Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

Elsevier hereby grants permission to make all its COVID-19-related research that is available on the COVID-19 resource centre - including this research content - immediately available in PubMed Central and other publicly funded repositories, such as the WHO COVID database with rights for unrestricted research re-use and analyses in any form or by any means with acknowledgement of the original source. These permissions are granted for free by Elsevier for as long as the COVID-19 resource centre remains active.
Impact of COVID-19 among young people currently and formerly in foster care

Rachel Rosenberg*, Sunny Sun, Alaina Flannigan, Maia O'Meara

Child Trends, 7315 Wisconsin Avenue Suite 1200W, Bethesda, MD 20814, United States of America.

ARTICLE INFO

Keywords:
Transition age foster youth
COVID-19
Interrupted time series

ABSTRACT

Background: COVID-19 continues to have devastating impacts across the United States, causing high levels of unemployment and disconnection from work and school. Furthermore, some communities are at higher risk for adverse outcomes due to the pandemic, including transition age foster youth. Transition age foster youth report negative impacts on their employment, educational attainment, ability to meet basic needs, and their connection to work and school.

Objective: The current study examines the impact of the COVID-19 pandemic on key young adult outcomes including education, employment, financial well-being, and disconnection from work and school.

Methods: Young people from the Jim Casey Youth Opportunities Initiative complete a survey every April and October. This study focuses on a subsample of 2117 young people who completed 8004 surveys. Utilizing an interrupted time series design, we examine changes in outcomes at six time points pre-pandemic onset (April 2017–October 2019) and two timepoints post-pandemic onset (October 2020 and April 2021).

Results: The pandemic slowed the declining school enrollment rates but did not reverse the downward trend that started before the pandemic. The pandemic decreased the number of young people who were employed and increased the number of those who were disconnected from work and school. The pandemic increased the number of young people who reported having savings.

Conclusion: Transition age foster youth needs access to employment and educational opportunities, which were disrupted during the COVID-19 pandemic. Additional resources are needed to ensure young people are connected to work and school.

1. Introduction

In almost every facet of life, the COVID-19 pandemic (also referred to as the pandemic and COVID-19) disrupted communities. Stay-at-home orders, social distancing guidelines, and safety protocols meant to stem transmission rates led to abrupt shifts to virtual learning (Education Week, 2020) and teleworking (Armour et al., 2020), mass layoffs across middle- and low-wage sectors (Bureau of Labor Statistics, 2020a), food and housing insecurity due to job loss (Center on Budget and Policy Priorities, 2021), and lack of child care due to facility closures (Sun & Russell, 2021). These unanticipated changes, sudden physical isolation, and disconnection from social and emotional supports have harmed the mental health of most Americans. In a report published in October 2020, 7 months after

* Corresponding author.

E-mail addresses: rosenberg@childtrends.org (R. Rosenberg), ssun@childtrends.org (S. Sun), aflannigan@childtrends.org (A. Flannigan), mmomeara@childtrends.org (M. O’Meara).

https://doi.org/10.1016/j.chiabu.2021.105383

Received 10 September 2021; Received in revised form 29 October 2021; Accepted 1 November 2021
Available online 5 November 2021

0145-2134/© 2021 The Author(s). Published by Elsevier Ltd. This is an open access article under the CC BY-NC-ND license

(https://creativecommons.org/licenses/by-nc-nd/4.0/).
Americans began to experience the effects of the pandemic, the American Psychological Association (APA) reported that 78% of Americans found the COVID-19 pandemic to be a significant source of stress in their life, with 67% of Americans reporting increased stress over the course of the COVID-19 pandemic (APA, 2020). Individuals in Generation Z (Gen Z) are born between 1997 and 2012 and are the focal population of this study, which examines young adults between the ages of 18 and 24. Gen Z reported the highest stress levels (6.1 out of 10) when compared with all other generations (APA, 2020). Young adults in foster care and those who have aged out of foster care experience pandemic-related challenges with housing and basic needs, finances, education, physical and mental health, and personal connections (Greeson, Jaffee, & Wasch, 2020). One study reported that COVID-19 negatively impacted living situations for 43% of current and former foster youth ages 18–23 years old (Greeson, Jaffee, & Wasch, 2020).

The effects of COVID-19 are magnified for young adults transitioning into adulthood. The transition to adulthood, which occurs during the phase of life known as emerging adulthood (Arnett, 2007), is the period wherein young adults typically gain financial independence, pursue an education, secure stable employment, and get married or have children, if desired (Wood et al., 2018). During this transition, young people experience developmental and personal changes in their relationships, education, and/or employment as they identify their goals and needs for adulthood. The transition to adulthood is a critical time, which requires substantial supports for young adults and is heavily influenced by the circumstances that surround them (Wood et al., 2018). While overall well-being improves throughout emerging adulthood (Arnett, 2007), the process can temporarily add stress as young people explore their identities and learn new things (Berlin et al., 2010). Over the past decade, it has become increasingly important to earn a college degree to secure a job with a livable wage. Therefore, it may take young people longer to prepare for and enter the workforce, extending the length of time it takes to transition to adulthood (Settersten Jr. & Ray, 2010). Furthermore, young people with families and other adults who can emotionally (e.g., listen when having a bad day), materially (e.g., provide food or clothing), and financially (e.g., provide money to pay rent) support them through this process have a privilege that those without these supports do not have (Settersten Jr. & Ray, 2010). Research demonstrates that this connection to parental support and resources can improve the life trajectory of young adults (Aquilino, 2005; Keller et al., 2007).

Young people aging out of the foster care system are often forced to complete this transition to adulthood with less support and at a quicker pace than their peers who do not have foster care experience (Morton, 2017; Osgood et al., 2010; Rosenberg & Kim, 2017). The services that foster youth receive often end abruptly when they age out, despite increased need during their transition to adulthood (Osgood et al., 2010). Indeed, 35% of former foster youth felt “not well prepared” to live independently upon aging out of care (Merdinger et al., 2005). They also may not have adults or families they can turn to when support is needed, which may be because these relationships do not exist or because their families do not have the capacity to provide support (Osgood et al., 2010).

The Jim Casey Youth Opportunities Initiative (Jim Casey Initiative) aims to support young people ages 14–26 who have spent at least 1 day in foster care after their 14th birthday during their transition to adulthood. The Jim Casey Initiative works nationally and in partnership with states to provide equitable access to four pillars of positive well-being: permanence, stable housing, education success and economic security, and pregnancy prevention and parenting support (The Annie E. Casey Foundation, 2021a). Currently operating in 17 states, they have provided financial education and support for asset development to young people since 2001. Twice yearly, young people who participate in the Jim Casey Initiative take a survey, called the Opportunity Passport® Participant Survey (OPPS). Recognizing the COVID-19 pandemic resulted in immediate need among all populations, and particularly among youth in foster care, the Jim Casey Initiative sought to capture data on how the pandemic affected young people in foster care.

While early data, both quantitative and qualitative, suggest the pandemic had devastating effects across communities, particularly among young people in foster care, there is limited longitudinal data available to examine changes over time. To address this gap, in October 2020, questions were added to OPPS to capture how COVID-19 was impacting young people in foster care. These new questions explore changes in their foster care experience (e.g., parent and sibling visitation, placement), housing, employment, education, and mental health, as well as identify their basic needs and access to healthcare. The current study examines the outcomes of young adults with foster care experience at multiple time points before the pandemic (marked as April 2020) and two time points during the pandemic (October 2020 and April 2021).

2. Literature review

2.1. Key outcome areas

Lack of adequate financial and emotional support can negatively impact a foster youth’s transition to independence and self-sufficiency. Research has demonstrated that youth aging out of foster care are at increased risk for adverse outcomes in several domains, including education, employment, and financial stability. Due to their system involvement, children and youth in foster care experience barriers to educational attainment, including repeated school changes (Clemens et al., 2016). The Midwest Evaluation of the Adult Functioning of Former Foster Youth found that only 24% of former foster youth had a high school diploma or GED by age 23 (Courtney et al., 2010). At age 23, 22% of young people who participated in The California Youth Transitions to Adulthood Study (CalYOUTH) were enrolled in school at the time of their interview, and only 7% of participants had completed their fourth year of college (Courtney et al., 2020). About 85% of youth had completed a high school diploma or equivalency certificate (Courtney et al., 2020).

Like any young adult, foster youth have educational goals, express their belief that education is important, and connect academic success with their college aspirations (Skobba et al., 2018). For example, 87% of CalYOUTH participants aspired to complete a college degree despite only 7% having done so at the time of the study (Courtney et al., 2020). Foster youth with relationships to supportive adults are more likely to attend college (Okpych & Courtney, 2017). These supportive adults (e.g., teachers, foster parents, and family
members) may connect youth with educational resources such as support applying to college, scholarships, or financial aid and are therefore vital in helping foster youth graduate high school and get into college (Skobba et al., 2018). Additionally, once at college, foster youth may face challenges finding mentors, reaching out for support when needed, feeling disconnected from their peers, or feeling like an imposter (Skobba et al., 2018). Similarly, those in college without guidance or support may not realize that dropping a class could jeopardize their financial aid or on-campus housing, which could result in being forced to drop out of school entirely (Morton, 2017).

Absence of a college degree or other form of vocational credential can make it difficult to find employment and secure stable income. Former foster youth who increased their educational attainment also increased their earning potential (Okpych & Courtney, 2014). While 60% of CalYOUTH participants were employed at age 23, more than 40% reported a yearly household income of $10,000 or less (Courtney et al., 2020). The average annual income for CalYOUTH participants at age 23 was $19,600 (Courtney et al., 2020). Research has found that youth who aged out of care earn $14,148 a year, while their peers not in foster care earn $28,105 a year, highlighting a large discrepancy (Okpych & Courtney, 2014).

Young people in their transition to adulthood will likely struggle to secure financial independence and stability due to low rates of sustained employment and annual incomes. Furthermore, adults without steady employment often miss out on steady wage increases, leading to lower lifetime earnings and savings. Financial education services, post-secondary education services (e.g., tutoring), and financial management services (e.g., budgeting) have been shown to reduce adverse outcomes (Nadon, 2020). However, only 29% of youth are receiving budgeting and financial education services, and only 19% of youth are receiving post-secondary education services (Nadon, 2020).

2.2. Impact of the COVID-19 pandemic

Regardless of foster care experience, the COVID-19 pandemic affected all life domains including education, employment, and financial well-being. An estimated 55.1 million public and private school students were impacted by school closures due to the pandemic (Education Week, 2020). A survey conducted by APA found that school closures negatively impacted 81% of participating teenagers, and the pandemic was a major source of stress for 87% of young adults in college (APA, 2020). In October 2020, a study estimated that up to 3 million children had not received formal education virtually or in-person since March 2020 due to a lack of necessary devices or resources (e.g., electronic equipment, reliable Internet access) and lack of supports for English learners and students with disabilities (Korman et al., 2020).

Unemployment in the United States skyrocketed during the pandemic from 3.6% in April 2019 to 14.7% in April 2020, by which time 30 million Americans had applied for unemployment benefits (Bureau of Labor Statistics, 2020a; Horsley, 2020). Sixty-eight percent of adults who were employed at some point during the COVID-19 pandemic reported negative pandemic-related impacts including being laid off, reduced hours, difficulty balancing household responsibilities during work hours, or grappling with decreased productivity (APA, 2020). Clear disparities are emerging, with workers in households with incomes less than $50,000 being more likely to have been laid off compared with workers in households with incomes greater than $50,000 (21% versus 11%, respectively; APA, 2020). This is likely because many lower-paying jobs laid off or reduced hours for their employees because of social distancing mandates and stay-at-home orders (Kochhar & Barroso, 2020). Industries most impacted include leisure and hospitality jobs (including the restaurant and bar industry), travel and transportation jobs, and construction jobs (American Association of Retired Persons, 2021).

While the global effects of the pandemic persist, current and former foster youth are disproportionately at risk of experiencing the negative effects of COVID-19. Youth who live in congregate care settings are at an increased risk of exposure to and viral spread of COVID-19 (Font, 2020). Many youth in foster care have chronic health conditions that increase their vulnerability to COVID-19-related complications (Font, 2020; Sepulveda et al., 2020). Additionally, recognizing that many foster youth have learning disabilities or academic delays due to changing schools or foster care placement disruptions, virtual learning may present further challenges for these students (Font, 2020). Furthermore, while many states have enacted a moratorium on youth aging out of foster care during the pandemic and/or extended aftercare services, some states have not, leaving young adults in these states to manage an even more challenging transition to adulthood with a smaller safety net (Font, 2020).

Transition age current and former foster youth have been impacted in nearly every life domain by COVID-19. A poll conducted by Foster Club in May 2020 found that almost 65% of transition age foster youth who were working prior to the pandemic lost their job, 50% of those who applied for unemployment benefits did not receive them, nearly 20% had run out of food, and 23% reported being forced to move or feared that they will be forced to leave their current living situation. While 37% of youth surveyed reported that they had family members whom they could rely on, 20% reported being completely on their own (Foster Club, 2020). In another survey conducted by Greeson, Jaffee, Wasch, & Gyourko, 2020, almost half of youth currently in or aged-out of foster care reported a negative impact on their employment, 66% reported negative educational impacts, and 55% reported food insecurity due to the pandemic. While these studies and others provide a snapshot of how foster youth were faring toward the end of 2020, the field lacks longitudinal studies of the impact of COVID-19. The current study fills this gap by examining trends in education, employment, and financial well-being before the pandemic and at two time points during the pandemic (October 2020 and April 2021).
3. Methodology

3.1. Analytic goal and design

Our analytic goal is to assess the potential impact of COVID-19 on young adults with foster care experience in four domains: education, employment, disconnection from education and employment, and financial well-being. Based on this goal, available data, and the context of the COVID-19 pandemic, we chose an interrupted time series analytic model with propensity score weighting for certain demographic and contextual variables. Interrupted time series analyses are well suited for natural experiments and societal interventions that impact all respondents in a survey dataset (Linden, 2015). In the absence of a comparison group, an interrupted time series model allows for informed inferences about the true mean of a population and accurate estimates of the “treatment” effects on that population based on observed trends (Linden & Adams, 2011). Though time series designs do not eliminate threats to internal validity in the absence of a control group, they allow for minimizing and controlling for many factors, given sufficient sample size (both before and after the intervention) and a clearly delineated intervention timepoint (Corsaro, 2018).

3.2. Dataset

For this analysis, a dataset of 8004 unique surveys completed by 2117 young people in the Jim Casey Initiative Opportunity Passport program who completed the OPPS was utilized. Opportunity Passport promotes financial literacy and offers a savings match for young people ages 14 to 26 who have spent at least 1 day in foster care after their 14th birthday. While the research team cannot speak to the demographic parallels to the national population, prior research demonstrates there is an estimated 782,000 young people in the United States who are within that age range and experienced foster care after their 14th birthday, as of fiscal year 2019. Participants are incentivized to complete surveys describing their foster care background, demographic characteristics, and young adult outcomes. Surveys are completed biannually in April and October of each year, which typically means a young person will complete multiple surveys during their participation in the Opportunity Passport program. The surveys are broadly representative of the conditions of current program participants, as indicated by the 82% or greater response rate across all sites for each survey period.

The data used for this analysis come from a restricted-use multi-year subset of surveys available to researchers. This dataset includes participants ages 18 and older who provided informed consent, procedures for which were reviewed and approved by the Child Trends’ Institutional Review Board, and volunteered their past, future, or past and future survey data for research purposes. The time series is based on a subset of surveys taken between April 2017 and April 2021 for a total of nine time points. Six time points (April 2017–October 2019) occurred prior to the COVID-19 pandemic, and two occurred after the onset of the COVID-19 pandemic. One time point (April 2020) was excluded from analysis due to the wide variation in state stay at home/shelter in place conditions of current program participants, as indicated by the 82% or greater response rate across all sites for each survey period.

Table 1
Inverse-probability propensity score weights of control variables used in ITS analysis.

| Variable                              | Coefficient | SE  | z    | P > | 95% Confidence Interval |
|---------------------------------------|-------------|-----|------|-----|-------------------------|
|                                       |             |     |      |     | Lower                   |
|                                       |             |     |      |     | Upper                   |
| Age category (22–26 years old)         | 0.42***     | 0.06| 7.17 | 0.00| 0.31                    |
| Female at birth                       | -0.10*      | 0.05| -2.01| 0.045| -0.21                   |
| Race/ethnicity (ref: Other race)       |             |     |      |     |                         |
| Hispanic/Latino                       | 0.13        | 0.10| 1.29 | 0.197| -0.07                   |
| White                                 | 0.02        | 0.10| 0.25 | 0.803| -0.17                   |
| Black                                 | -0.06       | 0.10| -0.57| 0.568| -0.25                   |
| Two or more races                     | 0.04        | 0.11| 0.39 | 0.696| -0.18                   |
| Foster care status                    | 0.00        | 0.00| 2.18 | 0.029| 0.00                    |
| Survey administration count           | 0.09***     | 0.01| 10.95| 0.000| 0.08                    |
| State (ref: Maine/Connecticut *)       |             |     |      |     |                         |
| Arizona                               | -0.11       | 0.15| -0.76| 0.446| -0.40                   |
| Georgia                               | 0.06        | 0.13| 0.46 | 0.646| -0.20                   |
| Hawaii                                | -0.64***    | 0.14| -4.72| 0.000| -0.91                   |
| Indiana                               | 0.11        | 0.13| 0.84 | 0.401| -0.15                   |
| Iowa                                  | -0.13       | 0.14| -0.92| 0.355| -0.39                   |
| Michigan                              | 0.12        | 0.12| 1.05 | 0.292| -0.11                   |
| Mississippi                           | -0.43*      | 0.19| -2.28| 0.023| -0.80                   |
| Nebraska                              | 0.39**      | 0.12| 3.21 | 0.001| 0.15                    |
| New Mexico                            | 0.01        | 0.18| 0.04 | 0.972| -0.35                   |
| Ohio                                  | -0.08       | 0.15| -0.53| 0.598| -0.37                   |
| Pennsylvania                          | 0.07        | 0.16| 0.43 | 0.669| -0.24                   |
| Rhode Island                          | -0.44**     | 0.14| -3.28| 0.001| -0.71                   |
| Tennessee                             | -0.03       | 0.20| -0.13| 0.897| -0.42                   |
| Maryland                              | 0.36*       | 0.15| 2.38 | 0.017| 0.07                    |

* Due to small sample sizes, the original dataset combined observations in Maine and Connecticut into one geographic unit.
** p ≤ .05.
*** p ≤ .01.
orders, differences in child welfare administration policies and responses to COVID-19, and health care contexts (hospital conditions, policies, etc.) at that time. The questions highlighted in the time series analysis did not directly ask youth about their experience during the pandemic. Instead, we utilized responses to several questions that had been asked consistently for four or more years, which allowed us to analyze the effect of COVID-19 over time. Additionally, the analytical dataset was restricted to participants who were 18 years or older on the day they completed their survey.

Lastly, because the questions used in the interrupted time series did not directly ask about the young people's experience during COVID-19, we analyzed several questions within the dataset that did specifically ask about COVID-19's impact on their education, employment, and financial wellbeing.

3.3. Weighting

Given that interrupted time series design assumes the characteristics of the population is relatively similar at pre- and post-intervention, data were inspected by timepoint to determine if any control was needed. The dataset included a greater number of surveys in more recent time periods; therefore, one cannot assume that the population has not undergone other changes that might violate this assumption and impact our outcomes of interest.

To control for potential differences between the pre-pandemic and post-pandemic-onset (post-onset) populations, propensity score weighting was utilized. Propensity score weighting applies weights to observations based on their likelihood of being included in the post-onset. These inverse-probability weights, computed via logistic regression, allow controlling for whether certain demographic and contextual characteristics—specifically age, sex, race/ethnicity, foster care status, numbers of surveys completed, and state—were more or less common in post-onset surveys than in pre-pandemic surveys. Table 1 lists control variables, their coefficients indicating the probability of having a post-onset survey if an individual belongs to a given category, and significance testing. These coefficients became the weights, grouped by state, applied to each survey and, in aggregate, help to control for differences in pre- and post-pandemic-onset surveys.

3.4. Outcomes of interest

This study has four key young adult outcomes of interest to model in interrupted time series analyses: school enrollment, employment, disconnection, and financial well-being. School enrollment is based on the proportion of survey respondents who reported being enrolled either part-time or full-time in a secondary or post-secondary school, including high school, college, vocational school, or graduate school. Employment is based on the proportion of respondents who indicated working one or more part-time or full-time paying jobs. Disconnection is the proportion of respondents who reported being neither enrolled in school nor employed at the time of survey. Financial well-being is the proportion of survey respondents who had any savings, whether kept in their home, deposited into an account with a bank or credit union, or held by a relative or friend at the respondent's request.

This study examined two key outcomes to understand the direct impact of COVID-19 on young adult outcomes from the April 2021 survey administration: COVID-19 impact on education and COVID-19 impact on employment. Unfortunately, the survey does not ask directly about COVID-19 impact on disconnection or ability to save money.

3.5. Interrupted time series – dataset preparation and analysis

Once the data were weighted, we calculated summary statistics for each of the eight time periods included in our analysis to create a data subset with a single, aggregated value for each outcome variable. Using this dataset, we generated the interrupted time series results and figures included in the following section by estimating the effect of an intervention on the full sample when the outcome variable is ordered as a time series using a regression of the following model:

\[ Y_t = \beta_0 + \beta_1 T + \beta_2 X_t + \beta_3 (TX_t) \]

- \( Y_t \): The aggregated outcome variable measured at each time point (t). In our models, this is our outcomes of interest summarized as a weighted proportion at each survey period.
- \( \beta_0 \): The starting level of the outcome variable (intercept at the earliest time point).
- \( \beta_1 \): The slope or trend that the outcome variable was following prior to the intervention (the COVID-19 pandemic).
- \( T \): The time since the start of the analysis (including both pre- and post-pandemic time periods).
- \( \beta_2 \): The immediate change in the level of the outcome variable. In the context of this analysis, this is the change between the final pre-pandemic time point and the first post-pandemic time point.
- \( X_t \): A binary indicator variable representing the intervention period (the COVID-19 pandemic).
- \( \beta_3 \): The difference between the pre-intervention and post-intervention slopes of the outcome variable.
- \( TX_t \): An interaction term between the time since the start of the analysis and the intervention indicator variable.

In the following section, significant findings associated with \( B_2 \) and \( B_3 \) are presented as these indicate that the COVID-19 pandemic had a significant effect either immediately or over time on the selected outcome variable (Linden & Adams, 2011). Finally, a Cumby-Huizinga general test for autocorrelation in a time-series was performed (Baum & Schaffer, 2013). Results showed no significant
autocorrelation that required additional controls or adjustments (Linden, 2015).

4. Results

After applying propensity score weights to the analysis dataset, weighted and unweighted summary statistics for our demographic control variables as well as our outcomes of interest were calculated. Table 2 displays unweighted and weighted summary statistics for these variables.

Interrupted time series analysis revealed several models of interest. Table 3 includes proportion estimates and test statistics for trends in school enrollment, employment, disconnection from both school and work, and having any financial savings before and after October 2020, which we hold as the post-onset timepoint. Graphs and interpretation of these trends follow. Note that, while we converted our data to proportions with a range of 0 to 1 for analysis as seen in Table 3, we present the subsequent in-text results as equivalent percentages for ease of interpretation.

4.1. Enrollment in school

According to our models, the onset of the pandemic slowed an already declining rate of school enrollment among young people in our survey data. Prior to the pandemic, the proportion of young people who reported being enrolled either part-time or full-time in school significantly decreased by 3% every 6 months. The pandemic had no immediate and significant effect on enrollment rates around the October 2020 timepoint, but there was a significant longer-term effect of slowing (though not reversing) the decrease in enrollment rates over time by 2%. This translates to a slower drop (1% every 6 months) in enrollment rates after the onset of the pandemic (Fig. 1).

When young people were asked directly about the effects of COVID-19 on their education, 5% reported their school closed with plans to reopen, 1% reported their school closed with no plans to reopen, and 6% reported they had to drop out of school due to COVID-19. However, the majority of young people, 52%, reported their school moved to online or virtual classes, and that they were able to maintain their enrollment.

4.2. Current employment

Our results indicate that young people experienced a sharp and significant decrease in employment rates early in the pandemic, followed by a slow rebound. When young people were asked directly about the effects of COVID-19 on their employment, 16% reported being temporarily laid off or furloughed, 9% reported permanently losing their job due to COVID-19, and 13% reported being unable to find a job as a result of COVID-19. The proportion of young people who reported being employed was steady with an upward but non-significant trend prior to the pandemic. In the interval that spans the onset of the pandemic (October 2020), there was an immediate and significant decrease of 6% in the proportion. After this timepoint, however, there was subsequently a significant sustained increase of 2% (slope change) in employment rates over time, resulting in rates increasing by 3% from October 2020 to April 2021. This change likely reflects an anticipated rebound in employment rates after the initial sudden and significant decrease (Fig. 2).

Table 2
Unweighted and propensity score weighted summary statistics.

| Variable                               | Unweighted (n = 8004) | Weighted (n = 7999) |
|----------------------------------------|-----------------------|---------------------|
|                                              | %                     | %                   |
| Dependent variable                      |                       |                     |
| School enrollment                       | 44.45                 | 44.15               |
| Employment                              | 94.67                 | 94.74               |
| Disconnection from school and work      | 15.63                 | 15.63               |
| Financial well-being                    | 60.23                 | 60.12               |
| Control variable                        |                       |                     |
| Currently in foster care                | 17.75                 | 17.85               |
| Race/ethnicity                          |                       |                     |
| White, NH                               | 35.56                 | 35.67               |
| Black, NH                               | 29.12                 | 28.59               |
| Hispanic/Latino                         | 15.79                 | 15.84               |
| Two or more races, NH                   | 10.47                 | 10.57               |
| Masked or other, NH                     | 9.06                  | 9.33                |
| Sex at birth                            |                       |                     |
| Female                                  | 69.09                 | 69.23               |
| Male                                    | 30.91                 | 30.77               |
| Age group                               |                       |                     |
| 18–21 years old                         | 67.68                 | 68.00               |
| 22–26 years old                         | 32.32                 | 32.00               |
4.3. Disconnection from school and work

While more young people experienced disconnection from both school and work in October 2020, the rate quickly fell in the subsequent 6 months. The proportion of young people who reported being disconnected from both education and employment (i.e., neither enrolled in school nor employed) was steady with a non-significant upward trend prior to the pandemic. While there was an immediate and significant 4% increase in disconnection at the time of the pandemic, subsequently, there was a significant and sustained decrease of 2% in disconnection rates over time. The proportion of disconnected young people thus dropped by 2% in the first 6 months post-onset (October 2020 to April 2021). Similar to the trends we saw with employment, this could be a predictable adjustment as the trend rebounded toward its prior baseline (Fig. 3).

Table 3
Results of interrupted times series models comparing outcomes before and after the onset of the COVID-19 pandemic.

| Outcome model                  | Coefficient | SE\(^a\) | t     | P > | 95% confidence interval |
|-------------------------------|-------------|----------|-------|-----|-------------------------|
|                               |             |          |       |     | Lower | Upper             |
| Education                     |             |          |       |     |         |                   |
| Pre-onset slope \( \beta_1 \) | -0.03\(^**\) | 0.00     | -9.59 | 0.001 | -0.04 | -0.02            |
| Post-onset level change \( \beta_2 \) | 0.02 | 0.01 | 1.93 | 0.126 | -0.01 | 0.06            |
| Post-onset slope change \( \beta_3 \) | 0.02\(^**\) | 0.00 | 5.42 | 0.006 | 0.01  | 0.02            |
| Intercept \( \beta_0 \)       | 0.56\(^***\) | 0.01 | 44.57 | 0.000 | 0.53  | 0.60            |
| Employment                    |             |          |       |     |         |                   |
| Pre-onset slope \( \beta_1 \) | 0.01 | 0.00 | 1.02 | 0.363 | -0.01 | -0.02           |
| Post-onset level change \( \beta_2 \) | -0.06\(^*\) | 0.02 | -4.12 | 0.015 | -0.11 | -0.02           |
| Post-onset slope change \( \beta_3 \) | 0.02\(^**\) | 0.00 | 5.05 | 0.007 | 0.01  | 0.04            |
| Intercept \( \beta_0 \)       | 0.70\(^***\) | 0.02 | 34.09 | 0.000 | 0.64  | 0.75            |
| Disconnection                 |             |          |       |     |         |                   |
| Pre-onset slope \( \beta_1 \) | 0.01 | 0.00 | 1.85 | 0.138 | 0.00  | 0.01            |
| Post-onset level change \( \beta_2 \) | 0.04\(^*\) | 0.01 | 4.06 | 0.015 | 0.01  | 0.07            |
| Post-onset slope change \( \beta_3 \) | -0.02\(^**\) | 0.00 | -6.99 | 0.002 | -0.03 | -0.01           |
| Intercept \( \beta_0 \)       | 0.12\(^**\) | 0.01 | 9.50 | 0.001 | 0.08  | 0.15            |
| Financial well-being          |             |          |       |     |         |                   |
| Pre-onset slope \( \beta_1 \) | -0.01\(^*\) | 0.00 | -2.87 | 0.046 | -0.02 | 0.00            |
| Post-onset level change \( \beta_2 \) | 0.07 | 0.03 | 2.53 | 0.065 | -0.01 | 0.14            |
| Post-onset slope change \( \beta_3 \) | 0.08\(^**\) | 0.00 | 18.17 | 0.000 | 0.07  | 0.09            |
| Intercept \( \beta_0 \)       | 0.62\(^***\) | 0.01 | 57.39 | 0.000 | 0.59  | 0.65            |

\( \beta_1 \): Trend between April 2017 and October 2020.
Post-onset level change \( \beta_2 \): immediate change in outcome level in October 2020.
Post-Onset slope change \( \beta_3 \): difference in trends before (April 2017 to October 2020) and after (October 2020 to April 2021) the onset of the pandemic.
Intercept \( \beta_0 \): weighted baseline outcome level in April 2017.

\( ^a \) Newey-West standard error.
\(^* \) \( p \leq .05 \).
\(^** \) \( p \leq .01 \).
\(^*** \) \( p \leq .001 \).

Fig. 1. Trends in secondary and post-secondary school enrollment.
Fig. 2. Trends in employment (both part-time and full-time).

Fig. 3. Trends in disconnection from both school and work.

Fig. 4. Trends in financial well-being as demonstrated by having savings.
4.4. Financial well-being

Young people experienced both an immediate and sustained increase in savings. The proportion of young people who reported having any savings was significantly decreasing by 1% every six months prior to the pandemic. There was also a seasonal effect in which young people consistently reported having higher savings at the April survey period than at the October survey period. There appeared to be no significant immediate effect of the pandemic, but encouragingly, the rate over time increased by 8% between the post-onset timepoints, which was large enough to reverse the prior downward trend. This represents a significant longer-term effect of increasing rates of young people with savings over time by 7% (Fig. 4).

5. Discussion

The effects of the COVID-19 pandemic are far-reaching and devastating, with historic drops in employment rates, increased mental health stressors and decreased access to professional help, social isolation, and changes in education. Given the recent onset of the pandemic, there is limited peer-reviewed research exploring pandemic-related changes over time. Using data before April 2020 and data from October 2020 and April 2021, this interrupted time series found significant changes in school enrollment, employment, disconnection from work and school, and financial well-being due to COVID-19.

5.1. Education

This study indicates school enrollment was steadily decreasing (2.8%) from April 2007 to October 2020, which is consistent with other economic trends that indicate when the economy is stronger, fewer individuals choose to stay in school and instead enter the workforce (Chen, 2019). After October 2020, there was a small increase in enrollment rates, although not a large enough increase to turn the curve. Overall, the pandemic slowed the lowering enrollment rates from a 2.8% decrease pre-onset to a 1.2% decrease post-pandemic-onset (post-onset). This is consistent with results when young people were asked directly about the effects of COVID-19 on their education, while 72.9% of young people reported that COVID-19 had a negative impact (e.g., school had to close temporarily or permanently) on their education, only 6.4% reported they had to drop out of school altogether. Indicating that while education changed (e.g., young people moving to virtual school or schools temporarily closing and then reopening) most young people were not forced to drop out of school or stop going which contributes to the decrease post pandemic seen in the interrupted time series. Across the country, schools transitioned to online learning, which created accessibility difficulties for students, with many young people in foster care having unreliable or no access to the internet or lacking devices needed for remote learning (Pew, 2020). However, as local programs such as ConnectED NY Fund and the National Emergency Broadband Benefit Program scaled up, internet and device access likely expanded, providing foster youth with the tools needed to stay in school.

Increases in the dollar amount ($5000 to $12,000 per student per year) of Education and Training Vouchers (ETV; Administration for Children and Families, 2021) may have provided funds needed to enroll or persist in higher education. Yet, increases in tuition costs and student loan debt (Hess, 2020) may indicate that the downward trend in pre-pandemic enrollment may have been due to the exorbitant cost of higher education. While the increase in ETV funds will not alleviate the burden of paying for higher education, it may make staying in school instead of working more feasible for many young people.

While school disruptions are slowly declining since the start of the stay-at-home orders during COVID-19 (April 2020), more should be done to support young people currently in or who have aged out of foster care and are enrolled in school. Almost three-quarters of our sample reported that COVID-19 had a negative impact on their education, which indicate that young people who are enrolled in school may be struggling. Programs should consider how to provide supports such as tutoring, time management, childcare, and access to internet and reliable devices to young people who are enrolled to ensure students are able to persist in post-secondary education.

5.1.1. Employment

Employment is critical in the transition to adulthood because it provides income to cover basic needs, builds professional skills, and provides needed connections to peers, mentors, and the community at large (The Annie E. Casey Foundation, 2021b). Employment among young people in foster care was stagnant before the onset of the pandemic, but there was a sudden and dramatic decrease in employment rates (6.3%) among young people in foster care in October 2020 (post-onset). However, there was a sustained and significant increase among Opportunity Passport participants in employment by April 2021 (13 months into the pandemic). Furthermore, when young people were asked directly about the impact of COVID-19 on their education in April 2021, 16% reported being furloughed and 9% reported losing their job permanently. This was a slight improvement from the 19% of young people who reported being furloughed in October 2020 and 10% of young people who reported permanently losing their jobs in October 2020. This change between October 2020 and April 2021 mirrors the rebounding trend in employment for young adults in foster care mirrors the general population of adults in the United States. The overall U.S. unemployment rate was 14.7% in April 2020, dropping to 6.9% by October 2020, and to 6.1% by April 2021 (Bureau of Labor Statistics, 2020b; Bureau of Labor Statistics, 2020c; Bureau of Labor Statistics, 2021). As more Americans received the COVID-19 vaccination during the first quarter of 2021, the economy experienced a slow but steady rise in employment rates. As more young people with foster care experience become employed, programs should focus on providing needed supports that were less accessible during the pandemic, such as affordable childcare and employment skills training.

5.1.2. Disconnection

It is developmentally appropriate for young people between the ages of 18 and 26 to either be in school or working, and sometimes
both (Ross et al., 2016). While examining educational enrollment and employment separately has shed light on the experiences of young people who choose one over the other, it is also important to consider them together. It may be a positive outcome if a young person is not employed but is enrolled in school or vice versa. However, examining each outcome in a silo does not fully capture that positive outcome. Therefore, we examined disconnection from both work and school prior to the pandemic and during the pandemic. Disconnection rates were slightly increasing pre-onset (not statistically significant). However, at the first post-onset time period, there was a significant increase in disconnection. Fortunately, this sharp jump was followed by a significant improvement by April 2021. The industries where many young people work, such as hospitality and retail, were hit the hardest during COVID-19 with widespread layoffs occurring virtually overnight (Klein & Smith, 2021). Additionally, post-secondary institutions were initially unable to meet the demands of virtual learning and had to close dormitories, furlough student workers, and cancel some classes (National Conference of State Legislatures, 2021). This may account for some of the immediate increase in disconnection simply because young people who planned to work and go to school were unable to do so.

The data show a decrease in disconnection approximately 1 year (April 2021) into the pandemic. This reflects the same trends in employment and education discussed above. As post-secondary institutions adapted policies for virtual learning, reopened classrooms and dormitories, and started providing increased services, students were able to return to campus or enroll in school and attend virtually. Many student workers were able to return to their jobs and others found employment elsewhere as the economy improved. Even though rates of disconnection are decreasing, programs should continue to pay particular attention to those young people who are disconnected from work and school and provide tailored services to connect with those individuals and meet their goals. This may include increasing access to vocational training, mentors, or apprenticeships.

5.2. Financial well-being

Financial well-being is crucial during the transition to adulthood and is even more important for young people transitioning out of foster care. Current and former foster youth often do not have a financial safety net to rely on during this transition, which means they must navigate financial skills, such as building credit, savings, and accumulating assets, on their own. Leading up to the pandemic, the proportion of young people with savings was decreasing, although not at a statically significant rate. The onset of the pandemic did not immediately affect savings but did have a long-term significant impact with a 6.5% increase in the proportion of young people with savings by April 2021. There are many pandemic-related reasons for this change, including a rise in employment as the economy recovered in early 2021, money provided by the economic impact payments, increased unemployment benefits, or a decrease in expenses associated with transportation, entertainment, and other services that were no longer available during the pandemic. Young people having increased savings demonstrate a positive trend in their financial well-being.

5.3. Implications for practice

The effects of COVID-19 will likely resonate for years to come. While the pandemic may have created opportunities for young people to reenroll in school or contribute to savings, there were important negative impacts such as decreases in employment and disruptions to learning. Child welfare agencies across the country were also forced to change how services were provided and how caseworkers interacted with the young people on their caseloads (e.g., stopping in-person home visits and only connecting via Zoom or telephone, stopping parent and sibling visitation; Welch & Haskins, 2020). This lack of in-person interaction resulted in some young people becoming less connected and not having the resources to meet their basic needs (Greeson, Jaffee, & Wasch, 2020). As the United States slowly reopens, it is imperative that current and former foster youth are provided the proper education and employment resources (Welch & Haskins, 2020). Programs should consider the specific needs young people and tailor services for them. This may include increased tutoring, childcare services, or financial assistance to pay off debt.

5.4. Implications for policy

Many of the temporary changes seen under the Coronavirus Aid, Relief, and Economic Security (CARES) Act made a positive difference in the lives of young people transitioning out of foster care (Juvenile Law Center, 2020). For example, young people received more in ETV funding, which may have allowed them to continue their post-secondary training. Additionally, more young people were eligible for independent living programs (e.g., programs that teach life skills such as budgeting, healthy relationships, and cooking) because of increased funding and relaxed eligibility criteria, potentially connecting them to needed services to meet their basic needs and remain employed. Policymakers should consider making the changes under the CARES Act permanent to meet the needs of young people.

5.5. Recommendations for future research

The current study provides important research on the effects of COVID-19 during the first 14 months of the pandemic on outcomes for young people transitioning out of foster care. While this study is one of the first to explore the impact of COVID-19 14 months after it began, the pandemic continues to devastate many communities, which the effects of are not fully realized. Future research should extend the current analysis with additional timepoints to examine ongoing longer-term effects of the pandemic.

Future analyses should also examine differences in experiences related to COVID-19 based on race/ethnicity and gender. Black and Hispanic communities experienced higher rates of COVID-19 infection with inadequate access to needed treatment and vaccine.
availability due to systemic barriers (Center for Disease Control and Preven, 2021). To understand if similar patterns emerge among young people with child welfare experience, it is critical that future research examines how the effects of the pandemic were experienced across subgroups of those transitioning out of foster care.

Future research should explore supports for those in higher education. While the current study found the infrastructural effects of COVID-19 may be slowing the decline in young peoples’ enrollment, the trend continues to decrease, indicating that young people may need additional services that would support their decision to enroll in school. Future research should explore factors associated with school enrollment and retention to identify barriers that are preventing young people from attaining the education they desire.

While the current study identified an initial significant decrease in employment, the trend is now improving. Future research should explore changes in employment and how young people are currently covering their expenses. For example, some young people report that they now have to work multiple jobs to make enough money to cover basic needs, whereas before they had one steady job. While they are employed, which is a positive outcome, they are unable to make a living wage with one job, and thus must work multiple jobs, limiting the time available to study or enroll in school. Working multiple jobs during a pandemic also increases exposure to and risk of COVID-19 infection.

Lastly, future research should expand on the findings around savings. There was a decrease in young people being able to save money leading up the pandemic with significant improvement during the pandemic. More information is needed to understand the factors leading to the pre-onset decrease as well as the improvements during the pandemic, allowing policymakers to identify the specific policy or support that led to the improvement.

6. Limitations

While the current study presents important new findings on the impact of the COVID-19 pandemic, it is not without limitations. First, we examine only two timepoints after the onset of the pandemic, limiting our ability to understand the full scope of the impact of the pandemic, which is still underway as of the writing of this manuscript in August 2021. Additionally, the response to COVID-19 has dramatically varied across states and within and across child welfare agencies. Though we included controls for different states when weighting the data, our analysis does not allow us to connect different policies (such as stay-at-home orders, extended foster care provisions, etc.) to the outcomes observed. Thus, we cannot completely rule out other factors that may be influencing the results of the interrupted time series. Furthermore, all young people in our sample are connected to services through the Jim Casey Initiative, indicating that they have some level of connection to services. Therefore, our sample may miss youth with the highest need who are disconnected from all services. Young people in the sample may share other characteristics that impact their outcomes and (in)stability during the COVID-19 pandemic, so it is unclear how generalizable our results are for the larger population of young adults with foster care experience. Importantly, without a comparison group of young people who take the survey but are not enrolled in the Opportunity Passport, we cannot attribute all findings directly to the pandemic.

7. Conclusion

The COVID-19 pandemic will have lasting impacts on the United States and the rest of the world. While these effects are universal, some communities may experience a slower recovery than others or lack of recovery due to systemic barriers. One such community is young people in foster care. These young people need services and supports to stay connected to education and employment while building their financial resiliency through increased savings. Furthermore, they need opportunities to develop new skills through training as well as make connections with supportive adults through employment opportunities. As the country continues to adapt to the pandemic, the needs of current and former foster youth should be prioritized.

Acknowledgements

This research was funded by the Annie E. Casey Foundation. We thank them for their support and acknowledge that the findings and conclusions presented in this article are those of the authors alone, and do not necessarily reflect the opinions of the Foundation. We sincerely thank the young people in the Jim Casey Initiative for sharing their stories and providing us with data. Several colleagues reviewed earlier versions of this manuscript including Karin Malm, Sharon Vandivere, and Sarah Kelley. Thank you for your input and guidance.

References

Aquilino, W. S. (2005). Impact of family structure on parental attitudes toward the economic support of adult children over the transition to adulthood. Journal of Family Issues, 26, 143–167. https://doi.org/10.7249/RRA308-11
Arnett, J. (2007). Emerging adulthood: What is it, and what is it good for? Child Development Perspectives, 1(2), 68–73.
Baum, C. F., & Schaffer, M. E. (2013). ACTEST: Stata module to perform Canby-Huizinga general test for autocorrelation in time series. Statistical Software Components, Boston College Department of Economics.
The Annie E. Casey Foundation. (2021, May). The benefits of workforce exposure and career programming for youth and young adults. https://www.aecf.org/blog/the-benefits-of-workforce-exposure-and-career-programming-for-youth-and-you.

Welch, M., & Haskins, R. (2020). What COVID-19 means for America’s child welfare system. Brookings Institute. https://www.brookings.edu/research/what-covid-19-means-for-americas-child-welfare-system/.

Wood, D., Crapnell, T., Lau, L., Bennett, A., Lotstein, D., Ferris, M., & Kuo, A. (2018). Emerging adulthood as a critical stage in the life course. In N. Halfon, C. Forrest, R. Lerner, & E. Faustman (Eds.), Handbook of life course health development (1st ed., pp. 123–144). Springer.