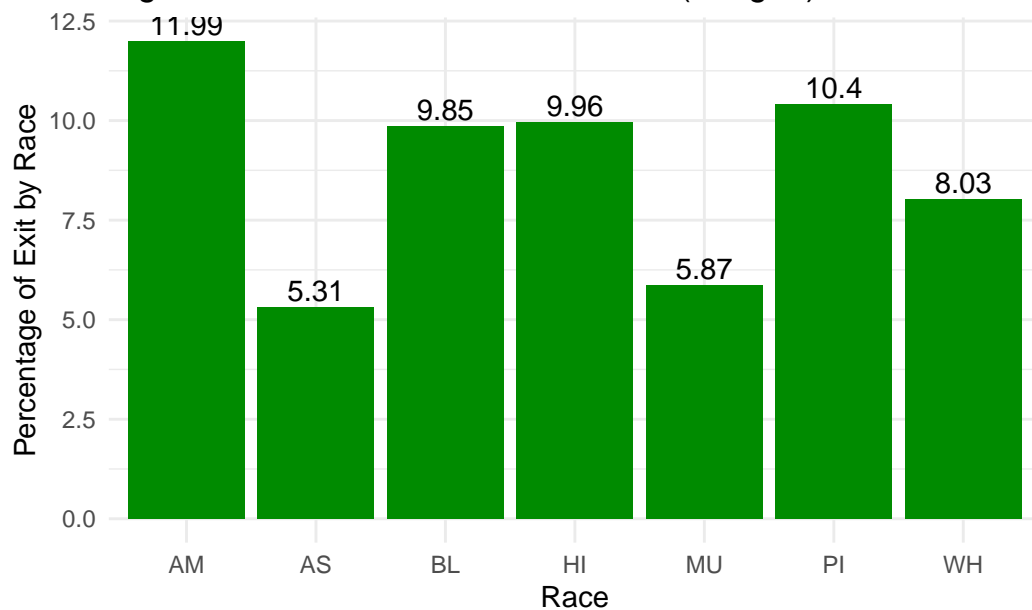


Figure 2: Unsuccessful Contacts/DQ (Oregon)



Chi-squared test for given probabilities

```
data:  us_data_DQ[, 2]  
X-squared = 4788740, df = 6, p-value < 2.2e-16
```

## Discussion

QuantCrit

It's not a "risk factor"

## References

- Early Childhood Technical Assistance Center [ecta], (2023, October 6). *Part C of IDEA*. ecta. <https://ectacenter.org/partc/partc.asp>
- Romano, S.D. (2006). Historical perspectives. In G. M. Foley & J.D. Hochman (Eds.), *Mental health in early intervention: Achieving unity in principles and practice* (pp. 33-58). Baltimore: Paul H. Brookes Publishing Company.
- Morgan, P. L., Farkas, G., Hillemeier, M. M., & Maczuga, S. (2012). Are Minority Children Disproportionately Represented in Early Intervention and Early Childhood Special Education? *Educational Researcher*, 41(9), 339–351. <https://doi.org/10.3102/0013189X12459678>