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Effective Interventions for Transition-Age Students with Autism Spectrum Disorders

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Abstract

This paper examined best practices for interventions supporting transition education for students with autism spectrum disorder (ASD). Recent research suggested that post-secondary outcomes, such as employment rates or post-secondary education and training program participation rates, for students with disabilities are significantly below those of the general population. For students with disabilities, transition services are integrated into each student's individualized education program (IEP). However, although transition services address employment, post-secondary education and training, and independent living skills, young adults with disabilities are not experiencing long-term success in their post-secondary endeavors. This paper strives to identify best practices for interventions supporting transition education for students and young adults with ASD to achieve more desirable post-school outcomes.

Keywords: autism spectrum disorders (ASD), transition interventions, employment, post-secondary education and training, independent living skills

Chapter One: Introduction

A transition is a change, moving from one step to the next. There are constant transitions that happen in all areas of life. Families move to a new house, students advance in school, pets are adopted, babies are born, transitions happen all the time. When considering students in their K-12 education, a few significant transitions include moving from elementary to middle school or middle to high school. One of the most important transitions is from high school to adulthood. This shift brings monumental changes for all students, changes in responsibilities, school programming, employment opportunities, post-secondary education options, housing considerations, and more. Many students highly anticipate and welcome this change, full of new opportunities and choices for the next step of their lives. While massive changes such as these can be challenging for anyone, they can be especially difficult for students with autism spectrum disorders (ASD). This chapter will introduce foundational knowledge, including defining terms, the research scope, the topic's importance, and a conclusion.

Definition of Terms

Accommodations are “adaptations or changes in educational environments or practices that help students overcome barriers presented by their disability.” (Peabody College, n.d.).

Autism spectrum disorder (ASD) is “a developmental disorder that can affect how people interact with others, communicate, learn, and behave.” (National Institute of Mental Health, 2023).

An individualized education program (IEP) is a legal document outlining the individualized educational plan for a student with a disability to address needs identified in the special education evaluation summary report (U.S. Department of Education, n.d).

Individuals with Disabilities Education Act (IDEA) is a law that mandates free, appropriate public education to all students, including special education and related services to students with a disability (IDEA, n.d.).

Transition programming is school programming that focuses on supporting students with instruction and planning to support their achievement of desired goals for post-secondary life. This instruction and planning must address three main areas: employment, post-secondary education or training, and independent living (Minnesota Department of Education, 2023).

Scope of Research

While many students elect to receive their diploma at their high school graduation, students who qualify for special education services and are serviced through an IEP are entitled, by law, to a free, appropriate public education (FAPE) until they turn 21 years old (Special Instruction For Children With A Disability, 2023). The years these students spend between high school and exiting the public school system occur in a transition program. Employment encompasses the entirety of the job process, including but not limited to job searching, applying, interviewing, and maintaining employment. Post-secondary education and training address the needs of students who desire to continue their education through a post-secondary program such as community college or vocational training. Finally, independent living skills include the three main areas of community participation, recreation and leisure, and home living skills. Research for this paper was compiled primarily from research conducted within the previous twelve years and included peer-reviewed articles, journals, and original research.

Importance of Topic

A well-known quote from Benjamin Franklin states, "If you fail to plan, you are planning to fail," and the same goes for transition-age students with ASD. If proper transition planning and instruction are absent throughout their education, students are ill-prepared to take the next step into their post-secondary life. While families of students with ASD play a crucial role in transition planning, other components contribute to successful post-school outcomes. Besides families, students spend a significant amount of time with educators. This puts educators uniquely positioned to provide opportunities that will impact each student. Educators must know their role in shaping students along their educational journey and how effective, evidence-based interventions could positively impact their futures. Compared to their peers of the same age, young adults with ASD show a significantly higher risk of poor post-secondary outcomes, including lower employment rates and lower participation in post-secondary education (Shattuck et al., 2012). This finding prompts the inquiry into why these young adults are not finding long-term success in post-secondary life, even with mandated transition planning and services.

Upon completing a post-secondary education program, young adults would be qualified for more employment opportunities in their study area. However, adults with ASD who participated in post-secondary education before seeking employment are frequently limited to entry-level jobs such as custodial, retail, or administrative work that often does not relate to their field of study or expertise (Taylor et al., 2015).

Additionally, young adults who obtain employment upon graduation often struggle to maintain stable employment long-term (Shattuck et al., 2012). These outcomes are only exacerbated for students with lower socioeconomic status or those with more maladaptive behaviors (Shattuck et al., 2012). These shocking statistics and less-than-ideal outcomes

emphasize the importance of intentional transition planning, instruction, and interventions to promote more desirable outcomes for students and young adults with ASD.

Conclusion

These inquiries highlight the critical nature of transition planning for transition-aged students and prompt the question, how can educators most effectively teach and support transition education that leads to desired outcomes for students with autism spectrum disorders? This research question directly relates to the program's essential question of the best practices for providing inclusive instruction for all learners. This paper examines evidence-based interventions that promote growth and learning in the three transition areas for transition-age students with ASD. By supporting students with the interventions and strategies identified in this paper, educators can implement the best practices and effectively provide inclusive instruction for all learners.

In order to answer these questions, foundational knowledge is necessary about the prevalence of ASD in the United States and the importance of effective transition education. The next chapter will explore research on interventions targeting employment, post-secondary education, and independent living skills that educators can implement to improve students' likelihood of success.

Chapter Two

Introduction

The Centers for Disease Control (CDC) estimated that one in 36 children is identified with ASD (CDC, April 4, 2023). While many of these children are identified and serviced through special education through an IEP, researchers have found that transition education for transition-aged students needs to be improved. For example, in a study conducted with 189 families of students with disabilities, only 54% of the families reported that their student received transition services (Mello et al., 2021). While transition instruction is federally mandated and all students with disabilities are entitled to transition services, the discrepancy between what students are entitled to receive and what families report they receive is not insignificant. These statistics again prompt the question, how can educators effectively teach and support secondary transition education that leads to more desirable outcomes for students with autism spectrum disorder?

Chapter Two explored literature regarding specific interventions targeting the three transition areas of employment, post-secondary education and training, and independent living. This chapter examined video modeling interventions to target employment and social skills and virtual reality job interview training as resources for supporting more desirable employment outcomes for young adults with ASD. Following employment, the educational experiences, preferred supports, peer mentoring, and note-taking intervention provided additional context on how educators can effectively support students with ASD pursuing post-secondary education options. Finally, chapter two concludes with independent living skills, examining the evidence for strategies to increase independence in home living skill areas, utilizing work systems, video conferencing, self-monitoring, digital technology, and community interventions. These resources

provided invaluable contributions to existing research on best practices for intervening and supporting transition education for young adults with ASD to improve post-school outcomes.

Employment

While the unemployment rate dropped for both people with and without disabilities from 2021 to 2022, the unemployment rate of people with disabilities was twice as high when compared to people without disabilities (U.S. Bureau of Labor [USBL], 2022). The United States Department of Labor found that in 2022, only 21.3% of people with a disability were employed (USBL, 2022). In addition, compared to people without a disability, the current unemployment rate for people with a disability is twice as high (USBL, 2022).

Shattuck et al. found that more than 50% of youth with ASD had no employment participation within two years of high school (Shattuck et al., 2012). When compared to other disability categories, young adults with ASD had the lowest rates of employment (Roux et al., 2015). In the United States in 2017, it was estimated that approximately 2.21% of adults between 18-84 years old were living with ASD (Dietz et al., 2020). As of March 2023, the current job openings in the United States were estimated to be around 9.6 million (U.S. Bureau of Labor Statistics, 2023). With a staggering number of adults with disabilities unemployed and the estimated number of job openings in the United States, a significant gap prompts inquiry into what can be done to support the employment of this untapped demographic.

These statistics highlight the importance of effective transition interventions for young adults, especially those with ASD, providing resources, strategies, and interventions that support increased employment outcomes for this population. This section examined employment-specific interventions to target and improve employment-related skills, including video modeling and virtual reality job interview training.

Video Modeling Targeting Employment Skills

Video modeling (VM) is an evidence-based intervention where the desired task is modeled through a video recording. That recording is then shown to the person, in the case of this paper, a transition-age student with ASD; in turn, the targeted skill improves (Bross et al., 2020, p. 210). There is growing research to support the use of VM as an intervention to support young adults with ASD, yet, there are gaps within the current research that still needs to be addressed.

In a single-case study design, research by Bross et al. suggests that VM can effectively improve employment skill levels for young adults with ASD. This study included five adults, between the ages of 18 and 26, four male and one female, with ASD. Each participant worked in a community-based customer service position, including frequent customer service interactions (Bross et al., 2020, p. 211). Two of the five participants worked at the same community-based employment nursing home site through transition programming work-based learning (WBL) experiences. The other three participants had separate community-based employment sites, including a movie theater, meal delivery service, and an amusement park. This study aimed to determine the effects of video modeling for young adults with ASD in community-based employment settings (Bross et al., 2020, p. 210).

Researchers implemented a VM intervention to target verbal customer service skills, including greeting, service, and closing phrases for customer interactions specific to each employment site (Bross et al., 2020, p. 214). Researchers took baseline data for each participant before the intervention to measure the percentage of opportunities where customer service phrases were used when interacting with customers. The VM intervention occurred during a regularly scheduled work shift, and researchers allowed participants to view the video in a quiet

environment. The VM intervention consisted of three videos specific to each individual's employment sites. The first video targeted a greeting phrase, the second video targeted greeting and service phrases, and the final video targeted greeting, service, and closing phrases (Bross et al., 2020, p. 214). All five participants demonstrated improvements in the targeted skill following the VM intervention. Researchers conducted follow-up maintenance probes two and four weeks post-VM intervention to determine if additional VM intervention sessions were needed. However, all five participants maintained the customer service skills targeted through the VM intervention. Researchers identified several limitations of this study, including using a check for understanding following participants watching the VM intervention video.

Additionally, data collection occurred through researcher observation, which may have impacted the work performance of the participants as they were aware of the observers. Finally, this VM intervention study targeted employment-specific customer service interactions. However, despite the limitations noted, the findings suggest that VM is an effective intervention for increasing employment-specific skills (Bross et al., 2020, p. 221).

In addition to the research by Bross et al., other research supports that VM can be effectively delivered through other modes, such as an iPod. For example, a study by Kellems and Morningstar aimed to evaluate and analyze the effectiveness and social acceptability of VM interventions delivered via iPods. This single-subject multiple-probe design study included four transition-age adults with ASD between 16 and 22. All four participants were diagnosed with ASD, demonstrated average to below-average cognitive functioning, and had current employment in a vocational setting (Kellems & Morningstar, 2012, p. 156). The vocational settings of these participants included maintenance at a bowling alley, a community center, a community museum, and a vending machine business (Kellems & Morningstar, 2012, p. 157).

Like Bross et al., researchers specifically targeted skills relating to the participant's employment sites with input from each employer.

For this study, Kellems and Morningstar utilized five procedures, including pretraining, collecting baseline data, video modeling intervention, maintenance, and procedural reliability (Kellems & Morningstar, 2012, p. 159). Pretraining included teaching all participants how to utilize and access the videos on the iPod. Kellems and Morningstar conducted a baseline to understand each participant's current performance of each identified task. Next, researchers implemented the video modeling intervention, creating three videos for each participant targeting a different vocational skill specific to their current employment. Researchers uploaded the created videos targeting three job-specific tasks on the iPods and then gave them the iPods to the participants to use during their shifts. Participants were able to view a VM video for one task at a time; once the participant demonstrated 80% of the steps for the task correctly for three consecutive trials, they were able to proceed to a new task (Kellems & Morningstar, 2012, p. 158). Finally, maintenance was conducted after a participant had mastered a task and began the VM intervention on another task. Researchers discussed many limitations of this research, including but not limited to the lack of female representation, the feasibility of the cost of the technology required for this intervention, the use of voiceover instructions for participants who struggle with reading, and the lack of data on the number of prompts needed for a participant to utilize the iPod (Kellems & Morningstar, 2012, p. 165).

However, despite the limitations**,** researchers found that upon completing the VM intervention, each of the four participants demonstrated an increase in correctly completing each job task and maintaining the skill over time (Kellems & Morningstar, 2012, p. 165). Therefore,

researchers determined that utilizing the iPod was an appropriate and socially acceptable means of implementing VM intervention to improve targeted employment skills.

Video Modeling Targeting Social Skills

Unlike previous research from Bossa et al. and Kellem and Morningstar that found the effectiveness of VM to target job-related skills, Rausa et al. sought to examine the effectiveness of VM for a challenging area for many young adults with ASD: social skills. In this quantitative, single-subject, multiple-baseline design research study by Rausa et al., researchers aimed to understand better and evaluate the outcomes associated with using video modeling as an intervention to teach complex job skills to a young adult with ASD (Rausa et al., 2016, p. 268). In this study, researchers examined one 23-year-old male participant working in a non-profit social enterprise. This enterprise sought to provide young adults with ASD employment, meaningful job skills, and training programs to offer invaluable information regarding work culture and generalizable job skills that would be transferable to other employment opportunities (Rausa et al., 2016, p. 268).

Researchers created four videos to target four skills: listening, professional speech, taking orders, and managing complaints via phone. Researchers implemented the VM across multiple sessions when the participant was working. The participant would watch the VM intervention demonstrating the necessary tasks for each specific phone call and then receive any number of phone calls that day from researchers to measure the effectiveness of the VM intervention (Rausa et al., 2016, p. 269). Researchers found that the participant significantly improved three of the four target areas once the VM intervention was implemented. Additionally, researchers took maintenance data following the intervention and found that the participant maintained the skills

for three of the four targeted. The skill in which the participant did not show neither significant improvement nor maintenance was professional speech.

Researchers listed some limitations of this study, including the participant's knowledge of simulated phone calls by researchers, the side effects of medications influencing the participant's behaviors at work, and the lack of generalization for the study (Rausa et al., 2016, p. 273). Considering these limitations, like Bossa et al. and Kellem and Morningstar, this study's findings support the growing research that VM is an effective intervention tool for teaching vocational skills and adds to the research by suggesting that VM can be an effective tool for increasing employment-related social skills for young adults with ASD.

Virtual Reality Job Intervention Training

Another technology-based intervention to address employment skills involves virtual reality job intervention training (VR-JIT). Smith et al. sought to understand the feasibility and efficacy of VR-JIT in the context of improving job interview skills for adults with ASD (Smith et al., 2014, p. 2451). Researchers identified 26 adults with ASD between 18 and 31 who were unemployed or underemployed, actively seeking employment, reading at a 6th-grade reading level, and willing to be video recorded as part of the study (Smith et al., 2014, p. 2452). Researchers provided participants with VR-JIT orientation to ensure participants fully understood how to navigate the system. Following orientation, researchers provided approximately 20 trials of VR-JIT intervention throughout five visits over a two-week window (Smith et al., 2014, p. 2452). VR-JIT was implemented in three levels, starting with "easy" and progressing to "medium" and "hard" (Smith et al., 2014, p. 2454). Once participants completed an interview, researchers were notified and provided prompt feedback on areas that the

participant could improve. After giving feedback, participants could participate in another VR-JIT session (Smith et al., 2014, p. 2454).

Researchers found that participants demonstrated improved job interview skills and increased self-confidence due to the VR-JIT intervention (Smith et al., 2014, p. 2458). The findings of this study suggest that VR-JIT is an effective and accessible intervention for improving job interviewing skills for young adults with ASD (Smith et al., 2014, p. 2458). Researchers outlined several limitations, including the lack of access to trained clinicians to administer ASD diagnostic instruments, the fact that the intervention was initially developed for individuals with psychiatric disabilities, and limited e-learning material focusing on ASD was available at the time of the study (Smith et al., 2014, p. 2458).

Similar to research by Smith et al., a study by Genova et al. examined the effectiveness of VR-JIT for a slightly younger demographic. Using a randomized control trial quantitative study, Genova et al. sought to examine the effectiveness of VR-JIT intervention for high school transition-age students with ASD (Genova et al., 2021, p. 3). Researchers identified 14 participants, one female, and 13 male, to participate in the study. All participants were enrolled in a private high school for students with disabilities in New Jersey and were identified with ASD, and were randomly assigned to the control or intervention group at the start of the study (Genova et al., 2021, p. 3).

Students in the intervention group participated in 10 one-hour-long sessions over two months. The first session involved participants working with the interventionists to review e-learning material before completing the first virtual job interview simulation (Genova et al., 2021, p. 4). Similar to research by Smith et al., participants moved through three levels of difficulty in which the interviewer's attitude, tone, and questions changed (Genova et al., 2021, p.

4). For participants to advance to the next level of difficulty, they needed to demonstrate a score of at least 90% on one of three required interviews. If a participant could not obtain a score of 90%, they would advance to the next level of difficulty after completing five interviews (Genova et al., 2021, p. 5).

Like research by Smith et al., this study also found that students with ASD who participated in VR-JIT improved in multiple job interviewing skills. The researchers noted limitations to this study, including the small sample size, lack of appropriate female representation, and that participants with ASD had no comorbid intellectual disability. However, researchers asserted that considering this study's limitations, the findings provide preliminary evidence that VR-JIT is an effective intervention for transition-age youth (Genova et al., 2021, p. 7).

Upon graduation, not all students pursue the same path. While some transition-age students with disabilities may join the workforce by finding employment, others will pursue post-secondary education. The following section examines educational perspectives from post-secondary students with ASD, including preferred support services and accommodations, and effective interventions, such as peer mentoring and direct instruction in note-taking, to improve post-secondary education outcomes for students with ASD.

Post-Secondary Education

Transitioning from a high school educational routine to a post-secondary educational routine can be a monumental shift. It is well known that humans are creatures of habit. Thus transitioning from one routine to another can be difficult for any individual, but for a young adult with ASD who is often routine-oriented, it can be especially trying. Shattuck et al. discussed the low post-secondary education participation rates for young adults with ASD. Within the first six

years after graduating from high school, only 34.7% of young adults with ASD will have some form of participation in post-secondary education (Shattuck et al., 2012, p. 1047). This low participation rate prompts inquiries into why students with ASD consider accessing post-secondary education, the systems in place to support post-secondary students with ASD, and understanding the barriers still affecting student success.

Educational Experiences and Needs of Students with ASD

In order to understand the experiences and discover what unmet needs of higher education students with ASD exist, researchers Cai and Richdale completed a study utilizing semi-structured focus groups of both students and family members (Cai & Richdale, 2016, p. 32). Researchers identified 23 post-secondary education students with ASD enrolled in four colleges within two universities and asked participants to nominate a family member to partake in the study (Cai & Richdale, 2016, p. 33). From these participants, Cai and Richdale created two focus groups, one for students and one for family members.

The student focus group focused on 22 questions targeting themes such as course selection, transition to higher education, disability support, disability disclosure, assessments, academic support, orientation, organization, stress and anxiety, daily living, and social life (Cai & Richdale, 2016, p. 33).

The family focus group focused on 17 questions relating to identified themes such as the transition to higher education, concerns about their student with ASD, views on the support provided to their student, the actual support provided to their student, the support needs of parents, and the student's need for self-advocacy skills (Cai & Richdale, 2016, p. 33).

From the focus groups, Cai and Richdale identified five common themes that impacted student progression in higher education, including the core features of autism, comorbid

conditions, transition preparation, disclosure of a disability, and services and support (Cai & Richdale, 2016, p. 34). These results indicated that 63.6% of students felt their educational needs were met at their post-secondary institution. However, only 42.9% of family members felt their students' educational needs were met (Cai & Richdale, 2016, p. 34). Both students and family members agreed that insufficient support was available to address the social needs of students with ASD (Cai & Richdale, 2016, p. 34). These statistics suggest that students and family members agree that there are unmet needs for students with ASD at the post-secondary level.

Considering the limitation of the small sample size, Cai and Richdale suggest that registration with disability support services and disclosing a disability are vital to ensuring appropriate support for students with ASD at the post-secondary level (Cai & Richdale, 2016, p. 40). While transition-age students in high school or transition programming have several supports such as case management, an IEP team, and IEP paperwork documenting needs, goals, and services. However, available supports look significantly different once students enter a post-secondary institution. Unlike transition-age students in K-12 educational settings, post-secondary students with ASD must register with disability support services and self-advocate for necessary accommodations.

Similarly, a study by Accardo et al. also investigated the experience of post-secondary education students with ASD, specifically relating to access, success, and equity (Accardo et al., 2019, p. 4879). In this study, researchers sought to understand what motivated students with ASD to access a post-secondary institution, factors contributing to perceived success and barriers to success, and finally, the accommodations and support services offered to students and the utilization of these supports (Accardo et al., 2019, p. 4879). In this study, researchers identified

48 students with ASD through disability support services across four public universities within the United States.

Accardo et al. provided participants with a survey to understand each student's academic and social history and the use of disability support services and accommodations offered through the university (Accardo et al., 2019, p. 4879). This survey inquired about which accommodations participants have used and preferred to use, accommodations they have no intention of using, and asked for a rating of their top three accommodations or support services (Accardo et al., 2019, p. 4879). Upon completing the survey, researchers invited participants for an interview, and eight students agreed to participate.

Researchers found two primary reasons for participating in post-secondary education: social expectations and the desire to accommodate one's needs (Accardo et al., 2019, p. 4882). Similar to the transition from middle- to high school, the transition from high school to a post-secondary institution can be a societal expectation or norm for many students.

Accardo et al. also sought to understand how students with ASD defined success in a post-secondary setting. Based on the results from this study, they found four common themes that defined success: increased self-awareness, good grades, academic and social life balance, and meeting identified goals (Accardo et al., 2019, p. 4883). In addition to understanding the definition of success, researchers also examined what these students needed to achieve success. The researchers found that three criteria students identified were critical to success: self-determination, self-advocacy for needed support, and creating a social network (Accardo et al., 2019, p. 4885).

Accardo et al. also identified common barriers to success for students with ASD. Researchers identified four common themes among barriers to success: unmet mental health

needs, a limited understanding of disability from community members, limited financial resources, and a lack of self-awareness of disability **(**Accardo et al., 2019, p. 4884). This finding adds to previous research from Cai and Richdale that also found barriers to success that echo findings from Accardo et al., including a limited understanding of disability from both the student and the educational community, unmet mental health needs, and a lack of appropriate services and supports. Researchers discussed a couple of limitations, including the participant's perceptions of how participating in a research study could impact their future employment opportunities. Additionally, researchers considered the voices and opinions of those who have not disclosed a disability or were unaware of the study **(**Accardo et al., 2019, p. 4888).

Findings from this study suggest that barriers to success must be addressed at the post-secondary institutional level to support students with ASD. Supports include additional mental health resources, an increased understanding and awareness of disability among school faculty and community members, and increased self-awareness among students with disabilities could all contribute towards more desirable outcomes for post-secondary students with ASD. Both self-awareness and self-advocacy are critical skills for young adults with ASD. Post-secondary students with ASD must have an appropriate self-awareness and understanding of disability to know what accommodations and supports are beneficial. Upon establishing a solid self-awareness, students are better equipped to disclose a disability and self-advocate for needed support to achieve desired success.

Preferred Supports

When a transition-age student with ASD requires accommodations, the IEP team documents the need and provides differentiated support based on the individual student’s needs.

While similar supports or accommodations may be necessary at a post-secondary institution, the channels to access these supports look significantly different. At the post-secondary level, a student with ASD must work with the disability support services office to disclose a disability and advocate for necessary support or accommodations.

In order to better understand accommodations and support services that post-secondary students with ASD utilize, researchers Accardo et al. used a mixed method non-experimental survey and semi-structured follow-up interview with 23 students from a midsize university in New Jersey with ASD. Like other research by Accardo et al., students were provided with a list of accommodations and support services and asked about preferences, usage, and ranking of the top three accommodations and supports (Accardo et al., 2019, p. 576).

Accommodations included extra time on tests, copies of notes, priority registration, the use of technology, testing at the disability center, housing accommodations, reduced course load, designated note-taker, audio-recorded lectures, or utilization of a reader-scribe (Accardo et al., 2019, p. 578).

Accardo et al. found that the most preferred accommodation was using the extra time to complete tests, priority class registration, and a copy of instructor notes (Accardo et al., 2019, p. 578). These findings further reinforce the findings of other studies by Accardo et al., where extra time on tests and copies of instructor notes were preferred accommodations **(**Accardo et al., 2019, p. 4879**)**.

Regarding the least preferred accommodations, most participants identified reader-scribe and the ability to audio record lectures as non-preferred accommodations (Accardo et al., 2019, p. 578).

Identified support services included more one-on-one or small group support such as academic coaching, participation in a transition program, tutoring, a writing center, counseling,

faculty mentoring, peer mentoring, support groups, social skills groups, and self-advocacy training (Accardo et al., 2019, p. 578). Accardo et al. found that most students preferred academic coaching, participating in a summer transition program, tutoring, and the writing center (Accardo et al., 2019, p. 579). Researchers found that students preferred individualized support such as academic coaching, the writing center, and tutoring **(**Accardo et al., 2019, p. 4885). Participants across both Accardo et al. studies emphasized the importance of individualized services such as academic coaching to meet their specific needs.

While Accardo et al. noted the limitation of the small sample size of 23 students from one university, researchers assess that individualized support that connects students with ASD to a faculty member or academic coach with whom they can build a professional relationship is highly preferred (Accardo et al., 2019, p. 582). The individualized approach to structuring a support system for higher education students with ASD is a key finding across studies. In addition to an individualized support structure, students with ASD may require interventions to succeed in post-secondary education.

Targeted Interventions

Researchers examined two targeted interventions to support and improve success for post-secondary education students with ASD, a peer mentoring program and direct instruction in note-taking. Researchers sought to understand the effectiveness of these interventions in supporting students pursuing post-secondary education.

Peer Mentoring

Peer mentoring supports pairing a new student with a more experienced student to ease the transition to post-secondary education. A previous study by Accardo et al. found that

post-secondary students with ASD prefer individualized support systems. In order to better understand the implications of individualized support systems, researchers Siew et al. examined the effectiveness of one specific individualized support system, the Curtain Specialist Mentoring Program (CSMP). This peer mentoring program focused on supporting post-secondary students with ASD at Curtain University in Australia. Siew et al. identified ten undergraduate students in their first year at the university to participate in the study, including seven male and three female participants(Siew et al., 2017, p. 4). Siew et al. utilized mixed methods single group study approach with a pre-and post-test design with a battery of questionnaires and semi-structured interviews to determine the effectiveness of the peer mentoring program (Siew et al., 2017, p. 4).

The questionnaire battery identified pre- and post-intervention data on general anxiety, perceived communication competence, and communication apprehension before participating in the mentoring program and again five months into the program (Siew et al., 2017, p. 5). The mentoring program paired mentees with a trained mentor postgraduate student at the same university. Mentors were trained in general mentoring techniques and ASD-specific topics to support the mentee best (Siew et al., 2017, p. 5).

Mentors and mentees participated in frequent meetings throughout the program. Mentors and mentees met weekly to discuss specific needs or issues that have come up during the week for the mentee. Mentors also met with other mentors and the mentoring program staff to discuss challenges and the need for further support. Mentors and mentees also participated in weekly meetings to engage with other mentors and mentee pairings to interact and learn in group settings (Siew et al., 2017).

Quantitative results from the questionnaire battery showed significant improvement in social support scores and decreased general communication apprehension (Siew et al., 2017, p.

8). Qualitative results from the semi-structured interviews found that participants valued consistent, reliable support, the comfort of peer-to-peer support, and flexible, individualized support (Siew et al., 2017, p. 8). Additionally, researchers found five ways the mentoring program supported the mentees: coaching, increased motivation, practical support, group support, and emotional support. Siew et al. connected these themes to positive outcomes associated with the mentoring program, including support with the transition to university, managing the academic workload, self-advocating for support, managing emotions, and socialization (Siew et al., 2017, p. 11).

The findings from this study suggest that students with ASD that participated in the peer mentoring program experienced positive outcomes, including support in transitioning to the university, managing the academic workload, self-advocating, managing emotions, and socializing (Siew et al., 2017, p. 11). Students appreciated the flexibility and individualized experience of a peer mentoring program with trained mentors. Participants noted that designated unstructured mentorship time allowed them to address specific concerns and problem-solve.

One significant limitation identified was the lack of a control group for the intervention. Researchers stated that without it, results from this study need to be interpreted with caution and that the study cannot provide conclusive evidence that the mentor program is the reason for the outcomes found (Siew et al., 2017, p. 14). Considering the limitations, researchers propose that the findings from this study suggest that individualized peer mentoring programs can effectively support students with ASD in a postsecondary educational setting. This finding supports other research, including previous research examined by Accardo et al., that young adults with ASD participating in postsecondary education prefer individualized support systems that are differentiated to address the range of specific needs for each student.

Note-Taking Intervention

While interactive one-on-one interventions such as peer mentoring may benefit some students, other students may require additional direct instruction in strategies to improve their chances of success in a post-secondary setting. Researchers Reed et al. sought to examine the effectiveness of one intervention utilizing direct instruction to target the skill of note-taking. In this study, researchers sought to examine the effects of note-taking instruction for adults with co-morbid ASD and intellectual disability (ID) who participated in a community college program for students with ID (Reed et al., 2016, p. 197). Researchers identified three participants to participate in the study, all enrolled in a two-year program for young adults with significant cognitive disabilities at a community college. This program allowed students to audit one class per semester from a catalog of introductory options (Reed et al., 2016, p. 198). Each participant participated in a different course, one in an American history class and two in separate computer literacy classes. Researchers noted that two of the participant's classes took place in a traditional lecture format while the other was in a flipped classroom. In the flipped classroom, the expectation was for students to have reviewed the lecture materials before class and then attend in-person classes for more hands-on applications (Reed et al., 2016, p. 197).

Baseline data was collected when researchers instructed students to use split-page notes during a lecture without further instruction. During the intervention phase, the interventionist explicitly provided instruction on setting up the split-page notes, taking detailed notes, including topics, subtopics, and details, and identifying this information during in-person or online lectures (Reed et al., 2016, p. 201). The interventionist provided this individualized instruction differentiated for each participant’s class content and provided participants with examples of an accurate, completed note page. Interventionists explicitly explained topics, subtopics, and details

and how to identify this information during in-person or online lectures (Reed et al., 2016, p. 201). For the two participants in traditional lecture-style classes, the interventionist showed videos so that the participants could practice note-taking and stopped to highlight when they should note important information. For the third participant in a flipped class, interventionists used samples of the electronic slides and other lecture materials for the participant to complete the direct instruction portion of the intervention (Reed et al., 2016, p. 201). Researchers then compared pre- and post-observation notes to determine whether the intervention improved the students' note-taking skills. Researchers found that the intervention was successful for all three participants in improving their note-taking skills, suggesting that intervention and instruction can improve students' note-taking skills in an educational setting.

Reed et al. discussed several limitations of the study, including a lack of monitoring of each participant's ability to recall content during each phase. Additionally, each participant took a different course, and researchers needed help equating content difficulty across participants (Reed et al., 2016, p. 208). Finally, researchers could not determine whether the intervention contributed to improved academic outcomes because the participants were auditing the course in which they would not earn a grade (Reed et al., 2016, p. 208). Despite these limitations, direct instruction intervention can improve student note-taking skills and, in turn, may lead to improved success in courses in post-secondary education settings.

Whether transition-age adults with ASD join the workforce through employment or pursue post-secondary education, all require foundational independent living skills. The final subsection of chapter two discusses effective interventions targeting independent living skills for transition-age adults with ASD.

Independent Living Skills

When transitioning to adulthood, many students look forward to no longer having to live at home with their parents or families. It is often a rite of passage to move out, whether into a dorm room at a post-secondary institution, an apartment with friends, a group home, or completely independently. The third area of transition that educators and families target are independent living skills. For this paper, home living skills will be the focus of the larger scope of independent living skills. While many families share the aspirations for their child or young adult with ASD to live independently, it is easier said than done (Chen et al., 2019). Families and educators work tirelessly to teach various independent living skills in hopes that young adults with ASD will apply these in their living situations, but that is only sometimes the case. This lack of sufficient independent living skills drives inquiry into effective interventions to support young adults with ASD best to increase independence in home living skills.

System Interventions

Different interventions require various levels of support in order to implement with fidelity. Two interventions examined, work systems and self-monitoring systems, relied on implemented systems to support the acquisition and maintenance of an independent living skill. These interventions required support from outside sources to implement them to begin. However, ideally, they become self-sustaining systems over time as independence increases and reliance on outside support, such as family and caregivers, decreases.

Work Systems

The first system intervention examined was work systems. Work systems act as visual interventions that provide task analysis for a target skill and include an obvious beginning, end,

and cue for the next activity (Sreckovic et al., 2020, p. 241). Sreckovic et al. examined parent-mediated work systems as an intervention to improve targeted home living skills. In this study, Sreckovic et al. sought to investigate the effectiveness of parent-implemented work systems in increasing adolescent task initiation and completion within the home (Sreckovic et al., 2020, p. 241). Like many VM interventions, Sreckovic et al. collaborated with key stakeholders, including parents, to identify desirable tasks for participants to improve.

In this study by Sreckovic et al., participants' mothers were the primary caregivers participating with their adolescents. Researchers evaluated three adolescence with ASD, ages 17 and 18, living at home. In this single-case multiple baseline design, researchers implemented the work systems intervention in three parts: developing a work system specific to the task, training parents on how to implement the work system, and instructing parents on how to introduce the work system to the adolescent (Sreckovic et al., 2020, p. 244).

Each adolescent's work system focused on a different home living task, including laundry, packing cold lunches, and cooking (Sreckovic et al., 2020, p. 244). Once parents were ready to implement the work system, researchers examined the number of steps initiated independently and the number of steps completed independently for each participant on the assigned home living task. The study's results supported that parent-implemented work systems effectively increase task initiation and completion among adolescents with ASD (Sreckovic et al., 2020, p. 250).

However, researchers noted many limitations to this study, including a lack of diversity among participants, the inability to differentiate the impact between the parent-mediated aspect and the work system intervention, and the lack of protocol given to parents on how to proceed if the adolescent completed a step incorrectly (Sreckovic et al., 2020, p. 254). Considering the

study's limitations and reliance on parent implementation, the work system intervention adds to the research in that it can support adolescents with ASD in initiating and completing home living tasks within the home. While this intervention demonstrated some successes with the three participants, parent or caregiver attention is vital to successful implementation. Additionally, while work systems may require initial support from parents or caregivers, ideally, the intervention would support a participant in becoming more self-sufficient in the targeted home living task.

Self-Monitoring Systems

Another system targeting independent living skills is a self-monitoring system. Self-monitoring is monitoring one's behavior to determine if one performed the desired behavior (Bouck et al., 2014, p. 156). There are countless examples of self-monitoring behaviors in adults, such as monitoring sleep, exercise, the number of fruits and vegetables consumed, calories, water intake, or time on electronic devices. There are also various ways to monitor these behaviors. In today's world of technology, monitoring these behaviors can range from simple, low-tech systems, such as pencil and paper, to high-tech systems, such as applications on phones and tablets.

In a study conducted by Bouck et al., researchers sought to compare self-monitoring systems of a high-tech method of using an iPad and a low-tech method of pencil and paper to determine which was more effective in increasing task independence for students with ASD (Bouck et al., 2014, p. 156). In this quantitative study, researchers sought to answer four research questions, including whether or not the participants' levels of independence would increase, the number of prompts needed for each method, the time it took for participants to complete the tasks for each method, and understand student perspectives on each method. Researchers

identified three secondary-level students between the ages of 13 and 15 in a rural Midwestern area to participate in the study (Bouck et al., 2014, p. 158).

In order to determine the effectiveness of each method, researchers utilized an alternating treatment design targeting increased independence in food preparation (Bouck et al., 2014, p. 159). Researchers provided each participant with a recipe and the self-monitoring method, alternating between the low-tech pencil and paper or the high-tech iPad. Each participant engaged in 6-7 sessions per method with differing recipes. At the same time, researchers noted the level of assistance required for each step, student self-monitoring, and the total time for each participant to complete the food preparation task (Bouck et al., 2014, p. 160). Bouck et al. found that all three participants were measurably more successful with the high-tech method of utilizing the iPad in terms of increased independence, increased self-monitoring, decreased number of prompts needed to complete the task, and decreased time required to complete the food preparation tasks. Researchers found that using pencil and paper for self-monitoring increased task independence and reduced the number of prompts needed to complete the task. However, the iPad was far more effective and preferred by participants (Bouck et al., 2014, p. 165).

Researchers shared several limitations to this study, including the understanding that all participants had past positive experiences with the iPad, which may have contributed to participant preference (Bouck et al., 2014, p. 165). Additionally, each method's food preparation task display was a limitation as the pencil and paper displayed more steps than the iPad, which only displayed two steps per page (Bouck et al., 2014, p. 166).

This study's findings suggest that using low-tech or high-tech self-monitoring systems can increase independence in task completion and decrease the number of prompts needed.

However, this study suggests that high-tech self-monitoring may be more effective than pencil and paper (Bouck et al., 2014, p. 166).

Care-giver Supported Interventions

Other interventions rely on active participation and support from outside sources such as parents, caregivers, or researchers to be implemented with fidelity. These interventions include digital technology-mediated interventions, video conferencing, and community interventions. The following subsections will discuss the effectiveness of each of these interventions, and each share a common theme of requiring ongoing support to implement the intervention.

Digital Technology-Mediated Intervention

Technology-supported interventions have allowed families and educators to incorporate technology in various ways to support transition-age adults with ASD in the classroom and at home. Like Bouck et al., a study by Pérez-Fuster et al. sought to determine the effectiveness of a different higher-tech intervention. This study aimed to determine the effectiveness of an embodied digital technology (DT) mediated intervention targeting two specific daily living skills completing laundry and washing dishes. This quantitative single-subject experimental design compared the effectiveness of treatment-as-usual (TAU) lower-tech laminated paper visuals, visual schedules, and task strips to higher-tech DT-meditated intervention (Pérez-Fuster et al., 2019, p. 61).

Pérez-Fuster et al. identified four male adults between 25 and 37 with comorbid ASD and an intellectual disability (ID) that engaged in a day program for adults with ASD to participate in the study (Pérez-Fuster et al., 2019, p. 57). Researchers began with the treatment-as-usual (TAU) phase, where participants utilized laminated paper visuals, visual schedules, and task strips to

complete the targeted skills of laundry and dishes (Pérez-Fuster et al., 2019, p. 61). Following the TAU phase, researchers implemented the intervention phase in two parts, utilizing a digital technology system with and without a LED lighting system.

This DT-mediated intervention was implemented through tablet or phone technology and contained three components: a web interface, a mobile application, and an LED lighting system (Pérez-Fuster et al., 2019, p. 57). The first part of the intervention phase utilized digital technology without LED lighting. In this phase, the mobile application would display an activity board with visual options for scheduled activities and a task board that would open upon selecting an activity (Pérez-Fuster et al., 2019, p. 57).

In the second part of the intervention phase, researchers added the LED lighting component using the DT. For this, researchers placed LED lights near the areas of the targeted task, including next to the kitchen sink, above the washing machine, and by the laundry basket (Pérez-Fuster et al., 2019, p. 60). Once a participant chose an activity, the LED lighting system would be activated in the home environment and act as a visual aid for the participant.

Pérez-Fuster et al. found that the DT-mediated intervention was more effective than the TAU both in reducing the number of prompts needed to complete each task for three of the four participants and in decreasing the number of off-task behaviors for all participants (Pérez-Fuster et al., 2019, p. 64). Researchers noted one limitation, including a participant's engagement in all parts of the intervention due to participant health concerns (Pérez-Fuster et al., 2019, p. 64).

However, considering the study's limitations, researchers suggest using digital technology via handheld devices is more effective than conventional paper visual methods (Pérez-Fuster et al., 2019, p. 64). This finding reinforces findings from previous studies by Bouck et al. that using

higher-tech systems, such as digital technology, may be more effective in supporting the acquisition and maintenance of daily living skills in adults with ASD.

Video Conferencing Intervention

Similar to how utilizing technology within the general education classroom can look, utilizing technology in interventions for transition-age students with ASD has endless potential. Researchers Ford et al. examined the effectiveness of video conferencing (VC) interventions to improve daily living skills for young adults with ASD. Using a single-case multiple baseline quantitative study, researchers implemented VC interventions for three young adult males, ages 25 to 30, with ASD, identified through affiliation with the university autism center (Ford et al., 2021, p. 82). Adults were identified for participation in this study based on living arrangements and dependency on caregivers for support with daily living skills (DLS) (Ford et al., 2021, p. 82).

Key stakeholders identified common DLS to target during the intervention. For example, one participant's target behavior was cleaning and organizing his bedroom. The second participant's target behavior was cooking and cleaning the oven—the third participant's laundry and ironing. Researchers completed task analysis for each participant with phases, steps, and detailed descriptions.

Parents or support staff would video-record participants completing the target task during baseline before intervention. The VC intervention was then scheduled for 15-60 minutes once or twice weekly. Each VC session would follow a four part structure beginning with rapport building, followed by prompting the target skill and providing specific contingent praise, and finally providing feedback on the performance of how the target skill completed while refraining from negative comments regarding performance (Ford et al., 2021, p.88). Following the

intervention, researchers provided maintenance probes six- to fourteen weeks upon completion of the intervention.

Researchers found that all three participants increased their independence by completing the task with fewer prompts following the VC intervention. These findings suggest that using VC to teach and support DLS can be an effective intervention for young adults with ASD (Ford et al., 2021, p.90). Researchers noted a limitation in collecting maintenance data for one participant due to outside factors. Ford et al. suggest that continued research is needed to examine how VC interventions could be effective in other transition areas, such as employment or social skills (Ford et al., 2021, p.90).

Community Intervention

Technology-based interventions may be beneficial in targeting specific independent living skills. However, not all interventions can be technology-based interventions. Community-based interventions may be necessary to target other independent living skills. Researchers McConkey et al. sought to examine the social effects and outcomes of low-level community intervention, Right4U, for adults with ASD. Researchers identified 54 adults, 15 female and 39 male, with ASD from rural Ireland, who participated in the community intervention throughout a three-year period.

This study utilized mixed methods through two project officers to implement the Right4U intervention by meeting and supporting participants one-on-one to create a plan for increased participation in community social events. Over three years, participants received 12 months of one-on-one individualized support and opportunities to participate in community-based social events (McConkey et al., 2021, p. 325). In addition to the one-on-one support, participants were invited to participate every two weeks in small group meetings to work on social skills

(McConkey et al., 2021, p. 325). Large group outings were organized at least once monthly, with additional activities scheduled during the summer months. These social outings aimed to decrease their dependence on program staff and increase participant independence in managing their social interests and plans (McConkey et al., 2021, p. 325).

Researchers utilized individual interviews, focus groups, and online surveys to record information about the perceptions and impact of the community intervention (McConkey et al., 2021, p. 326). They found that the Right4U intervention led to increased time participants spent out of the house, an increase in the number of engagements within community activities, and increased independence and confidence (McConkey et al., 2021, p. 329).

Based on the qualitative data collected, McConkey et al. identified three themes from participants and family members. The first was that the one-on-one component of the intervention was essential as it allowed for an individualized approach for each participant to participate at their own pace (McConkey et al., 2021, p. 331). This finding reinforces what previous researchers Accardo et al. and Siew et al. have found in post-secondary education in a preference for individualized support. Researchers also found that using small group activities created a less threatening environment to socialize (McConkey et al., 2021, p. 325).

McConkey et al. acknowledged the need for follow-up maintenance data to determine the long-term implications of the low level community intervention as a limitation (McConkey et al., 2021, p. 322). However, despite this, researchers suggest these findings support the use of low level community interventions as a successful means to support adults with ASD in accessing the community.

Conclusion

While the research examined in chapter two begins to answer how educators can most effectively teach and support secondary transition education that leads to desired outcomes for students with ASD, the literature reviewed is not all-inclusive. However, by providing these interventions targeting transition skill areas for students with ASD, educators can provide inclusive instruction for all learners.

Whether targeting employment skills through the use of video modeling or virtual reality training, supporting post-secondary education skills through targeted interventions such as peer mentoring or direct instruction, or focusing on independent living skills through the use of systematic interventions or caregiver-supported interventions, each of these interventions provides students a unique opportunity to acquire and maintain the skills necessary for more desirable post-secondary outcomes. Through the knowledge and use of specialized interventions focused on specific areas of transitions, educators are better equipped to support inclusive instruction for all transition-age students to meet their needs. The final chapter of this paper will discuss the implications of the research examined, how educators can apply the findings from this research, and address the gaps for future research to explore.

Chapter 3

Introduction

Thoughtful transition planning is necessary for any student, especially those with disabilities. With each unique student comes a unique transition plan. When considering what is next for students upon graduation, educators must address the three areas of transition, employment, post-secondary education and training, and independent living. The purpose of this chapter is to summarize the insights of the research in chapter two, discuss how educators could apply the research findings, and identify directions for future research.

Discussion

Chapter two highlighted relevant research providing information on interventions and supports for transition-age students with ASD. All the research examined contributed to best practices and interventions to address the three transition areas. It demonstrated that when educators utilize purposeful instruction and interventions, outcomes can improve for transition-age students with ASD.

Current research suggests that technology, such as video modeling and virtual reality, can target and positively impact employment skills, such as specific employment tasks or employment-related social skills for young adults with ASD. Based on the findings from the examined research studies, utilizing these interventions to target specific employment skills could improve the performance of young adults with ASD in an employment setting, thus increasing their likelihood of long-term success.

For transition-age students pursuing post-secondary education, understanding the experiences and perspectives of students with ASD is critical in identifying supports,

accommodations, and interventions needed for success. Additionally, the knowledge of supports such as peer mentoring or interventions targeting necessary skills is imperative for setting transition-age students with ASD up for academic success.

Whether transition-age students pursue employment or post-secondary education upon exiting their K-12 public education, all transition-age young adults require independent living skills to contribute towards their households and live as independently as possible. Research on the use of systematic interventions, such as work systems and self-monitoring systems, and supported interventions, such as the use of VC, digital technology-mediated interventions, and community interventions, suggest that these interventions can significantly improve the independent living skills of transition-age students.

Using these interventions to acquire and maintain transition skills is imperative to the post-secondary success of students with ASD. While the research provides evidence that these interventions are valuable and can improve outcomes, educators must understand the implications of these interventions and how they could be utilized within the classroom, community, or in-home settings.

Applications

Employment

The research by Bross et al. and Rausa et al. suggest that VM can be applied to target several skills for young adults with ASD, from job-specific tasks to social skills. Educators can use these findings to create VM interventions within the classroom or the community. A classroom example of a classroom-based VM intervention could be to teach a job-specific social skill, such as answering the phone, similar to the research conducted by Rausa et al. An example

of a community-based VM intervention is to target job-specific tasks. For example, in a retail setting, a VM intervention could be created to teach students how to correctly identify expiration dates on product and remove the product that is expired. Building upon previous research demonstrating the effectiveness of VM as an intervention to improve employment skills in young adults with ASD, handheld technology could revolutionize community-based interventions. One critical component of transition education that educators focus on is self-advocating for needed accommodations. Bross et al. suggested that using VM could be a practical, reasonable accommodation to improve work performance for adults with disabilities (Bross et al., 2020, p. 223).

The implication that this intervention could be used as an employment accommodation is crucial for educators and families to know to teach best and support their young adults with ASD in a community-based employment setting. For students who have obtained competitive employment, this intervention can be utilized at their employment site to increase their performance at work and, in turn, the likelihood of maintaining employment.

Additionally, educators can use this intervention within transition programming to support students at various community-based work sites and within the classroom. Integrating technology effectively in instruction is a component of teaching that educators must balance. In today’s age of technology, many students and young adults have cellular phones or school-issued devices that could be utilized on the job for VM interventions. The findings from this study are beneficial to educators as it provides a modern intervention that can be utilized with everyday technology to support the improvement of work skills at community employment sites.

Educators focusing on the employment process, such as the job interviewing process, can benefit from Genova et al.'s findings that VR-JIT can be an effective intervention to target

interviewing skills for transition-age students with ASD. The job interviewing process is often daunting for first-time job seekers, but especially for those who struggle with social interactions or reading social cues, as many students with ASD do. Utilizing this intervention to prepare transition-age students for job interviewing can provide meaningful practice with feedback that can be difficult to replicate in a school setting.

Post-Secondary Education

Many of the findings from the research in chapter two can be applied before students attend a post-secondary institution. The findings from Accardo et al. about student experiences suggest gaps within the accommodations and support services offered at the post-secondary level to support students with ASD. Educators can support students using direct instruction on accommodations, what they are, which ones have been used throughout their K-12 education, and explore what they may or may not look like in a post-secondary setting. They could also use this information to guide self-advocacy lessons and provide real-life examples of how self-advocacy skills can be used. For example, educators could structure a unit around self-advocating for needed accommodations in the workplace or an educational setting. This lesson could include a visit to a university disability service center, providing instruction to students on how to disclose their disability, and what should be done if their needed accommodations are not being honored. This direct instruction surrounding self-advocacy before a student attends their post-secondary institution provides them with the tools and practice they need to apply what they have learned in their first year of post-secondary education.

By examining the effectiveness of a specific peer mentoring program designed to support young adults with ASD through their postsecondary education experience, Siew et al. indirectly contributed to the growing research that postsecondary students with ASD prefer one-on-one

individualized support systems. Educators should use this information to explain what support structures are in place to support students with ASD at the post-secondary level.

For example, suppose a student knows that writing is challenging. In that case, educators should teach students considering post-secondary education about what resources are available, such as the writing center, to support them during their academic journey. Knowing post-secondary students with ASD prefer individualized support can help educators collaborate with students to prepare a plan to utilize needed support services and accommodations. For example, if a student has shown success with peer mentoring in high school, educators should encourage students to consider using similar individualized supports at the post-secondary level. Educators can set post-secondary students up for success by giving them the tools to know the support they need and what support the institution offers. In turn, students will be better able to advocate for those themselves.

Additionally, the findings from Reed et al. suggest that educators could successfully utilize note-taking interventions to improve note-taking skills for transition-age students planning to attend a post-secondary institution. Educators can use this information to teach and prepare their students on note-taking techniques and strategies and provide a setting to practice the skill before going to a post-secondary institution.

Independent Living Skills

It is important to note that while the study by Sreckovic et al. demonstrated the effectiveness of parent-implemented work systems within the home, it may not be an effective intervention in families that cannot implement the work system with fidelity. Interventions implemented at school with teachers and support staff support are far more controllable for educators than interventions implemented at home. While educators often go above and beyond

for students, they cannot go home with students to implement interventions across settings, such as the work system intervention researched by Sreckovic et al., educators may introduce this intervention or implement work systems within the school or community. However, buy-in from parents and caregivers is key for successful implementation within the home environment. One option for educators may be implementing work systems within the classroom that can be used at home. Still, it is not feasible or reasonable for educators to assume all parents or caregivers have the necessary resources to implement work systems within the home with fidelity. Therefore, this intervention to increase home living skills should be approached by educators with caution and with the understanding that without support at home, it may not be as successful of an intervention as demonstrated in the study by Sreckovic et al.

Additionally, educators' knowledge of a range of low- to high-tech self-monitoring systems allows individualization for each student based on their needs, present levels of performance, and comfortability with technology. This allows educators to customize interventions based on student needs to support inclusive instruction for all learners within the classroom.

The findings by Ford et al. provide valuable insights into the use of VC in the instruction of daily living skills. While VC while students are at home is typically outside the scope of what traditional in-person educators can provide, in today’s world of digital learning, some schools provide online instruction as an option. In this case, VC would be an intervention to consider to target daily living skills for transition-age students with ASD. Additionally, it could be another intervention in addition to work systems that are parent or family-implemented within the home.

In addition to work systems or VC, educators can use the information from Bouck et al. in comparing high and low-tech self-monitoring methods systems to increase student

independence and decrease prompt reliance on others. Educators can use high or low-tech self-monitoring systems when teaching independent living skills, depending on student need, preference, and resource availability, as a form of accountability within the classroom. For example, in teaching laundry skills in the home living lab environment, educators can utilize self-monitoring systems with students to ensure all steps have been completed. This skill and system could then be transferred to the home environment. Educators should note that while many schools may have access to 1:1 student devices or iPads, not all educators and students share that luxury, and when it is not an option, pencil and paper methods are still effective in improving student independence.

Like other interventions, educators' understanding of various digital technology-mediated interventions can provide parents, families, and students with options for in-home interventions and instruction. Technology is now engrained in everyday life, so educators understanding how technology can be utilized to provide instruction or interventions can help families looking for additional support. Additionally, educators could utilize this technology within the classroom, teaching students transition skills utilizing a similar system, especially if working on routines such as laundry, dishes, or other cleanings.

The findings by McConkey et al. suggest that community interventions can effectively increase student engagement within the community. Educators can use this information to inform students and families about community resources that could provide interventions similar to the low-level community intervention implemented in the research previously discussed. Parents and families often have questions about what is next and inquire about paths for students who need support to hold competitive employment or attend a post-secondary institution. For those students, community-based interventions serviced through community providers, such as a day

program, may be more appropriate. Educators having an understanding of these resources in their community can help students plan for the future, even if they take a different path.

Future Studies

Researchers provided many limitations and identified areas for further research to be done. A few common themes were identified, including the need to examine interventions across all three transition areas, an increased sample size that is more representative of the population, and the need for longitudinal data to determine the long-term impacts of the interventions.

Regarding employment interventions, Bross et al. suggest that future research target other employment-specific social skills to improve skills such as advocating for help, requesting schedule changes, and other skills as needed (Bross et al., 2020, p. 223). Kellems and Morningstar suggest that future research be done to explore using VM to improve existing skills rather than introduce new skills (Kellems & Morningstar, 2012, p. 165). Rausa et al. suggests that future research should design individualized interventions based on the need of the adult with ASD, evaluating the benefits of creating employment opportunities (Rausa et al., 2016, p. 273). For VR-JIT, future studies should be considered to include diagnostic confirmation of ASD diagnosis and examine the efficacy of the intervention in long-term studies (Smith et al., 2014, p. 2458).

For post-secondary education studies, future research should examine the identification of students with disabilities that attend a post-secondary institution and address how to identify students who may need support but have not disclosed a disability. Cai and Richdale propose that future studies examine best practices for post-secondary institutions to provide social and educational support for students with disabilities (Cai & Richdale, 2015, p. 40).

Additionally, Reed et al. propose that future research examine the relationship between note-taking and any improvements in learning content at the post-secondary level (Reed et al., 2016, p. 208). Accardo et al. suggest that enhanced data collection and longitudinal data are necessary for future research better to understand the post-secondary experiences of students with ASD (Accardo et al., 2019, p. 582).

For independent living research, a broader population sample should be considered in addition to applying interventions across transition skill areas. Data collected by Bouck et al. examining self-monitoring systems need to be expanded upon in future research to include more diverse populations, as the current study had a population that was primarily Caucasian and skewed toward families of higher socioeconomic status (Bouck et al., 2014, p. 572). Researchers Sreckovic et al. and Pérez-Fuster et al. suggest that future research be done regarding the effectiveness of interventions across transition areas to include a wider variety of skills. Sreckovic et al. suggest this takes place at community employment sites, educational institutions, and within the home (Sreckovic et al., 2020, p. 255). Additionally, digital technology-mediated interventions could be conducted across other home living skills to increase the independence of adults with ASD (Pérez-Fuster et al., 2019, p. 65). Further research should be conducted for low-level community interventions to understand the long-term impact of these interventions (McConkey et al., 2021, p. 332).

While each researcher addressed limitations and prompted inquiries into further research, key themes were identified across all areas, including the need for more diverse populations and sample sizes and the need to examine interventions across transition areas. For example, using VM to address independent living skills or applying work systems toward acquiring employment skills may be examples of how researchers could apply interventions across transition areas.

Conclusion

In the end, each and every person has a range of unique characteristics, traits, strengths, and challenges, and so do our students with ASD. A well-known quote by Dr. Stephen Shore says, “If you’ve met one person with autism, you’ve met one person with autism.” This quote is important to remember when transition planning for students with ASD. While each student can have identified needs in the three areas of transition, plans and interventions to address these needs should be as individual as our students. Educators must know about the latest research and evidence-based practices to best support transition-age students with ASD. Understanding not only what these interventions are but how they can be implemented in the classroom, in the community, or at home in the transition planning process is invaluable and can contribute towards more desired outcomes for transition-age students with ASD.

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