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Impact of COVID-19 on the Employment of Transition-Age Military-Dependent or Connected Autistic Youth

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Abstract

Research is needed that describes how the COVID-19 pandemic affected the employment of autistic youth. In this mixed-methods study, we present data on three cohorts of military-connected/dependent youth on the autism spectrum participating in a randomized, waitlist-controlled trial of Project SEARCH + ASD Supports to describe the potential effects of COVID-19 on employment. We also present three participant case studies to highlight challenges and opportunities faced during the transition process. Findings indicate the pandemic appeared to affect the 2019-2020 cohort most negatively, with employment outcomes lagging the previous cohorts by 29.1% to 48.2%. However, the case studies highlight approaches that effectively supported participants, including interagency collaboration, military and federal partnerships, skilled employment specialist support, and family involvement.

Keywords

autism, secondary transition, employment, military, COVID-19

Military children often experience family relocations and separations due to deployments and changes of station. Such events may have adverse impacts on military-dependent or connected autistic youth, who may not have access to transition-focused services and interventions designed for their unique needs. This is concerning, given the large numbers of military-dependent or connected youth who have been identified as having autism. Recent data from TRICARE, the health insurance provider to military families by the U.S. Department of Defense, indicate that approximately 34,361 military dependents had a diagnosis of autism, and approximately 20,735 of these dependents were from active-duty military families (U.S. Department of Defense, 2021). Despite these large numbers, very little research has been conducted to date on the needs of this population (Davis et al., 2016).

Findings from the few studies conducted thus far on the needs and experiences of military families with children with autism highlight the challenges they face. These studies used qualitative or survey designs to explore the experiences of military families with children with disabilities in general (Aleman-Tovar et al., 2022; Classen et al., 2019) and children with autism (Davis et al., 2016; Davis & Finke, 2015). Military families with children with disabilities experience difficulties in obtaining needed disability-related services, limited access to disability-related resources, and significant variations in the quality of available resources or programming for their children across different school districts (Aleman-Tovar et al., 2022; Classen et al., 2019). Research into the experiences of military families with children having autism describes similar barriers. For instance, these families report that relocations result in delays in their children receiving autism-focused interventions, lack of service continuity, extensive dissatisfaction with service quality, and lack of support from extended family and communities (Davis & Finke, 2015). Furthermore, parents report that deployments and relocations negatively affect their children's progress and exacerbate behavioral and emotional difficulties (Davis et al., 2016; Davis & Finke, 2015).

Studies to date have not investigated how these challenges affect the specific transition experiences of military-dependent or connected autistic youth. However, it seems clear the factors described earlier may complicate the transition from school to work for this population. By the time military-dependent or connected autistic youth reach transition age, it

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is likely that their family will have experienced multiple relocations and deployments. These events can result in disruptions in special education services, educational changes to Individualized Education Programs, and lost learning time (Davis & Finke, 2015; Lincoln & Sweeten, 2011). During the transition process, military families may struggle to advocate for their children, due to difficulties in navigating different service delivery systems and limited school resources, such as trained personnel and inclusive education programs (Aleman-Tovar et al., 2022). Transition-age youth and families often seek connections with new adult service organizations, including state VR agencies and state intellectual/developmental disability organizations. If these connections are hard to make, or if there is limited or ineffective transition programming offered by school districts, then families and students may struggle to achieve transition-related goals.

In addition, emerging evidence indicates that the COVID-19 pandemic added layers of complexity to the employment experiences of transition-age youth and adults with disabilities. At the start of the pandemic, people with developmental disabilities were potentially at heightened risk of contracting COVID-19 due to physically close interactions with care and service providers and difficulties adjusting learned routines and developing new skills (e.g., hand washing and mask-wearing; Sheppard-Jones et al., 2021). The beginning of the COVID-19 pandemic had a potentially disproportionate effect on the employment of people with developmental disabilities, due to extensive layoffs of entry-level employees in service industries, limited access to on-the-job support from supported employment providers, and a lack of technology training, accommodations, and modifications during the shift to remote work (Sheppard-Jones et al., 2021). Similar potential employment concerns existed for youth with disabilities receiving VR services, as entry-level work became riskier, more sophisticated technology skills were required, VR services were increasingly delivered virtually, and uneven access to mobile technology and the internet persisted (Kaya et al., 2021). Recent studies highlighted these concerns, describing high furlough rates and significant reductions in the number of hours worked for employees with disabilities early in the pandemic (Bishop & Rumrill, 2021; Schall et al., 2021). National labor market data also describe the impact of COVID-19 on the employment of transition-age youth with disabilities. The 2021 annual unemployment rate for youth with disabilities from 20 to 24 years of age was 16.5%, nearly double the rate of youth without disabilities in the same age range (Office of Disability Employment Policy, n.d.). While the negative impact of the COVID-19 pandemic on the employment of people with disabilities is clear, it is less clear how the pandemic impacted the transition-related employment experiences of military-dependent or connected autistic youth.

Transition From School to Work

Research indicates that work experience during high school predicts successful postschool employment outcomes for students with disabilities (Mazzotti et al., 2021). The Project SEARCH model offers transition-age students with developmental disabilities extensive work-related instruction and sustained work experience, and it has been shown to be effective in improving employment outcomes for this population (Rowe et al., 2021). Research has also demonstrated the effectiveness of the Project SEARCH model, when combined with applied behavioral analytic techniques such as task analysis, discrete trial training, behavioral rehearsal, visual supports, self-management procedures, and reinforcement systems in improving employment outcomes for transition-age autistic students (Wehman et al., 2017, 2020). The resulting intervention, Project SEARCH Plus ASD Supports (PS+ASD) is a 9-month intervention for autistic youth who intend to graduate and seek competitive integrated employment (CIE; Wehman et al., 2017). Youth with significant impact from autism who participate attend their final year of public school at a business site instead of high school. During that year, they learn employment skills within a systematic rotation through three 10-to-12-week internships that match their ultimate career goals. Specific work skills taught during internships include organizing, data entry, filing, sterilizing, decision-making, and problem-solving. In addition to specific job skills, participants also learn behavioral skills important to CIE success, like transportation to and from work, self-care, and money management. During each internship, participants are assessed by their instructor, job coach, and internship supervisor and participate in at least two internship evaluations. In addition, participants lead one meeting per internship to share what they have learned with their transition planning teams.

Two multi-site, randomized clinical trials of the PS+ASD model compared employment outcomes of transition-age autistic youth with significant support needs who participated in PS+ASD to a control group of autistic students with significant support needs who received traditional high school-based transition services. The employment rates of PS+ASD participants at 12 months post-graduation were significantly higher than those of control group participants who received traditional transition services, at 87% employed versus 12% employed, and 73.4% employed versus 17% employed in each of the randomized clinical trials, respectively (Wehman et al., 2017, 2020)

More recently, PS+ASD's effectiveness for military-dependent and connected autistic youth has been investigated. Preliminary results from Year 1 of a 3-year, randomized waitlist-controlled trial indicate that military-dependent and connected autistic youth who participate in PS+ASD also experience better employment outcomes

than their peers who receive traditional, high school-based transition programming (Whittenburg et al., 2020). However, the onset of the COVID-19 pandemic temporarily disrupted this research study. In the spring of 2020, schools closed, the military significantly curtailed physical access to installations, troop movements paused, and multiple military installation organizations and surrounding community businesses laid off workers. PS+ASD treatment group cohort members were affected by these disruptions in different ways, and their experiences reflect the challenges and opportunities of the larger U.S workforce during the COVID-19 pandemic. While COVID-19 may be a "once-in-a-century" event, studying its impact on the employment of military-connected and dependent autistic youth may result in the development of interventions to address similar economic downturns (Center on Budget and Policy Priorities, 2022). Furthermore, given the high numbers and unique needs of military dependents with autism, it is important to identify and provide effective targeted support for this population (Davis et al., 2016).

Purpose of Current Study

The purpose of this sequential explanatory mixed-methods study is to describe how the COVID-19 pandemic affected the employment of military-connected and dependent autistic youth who were in the process of transitioning from school to work. This method was chosen due to the unique nature of the COVID-19 pandemic and its impact on the U.S. economy, especially as it relates to the employment of transition-age, military-dependent and connected autistic youth, and because it provided an opportunity to capture the unique phenomena experienced by military-connected and dependent autistic youth. To address this study's aim, we report the changes in the employment and transition services provided to youth who participated in a randomized waitlist-controlled trial of PS+ASD for military-connected and dependent autistic youth. We present results regarding the impact of the COVID-19 pandemic on the employment of treatment participants who were employed prior to the pandemic and those who were seeking employment as the pandemic affected the United States, and we conclude with three case studies describing the experiences of military-connected and dependent autistic youth who were in different stages of the transition process. We sought to answer the following primary research question: What was the overall impact of the COVID-19 pandemic on the employment of all treatment group participants in PS+ASD for military-dependent and connected youth? We also asked the following three sub-research questions:

Research Question 1: What were the quantitative employment outcomes experienced by PS+ASD treatment participants across study cohorts?

Research Question 2: What were the descriptive experiences of three participating treatment group youth related to the impact of the COVID-19 pandemic?

Research Question 3: What do the quantitative and qualitative data indicate about the impact of the COVID-19 pandemic on the transition to employment experiences of treatment group participants in PS+ASD for military-connected and dependent youth?

Method

To address these research questions, the researchers used a sequential explanatory mixed methods study design (Onwuegbuzie & Hitchcock, 2022; Tashakkori & Teddlie, 2003). The researchers first collected data on the quantitative employment outcomes for the participants of the PS+ASD intervention across 3 years of the study. These quantitative data are presented to compare employment status and effects as the pandemic progressed. Second, the researchers developed three qualitative case studies to exemplify the specific impact and subsequent supports that were required to assist these youth in adjusting to changes in their workplace due to the pandemic. Finally, the researchers integrated these data to address the research question regarding the impact of the COVID-19 pandemic on these youths' transition to employment. This research was completed in three cohorts over the 2017-2018, 2018-2019, and 2019-2020 school years. Given the focus of PS+ASD on the acquisition of CIE for youth with autism, the students who participated in this research were at distinct and important times in their transition from high school to employment when the COVID-19 pandemic impacted employees across the world. Specifically, by March 2020, youth from Cohort 1 were completing their first to second year of employment; youth from Cohort 2 were just starting employment or still seeking employment, while youth in Cohort 3 had their PS+ASD high school year interrupted by the onset of the pandemic. These three cohorts provided the researchers the opportunity to observe in real time the impact of COVID-19 on the transition to employment of these participants. The data used to analyze the impact of the COVID-19 pandemic on the employment of transition-age military-dependent and connected autistic youth were collected prospectively as a part of the larger randomized waitlist-controlled trial of PS+ASD. This study was approved by the Virginia Commonwealth University Institutional Review Board. All participants consented to participate prior to the commencement of any research procedures or data collection.

Participants

Participants for the larger randomized waitlist-controlled trial, from which these data were taken, were recruited in the

spring prior to their participation in the PS+ASD research by flyers or direct contact during their individualized education plan meetings. To be included in the larger study, participants had to have a medical and/or educational diagnosis of autism, be working toward a special education high school certificate of completion, be eligible for VR services, be independent in basic self-care (e.g., using the restroom, eating, and dressing), and be a military dependent or connected youth between the ages of 18 and 21. Military-dependent youth were defined as students whose primary caregivers were active-duty military members, retired military members, or active-duty military reserve members. Military-connected youth were defined as students whose immediate family members served in the military or were civilians working with the military (Whittenburg et al., 2020). All participants in the randomized waitlist-controlled trial demonstrated significant impact from their disabilities that entitled them to continued special education services through age 22 and required ongoing direct instruction in multiple areas, including independent living skills, public transportation skills, work-related social skills, money management skills, and problem-solving (Whittenburg et al., 2020). The three case studies were contrived by the researchers but represented one person from each of the three cohorts presented in the quantitative data. We purposefully selected cases that aligned with our research questions and study aims (Maxwell, 2013) to develop case studies that represented the experiences of military-dependent or connected autistic youth who were at different points in the transition from school to work during the COVID-19 pandemic, including employed for more than a year and stable in employment, hired within last year, and not yet employed.

Data Sources

Data sources varied across methodologies. To capture COVID-related changes in program participation and employment status, quantitative employment-related outcome data were collected prospectively across the larger study through participant surveys and review of employment records. Data were collected on program participation, employment status, hours worked, and wages earned. Any errors in quantitative employment-related outcome data were corrected at quarterly reviews conducted by the principal investigator. These data were also aggregated and double-checked against employment records to further confirm reliability. All data were collected and scored by an independent data collector not associated with the implementation of the intervention. Data were transcribed and stored in an encrypted secure online database. The database was regularly cross-checked against paper copies for transcription errors and corrected when they were found. The transcription error rate at each check was less than 5% and ranged from 0% to 4.3%.

Qualitative data were collected through prospective observation and reviews of case note reports from PS+ASD staff and post-graduation supported employment services files. Case note reports were based on daily-weekly observations conducted by employment specialists within work settings and were written immediately after leaving the work site. Follow-up interviews were conducted when needed to verify or clarify data obtained through record reviews and observations and included interviews with participants, employment specialists, families, and/or employers. Data used to develop the contrived case studies were triangulated across sources and verified by employment specialists.

Procedures

Quantitative employment outcome data were collected at three time points, at baseline (September to October of the PS+ASD school year), 12 months after baseline (September to October of the year after the PS+ASD school year), and 18 months after baseline (April to May of the school year following the PS+ASD school year) and were used to analyze the quantitative employment outcomes experienced by PS+ASD treatment participants across study cohorts. Employment data were reported in three ways: current employment status (employed or not employed), average hours worked weekly, and average hourly wage. During the pandemic, as employment status changed based upon mitigation measures and required closures, researchers collected employment status as employed working regular hours, employed working reduced hours, furloughed with pay, furloughed without pay, unemployed due to the pandemic, unemployed due to self-choice, seeking employment, and in internship. Data relevant to the study were the internship and employment status of each participant as they completed the year and transitioned to employment. Data on internship and employment status were collected and reported by providing a list of employment outcomes by the participant, their current duties, wages earned, and hours worked.

The quantitative data were analyzed first by calculating descriptive statistics at each data collection timepoint across the three PS+ASD cohorts. Initial findings highlighted significant differences between cohorts related to employment status and employment outcomes during the COVID-19 pandemic. Based on these quantitative findings, the researchers developed qualitative case studies to better understand COVID-related experiences that potentially impacted the transition to employment for PS+ASD participants. Purposeful sampling was used to identify cases across each of the three points of transition during the COVID-19 pandemic (i.e., stable in employment for more than 1 year, employed for less than 1 year, and not yet employed).

The case studies were contrived by the researchers and were developed using qualitative data to describe the

experiences of youth related to the impact of the COVID-19 pandemic on their transition to employment. Data used to inform the case studies came from worksite observations and case note reports that were completed between March 2020 and October 2021. The researchers reviewed observational notes and case note reports of participants who were experiencing these transition points to code for the effect of the COVID pandemic on employment or transition to employment, the identification of COVID-related barriers, the identification of COVID-related supports and instructional strategies, the collaboration noted across different members of the team (researchers, school district staff, vocational rehabilitation staff, and employers) to address barriers, and notation of critical events (i.e., dates of workplace closures during early COVID pandemic, dates of hybrid work arrangements, dates of return to work, dates of internships, dates of collaborative team meetings, hourly wages, weekly hours worked). Then, the researchers used this information to develop the case studies. When questions arose between members of the research team about specific details within the case studies, data were verified through follow-up interviews with employment specialists, family members, and employers. The interviews included specific questions clarifying information obtained on types of hybrid work arrangements used by business organizations, family roles in developing and implementing COVID instructional activities at home, and specific work responsibilities and tasks at different stages across the pandemic, career goals, dates of critical events, verification of hours worked/wages earned.

To enhance the trustworthiness of the narratives reported through the case studies, the researchers used data triangulation (case notes, observations, interviews) and investigator triangulation (the use of several researchers who were familiar with the setting and contexts; Brantlinger et al., 2005). Workplace observations were conducted to identify the use of, and specific details related to, the work-related instructional strategies and supports described in the case note reports. Follow-up interviews were conducted when needed with employment specialists, family members, and employers to clarify data obtained through case note reports and workplace observations. Each of the case studies was systematically reviewed multiple times by different members of the research team, all of whom were familiar with the settings and contexts of the case studies, and any disagreements about content to include/exclude from the case studies were resolved through consensus.

Data Analysis

The researchers used a concurrent triangulation to analyze the mixed-method data presented herein (Castro et al., 2010), to investigate the impact of the COVID-19 pandemic more fully on the transition to employment experiences of military-connected and dependent autistic youth. This strategy required concurrent data collection and analysis to define the relationship between COVID and the employment status of the participants. First, the researchers analyzed the quantitative data by calculating frequencies and mean for comparison across cohorts. Given the small number of participants and the lack of any research control, the researchers completed simple comparisons without statistical analysis. Next, the researchers compiled the qualitative data to create individual case studies that described representative experiences in transition or employment during the pandemic. In the analysis of the qualitative data and development of the case studies, the researchers employed several quality indicators, including sorting and coding results in meaningful ways, documenting the methods used to establish trustworthiness, and substantiating conclusions through the review of multiple case note reports and observational notes (Brantlinger et al., 2005). Finally, the researchers used data comparison and data triangulation to integrate the quantitative and qualitative data, thereby providing an analysis of the overall impact of the COVID-19 pandemic on the employment of transition-age military dependent or connected youth with autism, as described in Table 2.

Results

PS+ASD Participant Demographic Information

Demographic data collected at baseline indicate that PS+ASD comprised a diverse group of participants, where the mean age was 19.59 years old. With respect to race and ethnicity, 49% of participants identified as White, 43% as Black, 5% as Latinx, and 3% as Asian-American. Furthermore, 81% of participants identified as male. Twelve of the 22 participants reported their family income. Eight participants reported a family income less than $50,000 yearly, and four reported greater than that yearly income. Finally, 59% had a medical diagnosis of autism and 91% had educational eligibility for autism. (These findings overlapped so all participants either had a medical diagnosis or educational eligibility). Six participants reported other diagnoses and educational eligibility categories in addition to autism including intellectual disability, other health impaired, and multiple disabilities. Participants reported a mean intelligence quotient of 62.17, which falls within the intellectual disabilities range.

Overall Impact of the COVID-19 Pandemic

Across the 3 years of the randomized waitlist-controlled trial, 22 participants were randomized into the PS+ASD treatment condition, and 21 participants completed the entire intervention. There were six participant completers in the 2017-2018 school year, seven in the 2018-2019 school

Table 1. Employment Status of Participants in PS+ASD From September 2020—June 2021.

Participants	September 2020	December 2020	March 2021	June 2021
Employed Working Regular Hours on Job Site	4	5	5	10
Employed Working Reduced Hours on Job Site	3	2	2	2
Furloughed[a] With Pay	1	1	1	0
Furloughed Without Pay	2	3	2	0
Unemployed Due to Pandemic	1	0	0	0
Unemployed Due to Self-Choice	1	2	2	1
Seeking Employment	3	2	3	2
In Internship	1	1	1	1

Note. $n = 16$. PS + ASD = Project SEARCH + ASD Supports.
[a]Furloughed refers to individuals who eventually returned to their jobs once businesses were opened after the restrictions were lifted.

Table 2. Impact of COVID-19 on Transition to Employment Experiences.

Cohorts	Employment outcomes	Case study data	Mixed-methods interpretation
Cohort 1 (Employed 1–2 Years)	Employment rate = 66.6% Average weekly hours worked = 27.75 Mean hourly wages = $8.77	Initial furloughs with pay Workplace schedule and task changes due to COVID-19 Additional hours needed for job coaching Family reinforced COVID-19 mitigation skills at home	Some employment impact Need for re-training Increased family involvement
Cohort 2 (Employed Less Than 1 Year or Seeking Employment)	Employment rate = 85.7% Average weekly hours worked = 24.16 Mean hourly wages = $8.86	Reduced work hours due to COVID-19 Workplace task and routine changes due to COVID-19 Innovative use of distance job coaching and video chats	Some employment impact Adaptations to provide job coaching services
Cohort 3 (Employed Less Than 1 Year or Seeking Employment)	Employment rate = 37.5% Average weekly hours worked = 22.5 Mean hourly wages = $11.22	Program interrupted by COVID-19 More time needed for career development and work experiences Videoconferencing used for career planning meetings Family support/training for COVID-19 mitigation skills at home	Significant employment impact Adaptations to continue transition planning and career development Increased family involvement

year, and eight in the 2019-2020 school year. The third cohort was mid-year when the COVID-19 pandemic hit, resulting in the closing of all in-person public schools in Virginia. One participant in the 2018-2019 school year was terminated from the program due to a medical need. This resulted in 13 individuals who participated in a full year of PS+ASD and eight who participated in a partial in-person/virtual year of PS+ASD.

While 13 of 21 individuals gained employment at the 12-month point from baseline, an additional three individuals gained employment after that time point resulting in 16 participants out of 21 (76.2%) who gained employment. By September 2019, two participants relocated out of the state, and two individuals quit their jobs and were not seeking employment. As of September 2020, 12 participants had achieved CIE, three participants were seeking employment, and one participant was completing an unpaid internship in the community. Table 1 presents the working status of those 16 for September and December 2020 and March and June 2021.

The pandemic seemed to have the most impact on the 2019-2020 cohort whose employment outcomes lagged behind the previous two cohorts by 29.1% to 48.2%, respectively. Other ways the pandemic impacted all these individuals was through temporary furlough and loss of hours, especially between September 2020 and March 2021 when only seven of 16 individuals were working on-site, with one individual receiving pay while furloughed through the federal Weather and Safety Leave program. By June of 2021, however, as vaccination rates increased, the on-site employment outlook increased dramatically with 12 individuals working on their job site, and only two continuing to work reduced hours. The employment outcomes at 12 months post-baseline for each of the 3 years of the program are presented in Table 2.

Case Studies of Three Participants

To further describe the individual impact of the pandemic, the authors present three case studies, one from each of the cohorts in the larger randomized waitlist-controlled trial of PS+ASD for military-dependent and connected youth.

Grady. Grady is a 23-year-old, Black, military-dependent youth who was medically diagnosed with autism and epilepsy and received special education services under the category of autism. Grady enrolled in PS+ASD at the beginning of the 2017-2018 school year and successfully completed PS+ASD in June 2018 as a member of the first cohort of treatment group participants. At PS+ASD, Grady took part in three different 10- to 12-week internships on military installations. His first internship was at the base commissary, his second internship was at the installation's food court and his third internship was at one of the installation's recreation centers. Immediately after completing PS+ASD, Grady applied for and was offered a full-time federal position as a recreation assistant at one of the recreation centers on the military installation. Grady's job responsibilities focused on checking guests in and out of the recreation center, maintaining equipment and the recreation center's overall appearance, conducting hourly census counts, and ensuring that recreation center rules and guidelines were followed by guests.

In March 2020, Grady had been employed as a full-time recreation assistant for almost two years. He received supported employment follow-along services, where his employment specialist checked in with him and his supervisor two to three times per month to monitor progress, offer support when learning new tasks, and problem-solve issues together. As the COVID-19 pandemic grew in spring 2020, local military leaders began to make determinations about which departments on base would remain open and which would close to limit the spread of the virus. In March 2020, the installation recreation centers were deemed to be nonessential and high-risk areas for potential COVID-19 spread. Grady, like the other recreation center employees, was able to access weather and safety leave, which allows federal employees to stay home but still be paid during major weather or public safety events. Grady remained at home but still received a paycheck while the recreation centers were closed to the public.

While Grady was at home, his employment specialist maintained contact with him, his family, and his supervisor to share information related to evolving installation of COVID-19 policies through email, phone calls, and video conference meetings, instead of face-to-face contact. As plans began to be made for recreation center employees to return to in-person work in the summer 2020, the employment specialist's focus shifted to teaching Grady skills and practices for new COVID-related guidelines at work. The employment specialist met with Grady and his family via video conference to teach handwashing skills, social distancing, and proper mask usage. Because video models had been used successfully with Grady in the past to teach work skills, the employment specialist incorporated online videos about COVID-19 hygiene skills into these sessions. In addition, Grady and his family practiced hand washing and mask wearing together for gradually longer periods of time. Specifically, they began taking walks around their neighborhood while wearing masks and practiced wearing masks inside their home.

When Grady returned to in-person work in September 2020, there were new job-related policies and procedures to learn that required more intensive training and support from the employment specialist. The employment specialist helped Grady safely navigate break times by showing him how to check the newly developed employee break schedule, to set alarms on his phone to independently know when to go and return from breaks, and to check the break room before entering to comply with new COVID social distancing requirements. Grady also had to learn new sanitizing procedures, such as regularly cleaning all high-touch areas (i.e., doors, plexiglass barriers) and more intensively cleaning exercise machines. Because these new responsibilities required more targeted training and support than could adequately be provided through follow-along services, the employment specialist coordinated with Grady's VR counselor. Grady's VR counselor approved post-employment services, which allowed the employment specialist to provide job site training to Grady when he returned to in-person work. The employment specialist was onsite every day the first week that Grady returned to work and then gradually faded the level of support over the subsequent 3 weeks, as Grady mastered the new policies and procedures. Grady was transferred from post-employment services back to less intensive follow along services beginning in November 2020.

Daniel. Daniel is a 24-year-old, White, military-connected youth who was a member of the second annual cohort of treatment group participants during the 2018-2019 school year. He had a medical diagnosis of autism, attention-deficit hyperactivity disorder, and sensory processing disorder. Daniel completed PS+ASD in June 2019. At PS+ASD, Daniel's three internships were at the commissary, the warehouse of the installation's medical center, and the food court. During the summer after completing PS+ASD, Daniel was hired by the hotel on the installation as a part-time laundry attendant. His job tasks included transporting dirty linens from guest rooms back to the hotel linen room, inspecting and inventorying linens to be sent out to the laundry service contractor, determining which hotel floors needed clean linens, preparing laundry carts with the correct amounts of clean linens, and delivering clean linens throughout the hotel.

In March 2020, Daniel had been employed at the installation hotel for approximately 8 months. Daniel's VR case had been successfully closed, and he received supported employment follow-along services, consisting of weekly check-ins with him, his coworkers, and his supervisor. As the COVID-19 pandemic began to spread and troop movements, planned conferences, and scheduled trainings slowed and then stopped, the installation hotel's guest count decreased dramatically. To limit the potential spread of the virus and address declining guest counts, the hotel adjusted all employees' work schedules and implemented federal weather and safety leave. Daniel continued to work in person at the hotel for 3 days each week but remained at home and was paid for the other 2 days a week he was scheduled to work.

The employment specialist was unable to provide in-person supported employment services through May 2020, due to COVID-19-related restrictions limiting installation access to essential personnel. Instead, the employment specialist and Daniel used periodic, short video chats while Daniel was at work to learn new policies and procedures. At the beginning of this process, the employment specialist checked in with Daniel a minimum of three times a day via video chat, then gradually faded the check-ins as Daniel mastered the new procedures to once a week. The video chats focused on helping Daniel learn and incorporate new COVID-related procedures. For instance, the employment specialist instructed Daniel on proper mask usage and reinforced correct masking procedures through video chats. With the implementation of a staggered work schedule at the hotel, Daniel had less coworker support than before the pandemic. Daniel and the employment specialist used video chats to check task accuracy and to answer questions Daniel had about completing tasks independently. On the occasions when another laundry attendant was scheduled at the same time as Daniel and they worked together within the linen room to conduct linen inventory, the employment specialist used video chats to teach Daniel how to maintain 6-feet social distance from his coworker by using familiar items within the laundry room to demarcate distance. The employment specialist and Daniel also identified strategies for managing increased downtime at work. Daniel set timers on his phone for when he should check back with his supervisor to see if there was more work to be done, and the employment specialist followed up with brief video chats to make sure he was back at work.

By June 2020, restrictions on installation access were lessened, and the employment specialist was cleared to begin face-to-face services with Daniel at the installation hotel again. The employment specialist used a combination of in-person visits and video chat check-ins to ensure that Daniel continued to incorporate the new skills and procedures into his work. In October 2020, Daniel returned to his regular work schedule, and he was shortly promoted thereafter to a full-time federal laundry attendant position with the hotel.

Timothy. Timothy is a 23-year-old, White, military-connected youth who participated in the third treatment group cohort at PS+ASD during the 2019-2020 school year. While attending PS+ASD, Timothy participated in internships with the installation's military museum and the military identification/badge office. In April 2020, school system in-person learning closures and decreased access to military installations forced PS+ASD to end and students to participate in online classes through their school districts for the remainder of the school year.

In April 2020, Timothy and his family contacted the PS+ASD team about the possibility of participating in a third internship in fall 2020. Timothy, his family, his VR counselor, his special education team, and his community rehabilitation provider team began to meet regularly via video chats from April 2020 through July 2020 to discuss different options and develop a plan. One of the first issues that emerged during the team meetings was that Timothy was not sure of his ultimate career goals. This issue is frequently addressed across the PS+ASD internships, but especially during the third internship as interns prepare for graduation and their job search. Timothy and the team decided to engage in person-centered planning to support Timothy in identifying the type of work he wanted to do and in finding a third internship off base that would provide him with additional skills and experiences. Timothy's VR counselor approved and provided funding for the additional internship. Over the summer, Timothy and his team met regularly via video conferences to discuss his interests, wants, and dreams and develop both short- and long-term goals related to his career and his life outside of work. Timothy decided that he wanted to work in a professional setting, in a job with a regular schedule that allowed him to use his skills and interests in computers and customer service.

Once Timothy had determined his career goal, he and his team used their professional and social networks to identify potential local organizations that might be willing to host Timothy in an internship. The employment specialist had a contact within the local city government, who as a former military officer, was familiar with and very supportive of PS+ASD. Together, they developed a part-time internship for Timothy at a local museum. Timothy worked as an intern at the museum from August 2020 through March 2021. He performed a variety of work tasks during this internship experience, such as digitally scanning paper and photographic historical artifacts, inventorying museum displays, and interacting with museum visitors. One of Timothy's concerns as he prepared to begin his internship was how to protect himself from COVID-19. Timothy's team began by providing him with easy-to-read information on COVID-19

and showing him how he could access current state and local-level COVID data online. The employment specialist also used online resources, video chat instructional sessions, and family practice activities to teach the importance of regularly washing his hands, practicing social distancing, and how to properly wear a mask in public.

While Timothy was interning at the local museum, he and his team continued to seek paid employment opportunities in the local community, and Timothy expressed an interest in obtaining a federal office support position on the installation. The team identified an additional internship experience that would further enhance Timothy's professional skills and increase his marketability in this area through the military installation's marketing department. In this internship, Timothy is learning to use graphic design software packages (i.e., Photoshop) to create fliers, posters, and memorandums about events happening across the installation and is assisting with developing and implementing special events on the installation (e.g., 10k runs, concerts, meet and greets). As of the preparation of this case study, Timothy continues to intern in the marketing department and remains focused on his job search.

Integration of Quantitative and Qualitative Findings

The combined analysis of quantitative and qualitative data highlights several key findings about the impact of COVID-19 on the employment experiences of military-connected or dependent youth participating in PS+ASD. Cohorts were impacted differently as the COVID-19 pandemic evolved. Initially, business and school closures resulted in loss of in-person internship experiences and substantively lower employment rates for Cohort 3 participants, who were earlier in the process of making the transition from school to work. However, COVID-19 also disrupted the employment experiences of participants who had been employed longer. During the height of the pandemic, in September 2020, only 4 of 16 (25%) of participants were working their regular hours on their regular job site. Otherwise, 75% of employees were working reduced hours, furloughed, or unemployed. Nevertheless, 63.75% of employees were back at work by March 2021 with only 1.25% continuing to work reduced hours.

Importantly, the integrated analysis identified innovative approaches that military-dependent or connected autistic youth, service providers, and families used to successfully navigate these COVID-19 disruptions. These approaches help explain how youth were able to successfully return to work and maintain employment. First, PS+ASD participants learned COVID mitigation strategies related to hand washing, mask-wearing, and social distancing through online resources, practice at home, and job coach instruction provided via video chat, which enabled them to remain healthy and to successfully follow business-required COVID-19 protocols. Second, all employees who were out of work for a period of time received additional job coaching hours through vocational rehabilitation to return to work and adjust to new tasks, changes in protocol, and new work schedules. Most of these job coach services were delivered remotely through video chat, which meant that employees with autism also had to learn new technology skills. Finally, COVID-19 also impacted families. In the absence of in-person education and job coaching services, family members often provided direct services to their family members with autism in preparation for the return to work. Please see Table 2 for the joint display of quantitative and qualitative findings.

Discussion

Transition-age military-connected and dependent autistic youth experienced barriers to employment prior to COVID-19 which kept them from securing a job, whether it was skill level, connection to services, multiple moves due to military assignments, or lack of opportunities (Davis & Finke, 2015; Kaya et al., 2016; Schall et al., 2021). The findings reported here underscore these challenges but also suggest that COVID-19's effects on employment may vary depending on where military-connected and dependent autistic youth are in the transition process as well as ongoing developments with the virus. Specifically, our data indicate that the majority of participants whose PS+ASD programming was interrupted by COVID-19 gained CIE at 12 months post-baseline at substantially lower rates than participants from previous cohorts. This finding may reflect difficulties with finding employment during the early phases of the pandemic, as the 2019-2020 cohort entered the job market during the time when workers' hours were often cut, employees were furloughed, and hiring processes were frozen (Weber Handwerker et al., 2020). However, the data also mirror positive changes within the larger labor market that occurred as vaccinations became more readily available and state emergency orders were lifted. By June 2021, most PS+ASD participants were working regularly scheduled hours on their job sites, and all employed participants had moved out of furlough status. These findings underscore how closely interrelated the employment status of military-connected and dependent youth with autism is with the larger COVID-19 pandemic, and how changes in employment can occur relatively quickly based on the progress being made in the fight against the virus.

Additionally, the three case studies highlight specific strategies and supports used to help military-connected autistic youth find and maintain employment and deal with the unique circumstances brought about by the pandemic. First, the interagency collaboration between school staff, VR counselors, supported employment providers, and

families allowed participants to quickly access services, effectively problem-solve work-related issues when they arose, and receive individualized support. This finding highlights the importance of effective transition planning and robust transition service offerings, particularly for military-dependent or connected autistic youth, who may experience additional obstacles to service availability and delivery (Aleman-Tovar et al., 2022; Davis et al., 2016; Davis & Finke, 2015). Participants also benefited from employment and partnerships with the federal government. In contrast to many other employees with and without disabilities during the early stages of the COVID-19 pandemic, neither Grady nor Daniel was laid off. In fact, they continued to be paid while remaining at home to prevent the spread of the virus. This approach to limiting virus transmission was standard operating procedure for all employees who worked in the same units. These case studies contrast with findings from the recent study conducted by Schall et al. (2021) on the employment of people with IDD during the start of the pandemic, who found that employees with IDD were more likely to be furloughed or laid off during that period when compared with the previous year. One possible explanation for this finding is that the defense sector may be more resilient to immediate economic pressures, which often drive furloughs and layoffs. Third, the youth profiled here also benefited from research-based, employment-focused transition programming specifically designed to meet the needs of military-dependent and connected autistic youth and their families. PS+ASD had notable success pre-pandemic (Wehman et al., 2017, 2020; Whittenburg et al., 2020) and connected participants to ongoing supported employment services and employment training. As described in the case studies, COVID-19 often required the collaborative team to shift how they provided services (e.g., to digital/virtual platforms), but the use of evidence-based practices and support remained consistent. Providing teachers, transition professionals, and adult service providers with ongoing professional development that highlights the promising practices described here to support successful employment outcomes could help transition teams to improve service delivery for military dependent or connected autistic youth (Classen et al., 2019).

Limitations

This study had several limitations readers should consider. First, the findings of this study are descriptive in nature and therefore are not generalizable. Second, the data presented here only describe youth who had participated in PS+ASD on a military base, were military dependent or connected, and had a diagnosis of autism. Their experiences during the COVID-19 pandemic may not accurately reflect the experiences of the larger population of transition-age youth with disabilities during this same period. In particular, the youth described in this study all possessed strong connections to the local military installation, VR agencies, and a university-based supported employment organization as a condition of their participation in the research study. These connections help contextualize the positive employment experiences reported here, as military-dependent and connected youth with disabilities across the country often lack connections with VR agencies and adult employment service providers and experience frequent disruptions in services due to relocations and deployments (Davis & Finke, 2015; Kaya et al., 2016; Lincoln & Sweeten, 2011). Third, students who identified as male comprised most of the participants in the larger study and were presented in each of the three case studies here. The experiences of students who identify as female may be different, and future research is needed to further investigate the impact of the COVID-19 pandemic on their transition from to school to work. Finally, it may be possible that the response to COVID-19 was unique to this area of the United States. The area where all three participants reside and work is a smaller metropolitan area, largely military-based, yet with a significant number of older residents and nursing care facilities. As such, this area had a high incidence of COVID-19. These contextual factors could have affected both the individual experiences of the participants and the local, state, and military governmental responses to the pandemic.

Implications for Research

As the pandemic evolves, researchers should continue to investigate the potentially long-lasting effects of COVID-19 on the employment of autistic youth. Our study indicates that youth who were in the process of exiting school at the start of the pandemic experienced higher unemployment rates than previous cohorts. However, larger scale research involving a wider range of participants is needed to examine the employment experiences and outcomes of youth whose transition experiences were disrupted at different points in time by the pandemic. This study also points to the potential efficacy of virtually based job coach support and task instruction in helping autistic youth learn work tasks and address work-related issues. The case studies presented here highlight how video conferencing was used to teach COVID-related skills and new work tasks, check in with youth and employers, and problem-solve issues as they arose at work. While recent studies have investigated the use of video conferencing to provide cognitive behavioral therapy to address anxiety in children and youth with autism (Hepburn et al., 2016; Kalvin et al., 2021), more research is needed that examines the effectiveness of video conferencing within work experiences by job coaches to teach work-related skills and provide on-the-job support. Finally, this study describes how businesses dealt with evolving governmental guidance, cycles of outbreaks, and unpredictable

labor supply and demand. As labor market instability persists, research is needed that investigates employer staffing needs, hiring practices, and recruitment strategies to better determine how to facilitate the hiring and continued employment of autistic youth both during and after the COVID-19 crisis.

Implications for Practice

While this study only shows a small sample of the experiences of military dependent or connected autistic youth, it should be noted that many participants made progress toward their employment goals during the COVID-19 pandemic. Helping military-dependent and connected autistic youth and their families make connections to adult service organizations was key. In each of the case studies presented here, transition planning teams, consisting of the student, their family, special educators, VR agency representatives, and adult service providers, worked collaboratively to help students identify individualized career goals, provide internships that matched those career aspirations, and fund the necessary job coach services and workplace supports to learn relevant job skills and obtain and maintain CIE. While military Exceptional Family Member Program (EFMP) staff were not members of individual student transition planning teams, they provided important guidance to families and students on health insurance benefits, community resources, and internship/employment opportunities on the installation. Exploring ways to further the involvement of EFMP staff could help military-dependent or connected autistic youth and their families make a successful transition from school to work.

This study also highlights the active roles that families played in helping students acquire COVID-related protocols and skills, with guidance from job coaches. This practice suggests the untapped potential of family involvement in work skill instruction and practice for autistic youth. At-home work skill practice can potentially promote skill acquisition through additional practice opportunities across multiple settings. Tapping into family support and involvement in work-related transition activities may be especially important for families of military dependent/connected autistic youth, as frequent relocations and deployments may mean more turnover or gaps in educational services, thereby requiring families to play more active instructional and advocacy roles with their students.

Transition planning teams may also want to seek work opportunities for military dependent/connected autistic youth through federal partners based at local military installations. Historically, federal employment has been a somewhat untapped market for individuals with autism, especially those who are military dependent or connected. Federal employment provides employees with stable, long-term positions and skills that are easily transferable to other military installations. For military connected or dependent autistic youth, this employment option allows for career possibilities and flexible employment when relocation occurs.

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