Final Project

Maiko Hata & Michelle Cui

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).

The IDEA Section 618 requires that the data is collected on children who had an active IFSP who stopped receiving services, or "exited" 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.

This project examined extant data on EI service exit from 2013-2022. The data was obtained from the Office of Special Education Services (OSEP, 2024) website. The goal of this project was to understand associations between children's race and exit reasons, using descriptive statistics including chi-square and odd-ratio analysis.

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) which were not collapsed. We briefly considered collapsing some categories in order to make the analysis more powerful (as Maiko will also focusing on data

from Oregon which has no data for certain cells as some populations are very underrepresented. However, we decided against doing so as this would likely obscure the data, as there are large disparities in exit reasons even within BIPOC populations.

Dependent variables (DV): As you can see in Table 1, there are ten exit categories under three general exit reason "umbrellas" (Hansen et al., 2 016).

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 datasets
2. Imported Excel sheet into RStudio
3. Removed two DVs that are beyond the scope of this study
4. Combined three similar DVs into one
5. Collapsed multiple years into one aggregated data

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 analyzed the entire national data set 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 chose the exit reason of "Attempts to Contact Unsuccessful", as this means disqualification from EI agencies to run similar analysis Black/African American and White children and the association with one 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 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!)

```
    Pearson's Chi-squared test

data:  race_us[, 3:8]
X-squared = 52218, df = 30, p-value < 2.2e-16
```

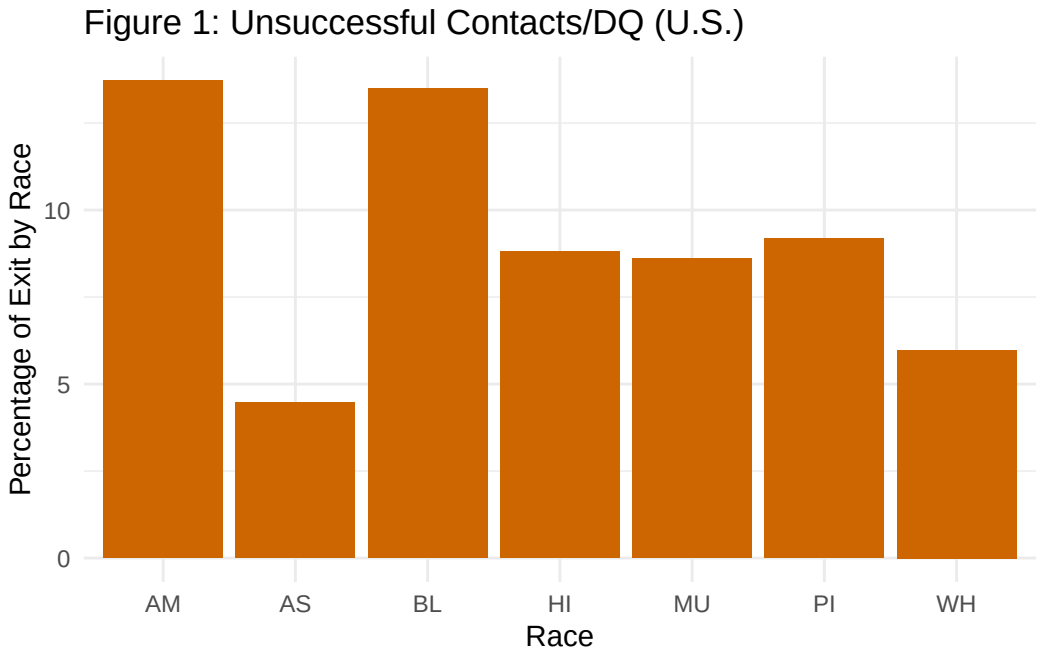
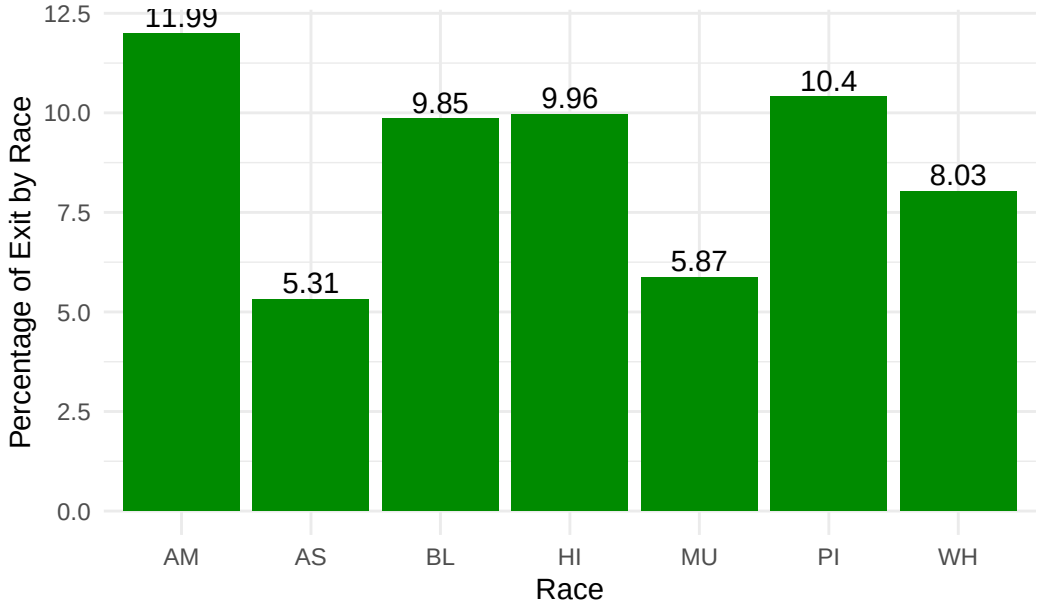


Figure 2: Unsuccessful Contacts/DQ (Oregon)




```
    Chi-squared test for given probabilities

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

Discussion

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