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Barriers to Competitive Integrated Employment of Young Adults with Autism Spectrum Disorder

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Abstract: Individuals with autism spectrum disorder (ASD) often experience barriers to competitive integrated employment during their transition to adulthood. To better understand potential reasons for these barriers, we interviewed 10 young adults with ASD, ages 18–26, and their parents or guardians. We audio-recorded, transcribed verbatim, and analyzed the interviews using grounded theory methods. Four major themes emerged as barriers to employment: (a) pre-employment challenges, (b) logistics, (c) few on-the-job supports, and (d) a disconnect between interests and job tasks. These findings indicated young adults who desire competitive employment may benefit from autism-specific interventions and employment programming. Suggestions for research and practice related to the competitive integrated employment of individuals with ASD are discussed.

As large numbers of students diagnosed with autism spectrum disorder (ASD) approach adulthood, there is a critical need to address their transition-related employment needs. Approximately 50,000 youth with ASD graduate each year and are no longer eligible for special education services provided through the public-school system (Roux et al., 2013; Shattuck et al., 2012). Research indicates these youth typically experience a lack of positive adult outcomes in the areas recognized by the Individuals with Disabilities Education Improvement Act (IDEIA, 2004): postsecondary education, integrated employment, and independent living (Lipscomb et al., 2017; Newman et al., 2011). As a result, enhancing postsecondary outcomes of transition-aged youth with ASD has received increasing attention in recent years (Burgess & Cimera, 2014).

The 2015 National Autism Indicators Report found that 37% of youth with ASD in their early 20s were defined as "disconnected," meaning neither working outside of the home nor continuing education after high school (Roux et al., 2015). Data from the most recent National Longitudinal Transition Study (NLTS), the NLTS-2012 indicated similar findings (Lipscomb et al., 2017). Specifically, fewer than half (49%) of parents of youth with ASD expected their children to live independently by age 30 compared to 78% of youth with an IEP overall (Lipscomb et al., 2017). One way to increase community engagement and connectiveness with others outside the nuclear family is to work in the local community. Indeed, obtaining employment is an important component of the transition to adulthood for any individual regardless of disability status, and competitive integrated employment (CIE) is considered the gold standard for individuals with disabilities (National Technical Assistance Center on Transition, 2017), including those with ASD.

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Competitive Integrated Employment for Young Adults with ASD

The Workforce Innovation and Opportunity Act (WIOA, 2014) defined CIE as full or part-time work in which an individual with a disability is (a) compensated at or above minimum wage; (b) receiving the same level of benefits as employees without disabilities in

similar positions; (c) employed at a location typically found in the community and interacts with individuals without disabilities on a regular basis [(34 C.F.R. §361.5(c)(9)(i-iii) (2018)]. Young adults with ASD achieve better vocational outcomes when employed in CIE settings compared to separate or facility-based programs (e.g., sheltered workshops; Cimera et al., 2012). Importantly, employees with ASD in CIE settings earned more wages, worked more hours, and cost less to serve compared to individuals who received vocational services in separate employment settings (Cimera et al., 2012). Unfortunately, CIE remains elusive for many transition-aged youth with ASD despite the well-known benefits associated with CIE (Kaya et al., 2016; Wehman et al., 2018) and focus on integrated employment during the transition planning process as mandated by IDEIA (2004).

Although many youth with disabilities have paid employment experiences during high school, this is less likely for youth with ASD. Only 23% of youth with ASD reported paid work experiences in the past year (Lipscomb et al., 2017). This is concerning given paid work experience is one predictor of positive post-school outcomes for youth with disabilities (Mazzotti et al., 2016; Test et al., 2009). Research indicates individuals with ASD continue to struggle obtaining employment after high school graduation (Roux et al., 2013; Shattuck et al., 2012). Approximately half (53%) of young adults with ASD, ages 21 to 25, have worked for pay outside the home since exiting the public-school system (Roux et al., 2013), which represented the lowest rate compared to all disability groups included in the NLTS-2. When employment is obtained, it is usually low skilled and inconsistent with the interests and strengths of the individual (Bennett & Dukes, 2013).

Other employment challenges young adults with ASD may face include social interactions necessary for job obtainment (e.g., job interview) and retention (e.g., relationships with co-workers). For example, individuals with ASD are likely to have verbal and nonverbal communication needs that interfere with conversation necessary for a successful job interview (Morgan et al., 2014; Smith et al., 2015). Young adults with ASD have reported difficulty understanding social interactions at work and problems acclimating to work routines (Baldwin et al., 2014; Müller et al., 2003). Individuals with ASD can also display patterns of behavior that hinder work completion and difficulty with social skills can be isolating in a vocational setting (Burke et al., 2010; Wehman et al., 2009). These sorts of challenges are not unique to people with ASD; people with other disabilities (e.g., intellectual disability) experience similar challenges (Lipscomb et. al., 2017; Newman et al., 2011). However, understanding the experiences and perspectives of young adults with ASD may provide some unique insight about how this problem affects them and what socially valid solutions may be worth pursuing. For example, necessary employment-related social skills to target may include collaborating with colleagues, communicating with supervisors, asking for help, self-advocacy skills, workplace hygiene, among others.

Although the historically poor employment outcomes of transition-aged youth with ASD have been well-documented in the special education literature and longitudinal studies such as the NLTS-2 (Newman et al., 2011) and NLTS-2012 (Lipscomb et al., 2017), less research has been conducted to identify potential reasons for these outcomes. A complex relationship between internal (e.g., manifestations of the disorder) and external barriers (e.g., employer attitudes; Scott et al., 2017) may partially explain this phenomenon. However, additional research is needed and particularly with a focus on perceptions of transition-aged youth with ASD and their parents or guardians. Parents of young adults with intellectual and developmental disabilities, including ASD, reported varied and dynamic values for their adult children during the transition to adulthood (Henninger & Taylor, 2014), but additional research is needed that includes parents' perceptions on employment. Similarly, young adults with ASD have reported broadly on their perceived barriers to transitioning to their communities from secondary school (Giarelli et al., 2013), but the current study focuses specifically on barriers to CIE. Some studies also have been conducted that focus on employment in general (e.g., Hurlbutt & Chalmers, 2004; Müller et al., 2003). However, timely research is

needed that aligns with the WIOA definition of CIE.

Accordingly, the purpose of this study was to better understand the complex issue of traditionally unsatisfactory employment outcomes of young adults with ASD. A thorough understanding of this problem is critical to guide research, educational programming, and community supports for successful CIE of individuals with ASD who desire such employment experiences. Qualitative methods were chosen for this study because they allow for in-depth, systematic examinations of phenomenon in natural settings with participants' voices at the forefront of the study (Brantlinger et al., 2005; Merriam, 2009; Wang, 2008). We were guided by the following research question: What are common barriers to CIE during the transition to adulthood as reported by young adults with ASD and their parents or guardians?

Method

Positionality

When employing qualitative methods, it is important to acknowledge the researcher is an integral part of data collection and analysis, thus a researcher's subjectivities should be acknowledged (Brantlinger et al., 2005; Patton, 2002; Trainor & Graue, 2014). We entered this study as researchers working at Institutes of Higher Education with interests in ASD, postsecondary education, transition to adulthood, and CIE for individuals with disabilities. All four authors had prior experience working in either PK-12 schools or autism clinics as licensed special educators or board-certified behavior analysts. We believe in the tenants of CIE and meaningful inclusion of individuals with disabilities in their local communities and broader society. A goal of this research is to provide implications that will guide transition planning activities and potentially improve post-school outcomes of young adults with ASD.

Participants

This study was approved by a university institutional review board prior to recruitment and data collection. We recruited young adults and their families from a non-profit organization that provided a variety of autism-specific services to individuals with ASD up to age 26 (e.g., social skills classes, licensed therapists, parent workshops). The first author had an established partnership with this organization. We posted recruitment flyers at the non-profit organization and distributed to families via an electronic newsletter. Young adults and their parents contacted the first author directly to express an interest in participating in the study.

Young adults met the following inclusion criteria: (a) educational or medical diagnosis of ASD as confirmed by parent report, (b) 18 years of age or older, (c) verbal language skills to participate in a spoken interview, and (d) willingness to share about employment experiences. Given the target age of participants, individuals with diagnoses included in the fourth edition of the *Diagnostic and Statistical Manual of Mental Disorders* (APA, 2000; e.g., Asperger syndrome; pervasive developmental disorder) were eligible for participation. Parents or guardians of the young adults were also invited to participate. A total of 10 young adults (eight males; two females) and 13 parents provided signed consent. All young adults were their own legal decision maker; no parents were legal guardians with power of attorney. The average age of the young adults was 20.5 (range = 18–26). Five of the 10 young adults had co-occurring conditions (e.g., anxiety, learning disability, obsessive compulsive disorder) in addition to their ASD diagnoses. Nine young adults identified as White, and one identified as Black. Of the 13 parents who participated, 11 were biological mothers, one was a biological father, and one was a stepfather. All parents' reported race corresponded to their child's reported race. Table 1 presents young adult and parent demographic information.

Interview Procedures

Young adults and their corresponding parent(s) were interviewed one time in a face-to-face, semi-structured interview conducted by the first author. A total of 20 interviews were conducted, all of which were audio recorded and

TABLE 1

Young adult and corresponding parent demographics

Pseudonym	*Gender*	*Age*	*Disability Category*	*Race*	*Current Role/ Occupation*	*Highest Degree Earned*	*Interests*	*Parent Interviewed and Highest Degree Earned*
Brandon	M	18	ASD, ADHD	White	Plumber's assistant	High school diploma	My Little Pony, YouTube videos	Mother (associate's)
Caleb	M	22	ASD, ADHD, dyslexia	White	Unemployed	Associate's degree in information technology	Space exploration, monarch butterfly migration	Mother (doctoral)
Daniel	M	19	PDD	Black	High school senior	Current high school student	Drawing movie logos	Mother (bachelor's)
Greg	M	18	PDD-NOS	White	High school senior	Current high school student	Sonic the Hedgehog, drawing, gaming	Mother (bachelor's) Stepfather (bachelor's)
Howard	M	18	ASD, OCD	White	High school senior	Current high school student	Computer programming	Mother (associate's)
Joe	M	18	ASD	White	Community college student	High school diploma	Astrophysics, science, reading	Mother (bachelor's) Father (doctoral)
Kimberly	F	23	ASD	White	Unemployed	Bachelor's degree in biology	Baseball, biology, camping, forensics	Mother (bachelor's)
Maxwell	M	26	ASD, ADH, anxiety, dysgraphia	White	Community college student	High school diploma	Movies, theatre, improve comedy	Mother (high school)
Rene	F	23	ASD	White	Custodian	Bachelor's degree in Biology	Animals, biology, reading	Mother (bachelor's)
Stanley	M	20	ASD, anxiety	White	Unemployed	High school diploma	Video games	Mother (master's)

Note. ADHD = attention deficit hyperactivity disorder; ASD = autism spectrum disorder; OCD = obsessive compulsive disorder; PDD = pervasive developmental disorder; PDD-NOS = pervasive developmental disorder- not otherwise specified.

transcribed verbatim. Young adult and parent dyads were given the option to be interviewed together or separately based on personal preference and/or family schedule. Eight interviews (four young adults and their corresponding parents) were conducted separately. In cases in which the young adult and parent(s) were interviewed together, they were not asked questions simultaneously. Rather, the first author conducted the interview in its entirety with the young adult and then repeated the process for the parent. In cases in which two parents participated (e.g., mother and father), they answered questions together in the same interview. The majority of interviews ($n = 14$) were conducted in a private office space at the non-profit organization. Four interviews were conducted in participants' homes, and two interviews was conducted at a parent's office. Average duration of young adult interviews was 30 min (range = 19 to 43 min), and average duration of parent interviews was 38 min (range = 25 to 70 min).

The interview protocol was developed based on extant studies and literature reviews within the areas of ASD, employment, and transition to adulthood (Henninger & Taylor, 2014; Hurlbutt & Chalmers, 2004; Müller et al., 2003), as well as the first author's prior experiences as a secondary special educator for students with ASD. Once the first author developed a list of potential interview questions, other members of the research team reviewed the questions, debriefed, and came to a consensus on the protocol. In the final development stage, the research team sought feedback on the interview protocol from the director of the non-profit organization where participants were recruited. Interview questions were identical for all participants but phrased according to whether the respondent was a young adult or parent (see Table 2). The questions were organized into four broad categories: (1) strengths, preferences, and interests of the young adult; (2) high school experiences; (3) employment experiences; and (4) employment strengths and needs. The first author provided the questions in writing to all participants prior to their scheduled interview, and some young adults opted to write their responses in advance. In addition, all participants were provided a hard copy of the questions for reference during the interview if desired. The first author asked follow-up and probing questions not included in the list of prepared questions. Finally, as a form of member checking (Brantlinger et al., 2005), the first author sent interview transcriptions to all participants via e-mail to confirm the accuracy of the transcription and retract or change any statements if desired. All participants confirmed their transcriptions and no participants requested any changes.

Data Analysis

We loaded the interview transcriptions into NVivo, a qualitative data analysis software package. The grounded theory process consisted of open, axial, and selective coding (Corbin & Strauss, 1990). The first stage of data analysis was open coding in which the first author coded each transcription line-by-line. The codes were not identified a priori as the definitions of each code were refined recursively throughout the coding process. Example open codes included: *independent living*, *job interviews*, *friendships*, *job supports*, and *anxiety*. The second author independently coded 20% of the transcriptions to enhance the validity of initial open codes identified. The first and second authors discussed the identified open codes and came to a consensus for any discrepancies.

The second stage of data analysis consisted of axial coding in which the first and second authors grouped similar reoccurring codes together to form broader categories. The authors used the NVivo software to organize codes according to which codes appeared most frequently across all interviews. Examples of axial codes included: *job applications and resumes*, *transportation*, *independent living and self-care*, *workplace accommodations*, and *desire for meaningful employment*. Open codes that did not appear multiple times throughout the data were dropped from further analyses.

After completing interviews with the 10 young adults and their parents, no new codes or themes were identified. Therefore, saturation was achieved, and the research team did not recruit additional participants. All authors participated in the final phase, selective

TABLE 2

Young adult and parent interview questions

Strengths, Preferences, and Interests
1. Tell me about yourself (or your son/daughter).
2. Tell me about your hobbies or interests (or your son/daughter).
3. Tell me two or three things you are good at (or your son/daughter).
4. Tell me something unique or special about you (or your son/daughter).
5. What future job or career would you like to have? (or your son/daughter).
6. Where do you see yourself in one year, five years, and ten years? (or your son/daughter)
High School Background Questions
7. Tell me about some of your experiences in high school (or your son/daughter).
8. Tell me about your classes that you liked or particularly remember (or your son/daughter).
9. Tell me about your teachers that you liked or particularly remember (or your son/daughter).
10. Tell me about your friends that you liked or particularly remember (or your son/daughter).
11. How would you describe your overall high school experience? (or your son/daughter).
12. How would you describe your feelings when you graduated? (or your son/daughter).
13. What positive changes have occurred in your life since high school graduation? (or your son/daughter).
14. What negative changes have occurred in your life since high school graduation? (or your son/daughter).
Employment Experience Questions
15. Tell me about any work experiences that you had in high school until now- can be volunteer, paid, or through a work program at your school (or your son/daughter).
16. Tell me about any experiences you've had applying for a job (or your son/daughter).
17. Tell me about any experiences you've had interviewing for a job (or your son/daughter).
18. Tell me about any experiences you've had with a job coach or someone supporting you at work (or your son/daughter).
19. What type of job you would like to have in the future and why? (or your son/daughter).
Employment Strengths and Needs
20. Describe your strengths and what you think you can contribute to a specific job (or your son/daughter).
21. What supports do you think you would need at a job to be successful? (or your son/daughter).
22. What barriers to employment have you experienced? (or your son/daughter).
23. Do you currently have a driver's license? If not, what mode of transportation do you use to go to work, visit a friend's house, or run a personal errand? (or your son/daughter).
24. Describe a problem you've had at work and how you solved it (or your son/daughter).

coding and theme development. The identified axial codes were grouped together to form a series of selective codes: *pre-employment challenges, logistics, on-the-job supports, and disconnect between interests and job tasks*. For each selective code, the authors identified and discussed participant quotes that illustrated the overall theme corresponding to each selective code. The themes were further refined as the authors discussed the axial codes associated with each theme and how these axial codes related to one another and the broader selective codes. At this stage, the authors applied the themes to each young adult and parent/guardian participant cases to ensure the themes stood up across cases. Part of this process also included documenting any disconfirming evidence within an individual case. Any discrepancies in interpretations among the authors were resolved via a consensus process.

Promoting Trustworthiness and Credibility

We took multiple steps to ensure the trustworthiness and credibility of the identified themes. First, we triangulated findings (Brantlinger et al., 2005) within and across young adult and parent dyads. As mentioned earlier, we also engaged in participant member checking by providing participants with their interview transcription and opportunities to

correct, clarify, and/or confirm the content. The Nvivo software, with its storage and organization features, allows for data auditing and team coding and verification. Finally, throughout the coding process, the four authors discussed any potential disconfirming evidence. Specifically, we analyzed data for discrepancies between each young adult's interview and their parent(s). The first two authors independently coded during the open and axial stages, compared codes to discuss emerging themes, resolved discrepancies, and then came to a consensus in an iterative process. The Nvivo software was also used to generate counts of open codes to guide development of axial and selective codes. Lastly, the third and fourth authors served as auditors to code a random selection of the transcriptions to verify codes and identification of all major and minor themes. Different interpretations of the codes and themes were resolved using the consensus process with all four authors.

Findings

In the following sections we provide descriptions of the major themes that resulted from the interviews and corroborating data in the form of participant quotes. For each major theme, we include the two or more accompanying subcomponent themes.

Pre-Employment Challenges

The majority of young adults and their parents reported on-going challenges attempting to obtain CIE that often led to frustration and disappointment. In particular, three young adults (Caleb, Kimberly, and Stanley) were unemployed at the time of the interview and actively seeking employment. When asked the most challenging part of looking for a job, Kimberly (age 23), responded, "Just getting hired in the first place. Trying to find a job I can do…" Caleb (age 22) said, "It's been busy trying to find a job. In conjunction with that, trying to find apartments that are affordable but also nearby." One young adult, Rene (age 23), was employed as a custodian at a retail store at the time of the interview but desired a different job related to her bachelor's degree in biology. Rene described her overall experiences as, "It's just very frustrating that they don't even reply when they don't hire you. It's like I don't even know what I did wrong…why aren't you hiring me?" We identified two subcomponent themes related to challenges obtaining employment: job applications and resumes and the job interview process.

Job applications and resumes. Many young adults described the importance of job applications and had experience completing a large number of applications. For example, Howard (age 18), a high school senior, said, "Yeah, filling out a job application is really important. It's really a must if you want to have a job. If you can't do it then they're really not going to hire you. And that's just the way it is." Similarly, Rene described her experiences applying to jobs stating, "…in a few months following my college graduation, I applied for probably at least 20 jobs, and I only ever heard back from two." When asked what types of job applications she submitted, Kimberly described completing applications online through the website named "Indeed…I'll go to the website and apply through there." Other young adults also had experiences with online job application systems. For example, Maxwell said, "Those were a pain in the butt for me! It's just that sometimes they don't go through very well online, that's what I think." Brandon's mom noted he also had difficulty with online applications, and Brandon described completing online job applications as a job itself.

Several parents described recently helping their children with job applications and resumes. For example, Brandon worked as a plumber's assistant and his mom said, "I put his resume in, I helped with his resume, stuck it out there. He wanted to go off and do his own thing, and I said, no, you have to sit here the whole time we're doing it." Other parents described writing resumes as part of their child's transition planning during high school. Joe was enrolled at a local community college, and his mom said, "So [Joe] did that in high school. He had some experience doing that, the interviews and phone calls and filling out and making a resume." Joe's dad added, "He updates his resume. There's nothing really there."

Job interview process. Nearly all young adults had experiences with job interviews although the majority of interviews did not result in advancement to the next phase of the job search (e.g., additional interview, job offer). For instance, Caleb reported he participated in three or four interviews related to his associate's degree in information technology but stated, "...strange thing, I have not had an interview at the same company twice thus far. All of them were friendly, but I'm thinking my nervousness got the better of me every time." Caleb's mom provided confirmation and added, "And whenever he's had a phone screen interview to get an in-person, he doesn't get that either." Kimberly was actively seeking a job related to animal research and described a mismatch between her perceptions of the interview and those of the employer. After having completed two interviews Kimberly said, "I think both of them went okay. But the first one they were like 'no, we're gonna move on.' But I thought it went okay." She went on to report she was offered neither position but did not know why. Likewise, Maxwell was a community college student and sought a job located near his home. When recounting a recent interview with a pet sitting service for which he did not get a job offer he said, "I don't know, maybe it is because my disorder. People might think that... because Asperger's is on the autism spectrum...they think that... I don't know how to quote it without looking it up but... I can't be *capable* of it [doing the job]."

Brandon (age 18) was one participant who had a more positive interview experiences and was competitively employed. Brandon reported he convinced the interviewer he could do a variety of skills at the plumbing company. Brandon said, "Give me a chance, if you don't like me here, put me here. If you don't like me here, put me here. And we'll find a place that works." Brandon also described the importance of having confidence during job interviews and said, "So apparently I'm good at selling myself."

Related to the job interview process was the issue of disability disclosure. Young adults and parents varied in their level of knowledge regarding workplace accommodations during the job obtainment process and benefits and challenges associated with disclosing. For example, when asked if Kimberly had disclosed her disability during the interview process, her mom said, "The consensus is with Kimberly as high-functioning as she is, it's a no, [do not disclose]."

Maxwell appeared to express some confusion regarding who and when to disclose. When asked if he had disclosed his disability at his prior place of employment, Maxwell responded, "Yes, I did...well, no I didn't. I disclosed it to the person who was interviewing me so they should have gotten that."

Finally, Caleb suggested it would be helpful if the person interviewing him knew of his communication challenges:

> Well, in my situation, one barrier I've noticed is that the HR department does not communicate these problems to the people who are actually going to be doing the interviewing. If they were to do that, that would probably help to a certain degree. Because if the person who is actually doing the interview is expecting that, expecting the interviewee to have communication difficulties, that might help them make a more informed decision after the interview.

Logistics

Barriers related to logistics were reported by many young adults and parents and, in particular, logistics related to a lack of independent living and transportation. Competitive integrated employment often requires traveling to community-based locations. All of the young adults interviewed lived with their parents. In addition, eight of the 10 young adults reported they relied on their parents as their primary mode of transportation.

Lack of independent living. When asked what his largest barriers were to successful employment, Joe (age 18) replied,

> Well, right now I think my biggest barriers are associated with not living on my own. Which means I'm (A) I'm not making my own decision on things or if I am, they're not 100% within my control. That could be improved. (B) Not providing my own

transportation, that's more important than what I would have thought. . .

Joe's mom confirmed that he lives at home by saying,

> Right, well, right now he's currently going to community college. He lives at home. He would not be able to live in a dorm, he's not independent enough. He doesn't drive. . . I wouldn't say he has friends that he does anything with after school. He mostly just goes to school, does his homework, plays video games, the typical, you know Asperger's. . .

Several parents described support they provided to their children in the area of self-care, such as getting ready for work or going to a job interview. For example, Joe's mom also said, "I mean if he gets a job, he's going to have to have someone cracking the whip because he'll spend two hours in the shower and eating breakfast and not be ready on time." Brandon's mom said, "Hygiene is the hardest part. . .I mean, he's going on job interviews, and I can smell him when he walks away. . .now he's using deodorant."

Transportation. Brandon and Kimberly were the only two young adults who drove on a regular basis with a valid driver's license. Consequently, parents often provided transportation to their adult children. When asked if she drove, Rene said, "No, my parents drive me to work and stuff." Some young adults were working towards obtaining their driver's license while others had their license but did not drive on a regular basis. For example, Howard had obtained his permit but not yet have his license. Moreover, several parents reported concerns related to driving. Rene's mom described her uneasiness with Rene driving:

> The driver's license is one of those things where her dad and I don't necessarily agree a whole lot. I'm concerned because Rene has a tendency to be. . .she's not confrontational, she's not assertive. She's very unassertive, that's what I wanted to say. And I see the possibility of things like Rene at a stop sign and letting everyone else go first. Even when it's her turn to go, letting the other people go, until the person behind her gets impatient and starts honking at her.

Other parents described distracted driving as a concern and suggested employment located within walking distance of the family home. Joe's dad explained, "And he can't drive yet, he's just too distracted to think about that." Greg's mom suggested walking as a mode of transportation by saying,

> . . .there's plenty of jobs within a mile, you know, of our house. That it's easy enough for us to figure out how to get him [Greg] there. With the medications that he's on and with his attention issues, no one's really comfortable with deciding Greg is going to get behind the wheel of a vehicle.

Parents also discussed alternatives to driving their children, such as public transportation and ridesharing applications (e.g., Lyft, Uber). For example, Caleb's mom said,

> Right now we take him. At some point. . .-when the [name of transition program] goes places they do take the bus. So he has had that experience of going with the group on the bus. We don't live close enough to. . .you know, we're kind of far. So he wouldn't be able to take the bus. . .I'd have to take him somewhere to still get the bus. Eventually, you know, we'd like to teach him some independent transportation, you know like Uber. . .

On-the-Job Supports

We asked young adults what supports were necessary for successful employment, plus desirable characteristics of supervisors or co-workers. Stanley described his desired on-the-job supports in the following way: "Yeah, so what I would need is probably something in writing rather than verbal communication. I would also probably need a clear understanding of what's happening. . ." Howard expressed a desire for, "People that don't rush me. Or at least don't try and rush me. People that understand what symptoms I would have." Many young adults had innovative ideas regarding potential workplace accommodations and also described challenges regarding social demands at work.

Workplace accommodations. Howard made a connection between IEP accommodations and workplace accommodations eligible to individuals with disabilities by stating,

> What I was thinking of is an IEP. . .like I don't know if I can get an IEP at a job setting. I don't know if I could get that. But certainly I could get something like rather than it being in words, I could have it in writing. I would have sort of those accommodations. For example, if I was disabled, if I couldn't walk, I could have a step or a wheelchair that the company would provide for me. Stuff like that.

The need for additional time to complete tasks was mentioned by several parents. Kimberly's mom said,

> She [Kimberly] notes that she's detail-oriented and very thorough. But she also notes it takes her more time to get through things because of that. It's appropriate to give that clarification but so many businesses are focused on speed than care so when they look at that, they say, 'oh she's really thorough so she's not going to be as fast as we want.

Some young adults described a designated place to "cool off" as a potential helpful workplace accommodation. For example, Howard said,

> Socially. . .getting work done at a certain time frame. Having all information laid out clearly and understandably so a person like me would understand. Would also probably need. . .if there becomes a heated argument, I would need a place where I could rest and cool off. And, of course, I would know when I would need to do that. Just so I can tell my boss, 'hey, I need to cool off for a sec,' and he'd be like 'sure, go into an office, a vacant room or the closet and cool off.'

Brandon reported that his co-workers at the plumbing company provided natural supports without him explicitly requesting them. Brandon said, "Well, they [co-workers] kind of figured it out on their own. Like yesterday, he [co-worker] said, 'Do you want me to write a list down?' I said, 'Sure. . .yeah.'" Brandon went on to say the written list was helpful because, "I know exactly what this does and what that does."

Navigating social demands at work. Several young adults described challenges navigating social demands at work. Stanley, for example, previously worked at a café and described the following situation with a customer,

> I tried getting the [customer's] plate, I thought he was done. I could have sworn I heardhim say he was done. But he just snapped and said 'I'll let you know when my plate is ready.' So I just walked off. . ."

Although community-based employment can provide opportunities to interact with same-age peers, the young adults did not generally report friendships at work. When asked if she had developed friendships with co-workers, Rene replied, "Not beyond the basic pleasantries." However, some parents described supportive supervisors who recognized the social needs of their children. Stanley's mom described his bosses at the café as follows:

> Sometimes I think with his [Stanley's] Asperger's, he may misinterpret what they're asking and it could get frustrating for him. Or he might think that they're mad at him if they're using a tone of voice. And we've told, you know, the bosses that before. And they're really good at working with him.

Disconnect between Interests and Job Tasks

Young adults spoke about their interests in space exploration (Caleb), gaming (Greg), astrophysics (Joe), forensics (Kimberly) and many others (see Table 1). Howard said, "Well, one thing I'm really good at is coding. I've been coding for the last couple of years. I've taken classes, and I've done camps. . ." Greg's mom said, "So [his] hobbies, strengths, and interests are anything related to computers and video games. Especially Sonic the Hedgehog." Unfortunately, no young adult was employed in a job matched to their interests or degree (e.g., biology, information technology) at the time of the interview. Parents, in particular, described a desire for meaningful employment aligned to the interests of their children.

Desire for job that matches interests. Daniel (age 19) loved drawing and took several art classes in high school. Daniel's mom said, "...he has some talents and if I could just tune his talents to where he could utilize them in a job...you know, he loves to draw. That would be just perfect." Kimberly said, "I'm really interested in going back to [university name] and getting my master's in forensics and doing like work in fingerprinting." Caleb (age 22) had a strong interest in monarch butterfly migration and participated in some volunteer experiences but not CIE related to this interest. Caleb's mom described his volunteer experience as follows:

Caleb volunteered in the summer between graduating high school and going to college at the Monarch Watch. That's another thing he's been interested in, the Monarch Watch-...the whole process of the migration and tagging...we took him to do the tagging at the wetlands once, and that really got him onto that. It fascinates him...

Maxwell (age 26) had an interest in theatre and improv comedy. His mom described his career aspirations as follows:

If there were no limitations, he would love to be a film director. Right now I don't know what we're gonna do...or what he's gonna do...he's going to school at [community college name] and taking classes towards film and directing. I'd like for him to be doing exactly what he wants. To be happy and successful at a career that he chooses.

Finally, Greg's mom compared finding the right job match to finding a spouse:

We will help him do whatever is needed. I believe he can get there. I believe we need to find that right fit. Just like trying to find a spouse. Just like trying to find even a good job. There's a lot of other ones out there but to find the right fit. And sometimes it takes awhile.

Desire for meaningful employment. Some parents described the relation between unemployment and feelings of disappointment experienced by their children. Parents also reported a desire for their children to contribute meaningfully to society and for others to value those contributions. Kimberly's mom said, "We're trying to get programs that will help, will help these young adults be in society and be contributing. I mean, they have a lot to contribute!" Similarly, Greg's mom said,

I want Greg to start seeing himself better than he usually does. That may come partially from an employer who will value him as a good employee. And to have a job that he wants to get up and go to and make him feel good about himself and what he does. And that he'll be a contributing member of society. Cause we all know he can, Greg just has to believe he can.

Meaningful, authentic employment was valued over contrived experiences. When asked if his son would be interested in a simulated job to gain work experience, Joe's father replied,

I think he would say, this is not important to me. He would want to make a real contribution. I don't think he thinks about money very much. I think it's more is he doing something that changes or improves the world or workplace or something that is meaningful.

Discussion

Findings from this study contribute to the employment literature for young adults with ASD. The experiences and perspectives of the young adults and their parents highlight barriers to CIE that can guide employment programming and interventions. The fact the young adults reported overall challenges obtaining CIE is perhaps not surprising given individuals with ASD commonly experience long periods of unemployment or underemployment (Newman et al., 2011; Roux et al., 2013; Shattuck et al., 2012). Young adults and their parents described job applications, resumes, and interviews as pre-employment challenges. In particular, young adults reported online job applications were challenging and that job interviews made them feel nervous in ways that negatively impacted their responses to interviewer questions. This was consistent with previous research in which adults with ASD reported several factors that affected their employability (Hurlbutt & Chalmers, 2004; Müller et al., 2003). Non-traditional methods to obtain employment, such

video resumes rather than paper resumes, may reduce nervousness and support better interview outcomes for job-seekers with ASD. Employers could also offer innovative hiring methods to recruit employees with ASD and showcase their skills, such as job shadowing experiences rather than verbal interviews.

Even once employed, young adults reported challenges to maintaining employment due to a lack of independent living skills and limited transportation. Although research indicates many young adults with ASD do not live independently (Newman et al., 2010), the relationship between independent living and employment warrants additional empirical inquiry. Specifically, many young adults with ASD continue to live at home after high school graduation and are unemployed. However, it is less clear if unemployment may contribute to a lack of independent living or vice versa. Similarly, many young adults who remain in the family home rely on their parents for transportation. Some parents in the current study and a study conducted by Feeley and colleagues (2015) expressed no concern related to frequently driving their adult child while other parents found it burdensome.

This study's findings corroborate previous research indicating young adults with ASD who received on-the-job supports were more likely to be employed than those who did not receive such supports (Kaya et al., 2016). Young adults and their parents described several autism-specific workplace accommodations that may be helpful, such as a "cool off" room, writing tasks down rather than relying only on verbal communication, and a specific support person at work. For example, Solomon suggested an "advisor" or "trainer" who he could ask questions as needed, and Kimberly suggested a co-worker serve this role. Young adults also described the desire for employers who were accommodating and understanding. This relates to the extent to which employers' knowledge about an individual's disability is beneficial or harmful. Disability disclosure is a complex issue. Parents acknowledged disclosing their child's disability may lead to better understanding from the employer but were uncertain the best method of disclosure. Benefits of disclosing include access to workplace accommodations, increased acceptance and awareness of ASD, and possibly a more inclusive workplace environment (Lindsay et al., 2019). However, disclosure can also potentially contribute to increased workplace stigma and discrimination (Johnson & Joshi, 2016). Accordingly, it is perhaps not surprising young adults and parents reported conflicting viewpoints regarding disability disclosure.

Young adults reported challenges navigating social demands at work and, in particular, interactions with customers. Accordingly, interventions and supports to enhance workplace social interactions appear worthwhile and appropriate. Individuals in the workplace environment (e.g., customers, co-workers, supervisors) will also likely benefit from information and resources to better support employees with ASD. Lastly, nearly all young adults and their parents reported a disconnect between personal interests and required job tasks. Only two of the 10 young adults were competitively employed at the time of the interview (Rene as a custodian and Brandon as a plumber's assistant). However, only Brandon expressed being satisfied with his job and indicated it matched his strengths and interests, whereas Rene reported dissatisfaction that her custodial job was unrelated to her biology degree. Other young adults were actively seeking jobs related to their interests with little success. Young adults and their parents also reported a desire for meaningful employment. This finding was similar to other research (e.g., Müller et al., 2003; Sosnowy et al., 2018) in which young adults reported a desire to contribute to their local communities and broader society through employment.

Limitations

Although this study describes some important barriers to CIE for young adults with ASD, there are several limitations to consider. First, the sample of young adults and their parents was relatively small, and all participants were located in the same geographical area. All young adult-parent dyads were White with the exception of one dyad who was Black; no other races or ethnicities were represented. In addition, only two of the participants were female. Parents were highly educated with 12 of the 13 parents having earned at minimum an associate's degree and several parents having earned a master's or doctoral degree. Future researchers may recruit more broadly to diverse organizations who serve young

adults with ASD rather than relying on one partnering organization for recruitment purposes.

An additional limitation relates to the fact that the young adult ASD diagnoses were based on parent report and not confirmed by medical or educational reports. However, parents had previously provided documentation to the non-profit organization to participate in its services and activities. All young adults interviewed were considered to have mild forms of ASD and used speech as their primary method of communication. Future researchers may consider recruiting individuals who are more significantly impacted by ASD to better understand a wider range of CIE experiences. Finally, interviews were used as the sole data collection method in this study and only two stakeholder types, young adults and their parents, were interviewed. Future researchers may consider incorporating the perspectives of other relevant stakeholders (e.g., adult agency providers, job coaches, secondary special educators) as a means to further corroborate findings on this topic.

Implications for Practice and Future Research

Additional research is needed to overcome the barriers identified in the interviews. First, job matching appears to be a viable area of empirical inquiry given few young adults worked in job matched to their interests. Researchers should evaluate ways for employers to capitalize upon the unique skills and interests of individuals with ASD. It would also be informative for future researchers to include the perspectives of employers to better understand what supports and accommodations are most feasible in CIE settings. Second, future researchers should examine if quality of life of young adults with ASD is enhanced when they are employed in jobs or careers aligned to their interests. Researchers and practitioners should also consider innovative ways to teach job interviewing skills using technology, such as virtual job interviewing practice. Some research exists in this area (e.g., Smith et al., 2015), and we encourage continued investigation in this important topic.

A relevant implication for practice is that parents of adult children with ASD must be better supported during the transition process. For example, parents have described the transition to adulthood as a "shock" given the abrupt end to daily school and community engagement associated with attending high school (Anderson et al., 2018, p. S302). Future researchers and/or practitioners may consider establishing support groups or other programs focused on meeting the needs of these parents and families. Such support groups could also be a valuable outlet to build social capital and networks, which can potentially lead to employment opportunities (Potts, 2005).

This study also has implications for educational professionals who serve on IEP teams of transition-aged youth with ASD. Professionals should consider incorporating areas of need into transition activities of secondary students with ASD. For example, students will likely benefit from explicit instruction and practice to complete job applications and resumes. Mock job interviews may also be advantageous and can include employers from the local community as interviewers. Mock interviews can be tailored to specific jobs and provide multiple opportunities for students with ASD to practice their interview skills in a low-stakes manner. Professionals who work with students with ASD may consider even greater focus on independent living skills given many participants reported this as an area of need. Based on findings of this study, potential independent living skills to target include personal hygiene appropriate for work, living with same-age peers, transportation skills to navigate the community, instruction to pass driver's license tests, among others. Professionals may also consider explicit employment-related social skill instruction (e.g., interacting with co-workers) given many young adults reported social challenges at work.

Finally, stakeholders in CIE settings may benefit from information regarding how best to support and employ individuals with ASD. For example, employers may benefit from general information, such as the nature and characteristics of the disorder. Co-workers may potentially serve as peer mentors or natural workplace supports for their fellow employees with ASD. Competitively employed individuals with ASD certainly contribute to

their communities in a meaningful way. A better understanding of barriers can contribute to programming, resources, and services focused on enhancing the CIE outcomes of individuals with ASD. Importantly, a better understanding of the perceptions and experiences of young adults with ASD and their parents bring their voices to the front of the discussion.

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