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## AUTISM AT WORK ACROSS THE CAREER SPAN: A SCOPING REVIEW

by

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A Dissertation Submitted to the Faculty of Old Dominion University in Partial Fulfillment of the Requirements for the Degree of

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**ABSTRACT** 

AUTISM AT WORK ACROSS THE CAREER SPAN: A SCOPING REVIEW

Kate Noel Warnock Old Dominion University, 2024

Director: Dr. Ian M. Katz

This scoping review takes a career-span approach to the experiences of autistic people at

work. Using Super's (1994) life-span, life-space theory as a framework, I divided the literature

into five career phases: Growth, Exploration, Establishment, Maintenance, and Disengagement.

In each phase, I reviewed the challenges and facilitators that autistic people face, highlighting

themes that have strong support in the literature, and areas that need further examination in

future research. Additionally, I argue that Super's career framework is not the most parsimonious

way to describe the career trajectories of autistic individuals and propose modifications to the

framework to better represent their experiences. I also discuss the importance of examining the

experiences of those with low-severity autism diagnoses separately from those with high-severity

autism diagnoses, as their reasons for working are different. Finally, I discuss theoretical and

practical implications, and propose avenues for future research.

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For Maddi.

# **ACKNOWLEDGEMENTS**

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### **CHAPTER I**

### INTRODUCTION

Autism spectrum disorder (ASD) is a complex neurodevelopmental disorder characterized by social communication and interaction deficits and restricted or repetitive behavior (American Psychological Association, 2013). It can also include hyper- or hyposensitivity to sensory stimuli, fixation on routines or rituals, and highly specific interests and preoccupations; however, the severity of symptoms differs from person to person.

Additionally, diagnoses are often categorized by level of severity, with Level 1 indicating the individual requires some support, Level 2 indicating the individual requires substantial support, and Level 3 indicating the individual requires very substantial support (American Psychological Association, 2013).

Because of the social and behavioral challenges autistic individuals face (e.g., difficulty with social cues and norms, managing time, dealing with ambiguity and unpredictability), they are significantly underrepresented in the workforce (Bury et al., 2021b). The unemployment rate for autistic adults is estimated to be somewhere between 50-85% (Austin & Pisano, 2017; Bush & Tassé, 2017; National Autistic Society, 2016; Roux et al., 2017). These unemployment rates are significantly higher than the unemployment rate for adults without disabilities (Bureau of Labor Statistics, 2020; Nord et al., 2016), as well as for adults with other disabilities (Roux et al., 2013), including those with intellectual disabilities (Bush & Tassé, 2017; Howlin, 2013; Roux et al., 2015), Down syndrome (Bush & Tassé, 2017), and speech, language, and learning disabilities (Howlin, 2013; Roux et al., 2015). Furthermore, among autistic adults who are employed, many of them are underemployed, meaning they work fewer hours than they would like to work or have an educational level that exceeds their work responsibilities (Baldwin et al.,

2014; Hedley et al., 2017b; Migliore et al., 2012). In fact, it has been estimated that only 6% of autistic employees work full-time (Chappel & Somers, 2010), and many autistic individuals have never been a member of the labor force at all (Cidav et al., 2012; Shattuck et al., 2012). Additionally, many employed autistic adults are paid less than a living wage (Hedley et al., 2017b; Migliore et al., 2012) and earn less than employees with other disabilities (Roux et al., 2013).

These poor employment outcomes are the result of the social communication and behavioral challenges that autistic individuals face before and during employment (Chezan & Drasgow, 2022). For example, autistic individuals may have difficulties understanding social boundaries and non-verbal or non-literal language, managing their time and organizing tasks, transitioning between tasks, adapting to unpredictable changes or ambiguity, and working in overly stimulating environments (e.g., loud, bright lights, strong smells; Johnston-Tyler & Analla, 2015). These challenges can create barriers to obtaining and maintaining employment, from early in the career cycle to the end of the career cycle. In the early stages of their career, autistic individuals can struggle in college environments, despite their interest in their major, due to difficulties with executive functioning (e.g., concentration and attention, working memory, problem solving) and social interaction (Johnston-Tyler & Analla, 2015), which can often hinder career development and transition at this pivotal stage and leave them with less experience and less preparation for the working world than their non-disabled peers (Dipeolu et al., 2015; Meeks et al., 2015).

As they transition to the working world, job searching and applying represent major barriers for autistic individuals. Job application processes often involve assessments that rely on strong social skills (e.g., interviews; Carrero et al., 2019), which can be challenging for this

population of individuals to navigate and can act as a barrier to obtaining employment (Bury et al., 2021b; Strickland et al., 2013). Furthermore, even if interviews or other socially-based assessments are not used, the pervasiveness of stigmas toward neurodivergent individuals can create unconscious bias in the hiring committee members and can hinder the autistic individual's chance to be assessed equitably (Carrero et al., 2019).

If an individual can obtain employment, they still face challenges on the job throughout their working life. Autistic employees often face poor job fit and suboptimal accommodations to their job tasks and work environment (Aylott et al., 2008; Hedley et al., 2018), underutilization of their skills (Carrero et al., 2019), and poor social relationships with their supervisors and coworkers (Austin & Pisano, 2017; Hedley et al., 2018; Sperry & Mesibov, 2005). Furthermore, unwritten social norms that can impact performance evaluation and workplace relationships (e.g., unspoken expectations for performing extra-role behaviors to assist others or benefit the company; Hunter & Hunter, 2022) can present challenges for autistic employees to maintain their employment (Bury et al., 2021b; Meeks et al., 2015). Autistic employees are also more likely to turnover voluntarily due to high levels of stressors (e.g., interpersonal struggles, sensory sensitivity) and limited resources to manage those stressors (Bury et al., 2022). Lastly, autistic employees at retirement age can struggle to make the transition to retirement due to a lack of strong community supports (Janicki, 1992), self-determined leisure activities (Rogers et al., 1998), and lack of understanding regarding the choices and processes of retirement (Mahon et al., 1995).

The exclusion of autistic individuals from the workforce is detrimental for autistic individuals, employers, and society alike. Employment is a critical component of adult life, often providing financial security and independence, quality of life, and general well-being (Annabi &

Locke, 2019; Bury et al., 2021b; Heinz et al., 2018). For adults with disabilities in general, integrated employment (i.e., working in the general community and not in a segregated employment program for individuals with disabilities) has been consistently shown to relate to financial and emotional wellness and improved quality of life (Eggleton et al., 1999; Wei et al., 2015) due to its providing structure, social support, independence, self-efficacy, and income for the individual (Bush & Tassé, 2017; Gerhardt & Lainer, 2011; Hurlbutt & Chalmers, 2004). Furthermore, research has shown that integrated employment can prevent increases in pathology for autistic adults, such as interpersonal resistance, inappropriate emotional responses, and behavior or movement abnormalities (Garcia-Villamisar et al., 2000), and can even reduce clinical symptoms and maladaptive behaviors (Taylor et al., 2014).

The exclusion of autistic individuals is also detrimental for employers because autistic individuals possess qualities that can be of great value to organizations. For example, autistic individuals are often extremely skilled in pattern recognition (Happé & Vital, 2009; Scott et al., 2017), remembering large amounts of information (Scott et al., 2017), concentration on repetitive tasks (Crespi, 2016; Scott et al., 2017), visual searching and detecting (Crespi, 2016; Simmons et al., 2009), logical thinking and decision making (Crespi, 2016), out-of-the-box thinking (Romoser, 2000), and developing expertise in areas of special interest (Caldwell-Harris & Jordan, 2014; Simmons et al., 2009). Furthermore, autistic individuals are often extremely trustworthy and loyal to their organizations, tend to be consistently on-time to work and rarely absent, regularly adhere to organization guidelines, and showcase great integrity (Hurlbutt & Chalmers, 2004; Scott et al., 2017). Thus, employers can gain competitive advantage by designing selection systems and workplace practices that are inclusive and accommodating to autistic individuals.

The inclusion of autistic individuals in the workforce also benefits society at large. Care for autistic adults in the United States, including employment services or accommodations, can cost collectively between \$175 and \$196 billion annually (Buescher et al., 2014). However, supporting integrated employment (as opposed to sheltered employment in segregated workplaces for those with disabilities) not only costs less than standard care for autistic individuals, but also improves the quality of life of autistic individuals and thus reduces their need to utilize other support services, further reducing care costs (Jacob et al., 2015;

Mavranezouli et al., 2014). Furthermore, when employed in integrated employment positions, autistic individuals provide valuable contributions to society and even further off-set the costs of autism care. Thus, improving employment outcomes for autistic individuals would increase societal productivity and reduce costs for standard care as well as other types of support services.

Unfortunately, most research on autism has focused on autism in children (Jang et al., 2014), and there is a significant lack of research on autistic adults (Bennett, 2016). Because of the focus on childhood in autism research, little is known about experiences specific to adulthood, such as employment (Bennett & Goodall, 2016). Furthermore, the research that has been conducted in this area has been scattered throughout various research disciplines resulting in a lack of consensus and clarity. Additionally, the research tends to focus on specific questions, such as the challenges faced by autistic individuals during interviews (e.g., Chang et al., 2023), the implications of disclosing one's disability (e.g., Johnson & Joshi, 2016), and difficulties with social interaction and communication in the workplace (e.g., Lorenz et al., 2016). However, little research has examined the overall experiences of autistic individuals. Additionally, much of the research in this area has utilized qualitative methodology, especially when examining the challenges faced by autistic individuals in the workplace. Although these qualitative studies have

provided much needed insight into the experiences of autistic individuals, they are limited in their ability to investigate why those experiences occur and how to ameliorate them.

Furthermore, this literature has not yet been viewed through a career-span lens, which could help to aggregate the individual pieces of our understanding. Taking this broad approach to synthesize findings would highlight specific points in the career process that appear to present significant challenges for autistic individuals and offer a "big picture" view of their experiences. Furthermore, it is not yet known if common career theories appropriately describe the experiences of autistic individuals and, thus, a career-span view of the literature could offer important insight into whether career cycles are different for autistic individuals. Finally, the literature regarding the employment experiences of autistic individuals does not explicitly distinguish between those who require substantial or very substantial support (Level 2 or 3) versus those who require some support (Level 1). Distinguishing between these levels could have implications for the models or lenses utilized to evaluate autism in the workplace and what supports are needed.

In the current paper, I addressed these gaps and make several specific contributions to the existing literature on this topic. First, by conducting a scoping review of the relevant literature from various fields, I aggregated the findings into a cohesive understanding that can provide more direction and guidance for future research and practice than the individual studies alone. Additionally, I reviewed the literature within the context of a career-span framework using Super's (1990, 1994) life-span, life-space theory, which provides an effective way to organize the literature to understand the overarching experiences of autistic individuals across their lives. Utilizing this organizing framework also helped to highlight areas that are less frequently studied than others and general gaps in our understanding. Furthermore, in the current review, I

evaluated whether the phases of careers proposed by the life-span, life-space theory accurately describe the experiences of individuals with autism in their career, or whether a new or modified career theory is needed for the careers of autistic individuals. Finally, I examined whether it would be beneficial for a theory of careers of autistic individuals to differentiate between severity levels of autism diagnosis to better explain variance in challenges and supports needed.

### **CHAPTER II**

### **BACKGROUND**

## SUPER'S LIFE-SPAN, LIFE-SPACE THEORY

Super first articulated his conceptualization of careers as a lifelong process, rather than a single event that occurs when someone decides to enter the workforce, in the 1950s (Super, 1951, 1955, 1957). Super (1957) presented stages of careers to highlight the presence of careerrelevant goals across the life-span. Originally, the stages included Growth (birth-age 14), Exploration (age 15-24), Establishment (age 25-44), Maintenance (age 45-65), and Decline (age 65 and on). However, in later revisions (Super, 1990), Super altered these stages to be a series of shorter stages that were less likely to be tied to specific ages to account for the idea that individuals can cycle and recycle through the career stages at various points in their lives. Thus, the career stages currently represent certain developmental tasks or goals that may occur at different times in one's life, and may not occur sequentially (Super, 1994). The Growth stage includes goals such as developing one's interests and self-concept, developing general skills, and recognizing one's limitations. The Exploration stage involves learning more about opportunities, identifying opportunities that are desired, and exploring new tasks to work on. The Establishment stage includes getting started in a chosen career, developing new skills and abilities in the new role, and finding stability in a new role. The Maintenance stage involves goals relating to advancing to new levels in one's field, finding security in one's role, and maintaining competitive advantage. Finally, the Decline stage (also termed Disengagement, referred to in this manner henceforth) involves moving toward retirement, reducing work hours, and focusing on essential work functions (Super, 1994).

The life-span, life-space theory is useful for examining the career- and work-related challenges faced by autistic individuals because it provides a broader and more comprehensive view of the development of careers across the lifespan than other career theories (Stamp, 2020). Other common career theories focus on general and gradual changes to an individual's goals or perspective on work that occur as they age. For example, the selection, optimization, and compensation theory (Baltes & Baltes, 1990) proposes that, as people age and their abilities change, they use adaptive strategies (i.e., selection, optimization, and compensation) to remain fitted to the demands of their job. Although it could be illuminating to examine whether autistic individuals utilize these same strategies as they age, this is a question that should be addressed by future research once more basic questions regarding the careers of autistic individuals are answered. The career trajectories of autistic individuals have yet to be explored in general, let alone the unique interaction between autism and age in the workplace. Therefore, the groundwork must first be laid to understand the general career patterns characteristic of autistic individuals before more targeted questions can be answered. The life-span, life-space theory provides a framework to lay this groundwork by focusing on the overarching process of careers. This broad perspective on careers is useful as a framework for this scoping review that aims to evaluate broad patterns of the literature.

Furthermore, the life-span, life-space theory acknowledges the impact of the environment and culture on one's career trajectory (Super, 1980). Research has suggested that the limited understanding of the careers of autistic people may stem from their not following a "traditional" career path (Hurley-Hanson et al., 2020). This could be in part due to the stigma and stereotypes associated with autistic individuals, and the impact of these stigmas on the perceptions and decisions of influential people such as hiring managers and supervisors (Carrero et al., 2019;

Hurley-Hanson et al., 2020). It is thus critical to examine the careers of autistic individuals using a theory that can incorporate both individual factors such as self-efficacy and executive function, as well as environmental influences, which both may differ for autistic individuals compared to neurotypical individuals (Carrero et al., 2019; Johnston-Tyler & Analla, 2015). The life-span, life-space theory acknowledges that career development is influenced by one's self-concept as a method of determining a fit between one's interests and abilities and a career field (Super, 1990). This perspective comes from differential psychology, which focuses on the individual differences between people that influence the person-environment fit in one's job or career (Hartung, 2013). In turn, an acceptable match between the person and the occupation results in satisfaction and success in one's career (Dawis & Lofquist, 1984; Holland, 1973). At the same time, the theory incorporates the influence of the context in the development of one's career and how and when one moves between stages (Super, 1980). In fact, the individual's outcomes are viewed as influenced by equal parts individual traits and society or contextual factors such as the labor market, societal values, and policies (Hartung, 2013; Super, 1980). Thus, the life-span, lifespace theory is well-suited to evaluate both the individual difference and contextual factors that may impact the career trajectories of autistic individuals.

Finally, the life-span, life-space model has important practical benefits. The model provides counselors or coaches a method for assisting individuals with career planning, exploration, and decision making (Savickas, 2005). First, counselors can help the individual identify career paths that are well matched to their personality and interests to ensure optimal fit and satisfaction (Hartung, 2013; Parsons, 1909). For autistic individuals specifically, it could also be beneficial to receive assistance finding careers or organizations that fit their unique circumstances (e.g., focus on independent work, low-stimulus work environments; De Vries,

2021; Dipeolu et al., 2015). Second, using the career stages as a framework, counselors can determine which stage the individual is in, and assist with finalizing the goals in their current stage and advance to the next stage (Hartung, 2013). For example, if an individual is in the Exploration stage, the counselor can provide support with completing applications, formatting resumes, and preparing for interviews. This practical support can be especially important for autistic individuals who are often ill-equipped to transition between stages in their career, such as from college to the working world (Dipeolu et al., 2015; Meeks et al., 2015), or from working to retirement (Mahon et al., 1995).

In sum, the life-span, life-space theory is a useful framework for the goals of the current review because it examines broad, overarching patterns of careers, incorporates both individual influences and environmental influences on career trajectories, and provides practical support methods. These features are well-suited for a scoping review and for the unique circumstances of autistic individuals regarding work.

## **RESEARCH QUESTIONS**

In the current review, I utilized Super's career stages as a framework through which to examine the challenges faced by autistic individuals in the work domain across their lives.

Specifically, in this review, I addressed two broad research questions detailed below.

Research Question 1. The first research question addressed the challenges that autistic individuals face in each of the five career stages. Additionally, I explored any empirically supported interventions or facilitators that ameliorate the identified challenges. For clarity, operationalizations of the career stages and what each encompassed were established. For the current review, the Growth stage included topics such as college as career preparation, employment services that teach general skills useful in the workplace (e.g., social

communication skills, time management skills), and developing career interests and goals. The Exploration stage included topics such as job searching, application preparation, recruitment, selection assessments, and interviews. Although the next two stages, Establishment and Maintenance, could both be argued to include typical work-related outcomes (e.g., job performance, job satisfaction, turnover), I kept these stages separate by not including such outcomes in both stages to maintain parsimony and clarity. Thus, the Establishment stage included early-career-related topics, such as socialization, training, and relationship building. The Maintenance stage included common work-related outcomes such as job performance, organizational commitment, burnout, engagement, promotion, and turnover. Finally, the Disengagement stage included any topics related to retirement, or working fewer hours as one reaches later stages in one's career.

Research Question 2. The second research question took a high-level view of the literature as sorted into Super's career stages to determine if this model of careers accurately describes the experiences of autistic individuals across their career span. In the process of addressing Research Question 1, I determined if this common career theory was suited for this sample, or whether alterations to the theory needed to be made, such as by combining, dropping, or adding stages. One specific modification that I investigated was whether the literature supported distinguishing between the career experiences of those with a Level 1 severity autism diagnosis and those with a Level 2 or 3 autism diagnosis. It is likely that the severity level of the individual's autism diagnosis impacts the amount and type of challenges they face, the supports they would need to meet their career goals, and the trajectory of their career over their life. Thus, this distinction may be a necessary inclusion in a model of the career span for autistic individuals.

### **CHAPTER III**

## **METHOD**

In the current review, I utilized the six-step process for conducting scoping reviews outlined by Arksey and O'Malley (2005). In this chapter, I first describe the differences between systematic reviews and scoping reviews, and why I selected the scoping review method to investigate this topic. Next, I outline each step of Arksey and O'Malley's (2005) six-step process for scoping reviews, and each step is applied to the current review.

## **OVERVIEW OF SCOPING REVIEWS**

Scoping and systematic reviews are two methods for synthesizing the literature on a specific topic and answering research questions (Arksey & O'Malley, 2005). However, these two methods have subtle differences. Systematic reviews typically focus on a narrow set of studies to examine specific research questions, while scoping reviews are broader and examine a larger amount of research (Munn et al., 2018). Scoping reviews are useful for emerging evidence when more specific reviews have not yet been conducted (Armstrong et al., 2011), or to examine higher-level questions about a literature such as how research is conducted, how concepts are defined, or what gaps in investigation remain (Munn et al., 2018). Given the broad focus of the current review of the entire career span, a scoping review would be more appropriate to answer the research questions. Thus, I used scoping review methodology to conduct the current review.

## THE SIX-STEP PROCESS UTILIZED FOR CURRENT SCOPING REVIEW

I utilized the approach for conducting scoping reviews that was proposed by Arksey and O'Malley (2005) for the current review. This methodology includes the six steps outlined below.

## **Formulating Research Questions**

The first step in Arksey and O'Malley's approach is to formulate the objectives of the review by outlining clear research questions. The overarching goal for the current scoping review was to organize the current knowledge regarding the challenges faced by autistic individuals in the workplace into a career framework, and evaluate whether Super's (1990, 1994) career stages appropriately describe the career experiences of this population of individuals. I utilized several specific research questions to achieve this goal:

**Research Question 1a-e:** What are the experiences and challenges faced by autistic individuals in the A) Growth, B) Exploration, C) Establishment, D) Maintenance, and E) Disengagement phases of Super's life-span, life-space model?

**Research Question 1f:** What are the empirically supported interventions or facilitators that ameliorate these challenges?

**Research Question 2a:** Does Super's theory represent the career experiences of autistic individuals?

**Research Question 2b:** If not, what career stages would better reflect the experiences of autistic individuals?

**Research Question 2c:** Does the existing literature support utilizing separate career frameworks for autistic individuals with a Level 1 autism diagnosis versus a Level 2 or 3 autism diagnosis?

## **Identifying Relevant Studies**

The second step in Arksey and O'Malley's framework is to outline and conduct an approach for locating relevant literature. This approach should include details regarding which

sources will be searched, which search terms will be utilized, and the inclusion and exclusion criteria for retaining cases for the review.

To locate studies to be included in the current review, I conducted searches within EBSCOHost (all databases), Google Scholar, Pubmed, and ProQuest Theses & Dissertations. I utilized the following search terms: autism OR asd OR autism spectrum disorder OR asperger's OR asperger's syndrome OR autistic disorder OR aspergers AND work\* OR occupation OR employ\* OR job OR career in the article's title. Additionally, hits that included the words child\* OR parent\* OR mother\* OR father\* OR sibling\* OR "working memory" OR "social work" OR "occupational therapy" in the title or abstract were excluded from the search, as these search terms were producing search results that were irrelevant to the research questions. Further, I conducted an initial prescreening of the search results to exclude studies that were duplicates or obviously not relevant to this review, such as studies that reviewed the work of Dr. Asperger, examined the careers of individuals working with autistic patients or researching autism, or contained the search terms in the title in non-relevant ways (e.g., "what works"). These searches yielded a total of 536 citations for further review.

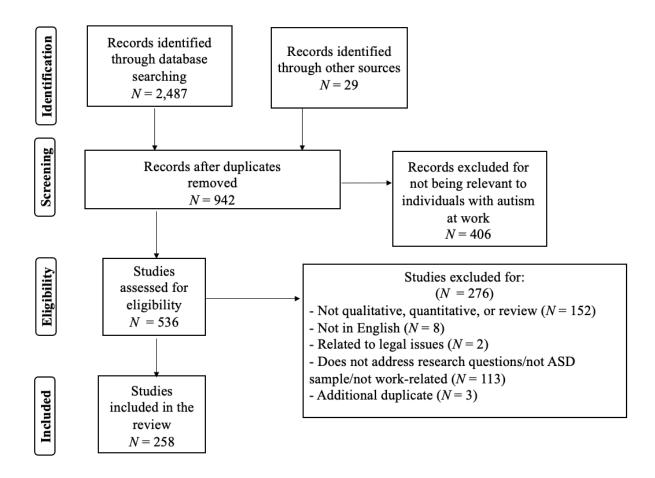
## **Study Selection**

The next step in the scoping review process is to select the studies that will be included in the review from the list of hits generated in the literature search. There are many different methods for selecting studies to review. Given the large amount of hits returned in the literature search, I utilized the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) method to determine included studies. As mentioned in the previous section, some exclusions were made during the search process, and thus Steps 1 through 3 in the PRISMA process were completed in the previous step of the scoping review. Step 1 of the PRISMA

process is the identification phase in which searches are conducted within the databases of interest, as explained above. Step 2 involves removing duplicates that are returned across the various databases. Step 3 involves screening returned records for basic exclusion criteria, such as the obviously irrelevant studies as noted above. Next, Step 4 includes assessing all remaining articles for eligibility. In this step, I evaluated each record to determine its relevance to any of the proposed research questions of the current review by utilizing several inclusion and exclusion criteria. The inclusion criteria included papers that utilized qualitative or quantitative methodology and review papers. Qualitative studies were included in the current review because this research area is still in early, developmental stages, and thus many of the findings are qualitative in nature and excluding these studies would exclude critical information. The exclusion criteria included not being in English, being related to workplace legal issues, not addressing a challenge or facilitator in employment for autistic individuals, not being work related, and not using an autism-specific sample (for example, some studies utilized a combined sample of neurodiverse individuals, and thus autism-specific experiences could not be ascertained). Finally, Step 5 in the PRISMA process involves finalizing the number of studies to be included in the review. After the exclusions were made, a final sample of 258 papers were retained for review. This PRISMA process for determining the final sample of papers is detailed below in Figure 1.

Figure 1

PRISMA Flow Diagram



# **Charting the Data**

The fourth step in the scoping review process is to extract the relevant data from the studies that were deemed relevant for answering the research questions. Each record was coded for general information about the study and sample, including the sample size, average age of the sample, year of publication, proportion of females in the sample, severity of autism diagnosis of the sample, country of data collection, type of publication (qualitative, quantitative, or review paper), and publication status (published or unpublished). Information relevant to the research

questions was also collected, specifically any challenges and interventions/facilitators reported in the study. The coding process was separated by career stage (i.e., Growth, Exploration, Establishment, Maintenance, Disengagement) to facilitate the transition into the fifth step in the scoping review.

# Collating, Summarizing, and Reporting Results

The fifth step in the scoping review process is to collate, summarize, and report the results collected in the previous step. This step involved reviewing the coded results and interpreting them in regard to the research questions. The findings for each of the research questions and their subparts are discussed below in the Results section.

## Consultation with Stakeholders about the Results of the Scoping Review

The sixth and final step of Arksey and O'Malley's framework is to present the findings to external stakeholders. This is an optional step, given that not all research involves external stakeholders such as organizations. Given that there are no external stakeholders to consult in the current study, this step was not completed.

#### **CHAPTER IV**

#### RESULTS

In this chapter, I present the results of the scoping review organized by career phase. The challenges for each phase are reported first, followed by the facilitators or supports. At the end of each section, I summarize the main findings for the career phase.

## **RESEARCH QUESTION 1**

#### Growth

The Growth stage of Super's (1994) life-span, life-space theory is a pre-job search phase that includes developmental goals such as developing general work skills, developing one's self-concept, discovering one's interests, and recognizing one's limitations. In the current review, this phase included topics such as career preparation in high school and college, and employment services before one is actively looking for a job. Below are the noted challenges and facilitators in this phase.

## **Challenges**

High School Challenges. The reviewed studies reported several challenges for autistic individuals in high school. Overall, the studies reported that autistic participants felt that high school did little to prepare them for employment (Marco, 2007) due to many shortcomings of the high-school environment (Zatz, 2023). First, there is a reported lack of individualized focus in programming for autistic high-school students (Marco, 2007; Zatz, 2023), with the focus of specialized education programs being on a broad range of disabilities (Marco, 2007).

Additionally, there are often too few educators and support staff with appropriate training (Harris, 2015; Marco, 2007), and a lack of accommodations or needed resources, such as availability of needed classes, to be successful in meeting their academic and career goals

(Harris, 2015). Furthermore, several papers noted the need for more opportunities to practice social skills (Zatz, 2023) and other specific employment skills (Harris, 2015; Zatz, 2023). Social skills are a commonly reported barrier in this phase (Harris, 2015), as well as difficulty understanding the social expectations in the classroom (Marco, 2007) and being excluded or bullied by peers (Harris, 2015; Marco, 2007). Other noted difficulties in the high-school setting included lack of communication between parents and teachers (Zatz, 2023), and auditory overload in the school setting (Marco, 2007). The need for accommodating and supportive high-school environments was noted as critical, given that high-school diploma status affects career goal attainment, and many autistic high-school students reported needing to access college in order to meet their career goals as well (Harris, 2015). Thus, it is crucial that high-school environments fit the needs of autistic students and provide them the necessary support to achieve their individualized goals.

Transitioning from High School. Relatedly, many papers explored the challenges faced by autistic individuals as they transition from the high-school environment to post-secondary education or employment settings. First, studies reported skill or knowledge gaps of autistic individuals coming out of high school that can hinder their ability to secure employment or college admission. Among these were difficulty with self-advocacy (Stello, 2019), social skills and understanding social cues (Marco, 2007; Stello, 2019), difficulty setting realistic goals for the future (Lewis, 2016), and difficulty with organization (Marco, 2007).

Second, Marco (2007) noted several cognitive and behavioral difficulties that are common for autistic individuals that have an impact on their transition from high school to post-secondary education or employment. Cognitive ability itself impacted ability to transition to employment or post-secondary education, as well as specific cognitive difficulties such as strict

adherence to routine, lack of initiative, speech delays, impulsivity, low threshold for anger and frustration, and rigid thinking. Additionally, the behavioral challenges of making noises and echolalia (i.e., repetition of words or phrases) were also impactful for successful transition.

Past reviews and other primary studies also reported shortcomings of transition services for autistic individuals (Bhuiyan et al., 2022; Stello, 2019; Wei et al., 2015). Transition services from high school to post-secondary education were noted as especially lacking, as many support services are focused on vocational skills and do not address goals related to post-secondary education (Bhuiyan et al., 2022). This is impactful because selecting colleges to which to apply comes with additional considerations beyond typical considerations (e.g., size, cost, location) for autistic individuals, such as securing accommodations and support, acquiring skills for independent living, and whether to disclose one's diagnosis (Bhuiyan et al., 2022).

Studies also noted that autistic individuals may "age out" of support services targeted toward high-school students but still need support to live independently, attend college, or work (Lewis, 2016). Furthermore, there are often inclusion criteria for receiving support services, such as specific ranges of cognitive ability, age, adaptive functioning level, or achievement levels, and this can prevent individuals from obtaining support they may need (Lewis, 2016). Specifically, it was noted that autistic individuals who do not also have an intellectual disability may have unique difficulty obtaining support services, as they may not qualify for the support services that are available (Taylor & Seltzer, 2011). There may also be limited space in support programs, and different programs may have different levels of support or access to different types of staff (e.g., speech and language therapists, occupational therapists; Lewis, 2016). Furthermore, family resources and socioeconomic status can impact availability of support, such that support programs can be costly and may be located far away from the family's home (Lewis, 2016).

Additionally, poor communication between service providers and school or employer can negatively impact the effectiveness of acquired supports (Stello, 2019).

College Challenges. There is also a large focus in the literature on the challenges autistic individuals face specifically related to attending college. A past review noted that the dramatic shift in daily life when starting college can be very stressful for autistic individuals (Bhuiyan et al., 2022). Parental involvement often declines in college, leading to a decrease in support they used to have (Bhuiyan et al., 2022), which can lead to decreases in self-care and health (Stanley, 2020). The switch from living at home to living independently or with roommates can also be very difficult for autistic individuals (Lewis, 2016). Additionally, as noted by past reviews and other primary studies, the fluctuating structure and routine of college is often noted as stressful for autistic students (Cashin, 2018; Stanley, 2020), including the independence required for registering for classes (Lewis, 2016), classes not taking up the entire day and taking place at different times on different days (Lewis, 2016), and being responsible for managing one's own time and priorities (Stanley, 2020). In fact, many students report success with learning the coursework in college while struggling with the non-academic aspects, including executive functioning, study skills, time management, and navigating the social environment (Gelbar et al., 2015). Large lectures can also be difficult for sensory over-stimulation (e.g., small noises, people talking, bright lights; Lewis, 2016; Stanley, 2020), attention issues (Lewis, 2016), and information processing (Stanley, 2020). It can also be difficult for autistic students to keep track of assignments and deadlines, keep up with the workload of multiple classes, approach and communicate with their professors, study for and take exams, and complete administrative tasks required to fulfill academic requirements (Stanley, 2020).

Additionally, a past review noted that the lack of structure in college compared to high school makes it more difficult for support services to exist and be consistent, and thus many of the supports that were available in high school are not available in college (Bhuiyan et al., 2022). There is also more responsibility on the individual in college to secure their own support needs (Bhuiyan et al., 2022; Bruce, 2014; Stello, 2019), and this can often lead to autistic individuals not getting the supports needed due to not knowing what supports are available, not knowing what questions to ask about supports (Briel & Getzel, 2014), or simply being admitted to a college that does not have necessary support and resources (Bruce, 2014). Autistic students may struggle to know when and how to ask for help, how to disclose their diagnosis to their professors, and how to stand up for themselves (Stanley, 2020). Furthermore, colleges often do not pay specific attention to the goals and progress of autistic students and are often unaware if autistic students are graduating and finding jobs after graduation (Bruce, 2014). Additionally, policies and procedures are often generalized for students with disabilities at large and these policies are often not well known by college staff and faculty (Bruce, 2014).

Another important theme of the literature is the increase of social interactions in college, and the change to social situations, expectations, and norms (Bhuiyan et al., 2022; Stanley, 2020). College often includes more peer contact than high school due to communal living arrangements and the emphasis on peer relationships in the college environment (Bhuiyan et al., 2022). Social challenges can also have an impact on their academic success by impacting their success in work groups for class assignments and study groups (Stanley, 2020), as well as their mental health by leading to isolation and loneliness (Cashin, 2018; Stanley, 2020). Furthermore, social struggles can also impact career outcomes by limiting professional connections and networks and integration into the community (Stanley, 2020). One primary study also reported

that higher social stress was associated with overall career decision-making difficulties, and specifically with having a lack of or inconsistent career-related information (Farrow, 2016).

The literature also reports several challenges with the transition from college to employment. Studies reported autistic students not learning career- or work-specific skills in college (Cheriyan et al., 2021), having a general lack of career-related information relevant for career decision-making (Farrow, 2016), and being mistakenly advised to pursue technology fields (Gelbar et al., 2015). Additionally, autistic students often report not knowing what kind of work they want to do (Coleman & Adams, 2018). Thus, more support appears to be needed to ensure that experiences in college relate to an appropriate path to employment following graduation.

Challenges with Support Services. Although support services have been a consistent theme throughout the previous sections, several studies examined support services in general and reported several limitations. A previous review noted that, despite recent changes to vocational rehabilitation services to focus more on autistic transition-aged youth (i.e., youth near the end of their high-school career), post-secondary outcomes for autistic individuals have not changed substantially, and this is likely due to a lack of understanding of best practices for using vocational rehabilitation services to assist autistic transition-aged youth (Baker-Ericzen et al., 2022). Primary studies also noted an overall lack of availability and accessibility of support services (Micai et al., 2022). Studies also reported group differences in receiving support services, such that Asian Americans (Lee, 2021), students in general (compared to non-student youth and young adults) and female students in particular (Roux et al., 2021) were less likely to receive support services.

Studies also noted limitations in the types of services available. Roux et al. (2021) noted a lack of support services that address social communication, relationships, sensory sensitivities, job matching, and employer stereotypes regarding autism. In a meta-analysis of single-case design research on employment interventions for high-school students, the author noted that none of the included interventions taught personal care skills or critical thinking skills (Rooks, 2023), which they highlight is problematic given that these skills are often highly valued by employers (Ju et al., 2012) and considered barriers for employment for autistic individuals (Chiang et al., 2013). Finally, a study examining those working in supported employment found that those who worked in sheltered workshops prior to gaining supported employment earned less in their supported employment role and cost more to support (Cimera et al., 2012), suggesting that sheltered employment can diminish future outcomes once they obtain employment in the community.

## **Facilitators**

High School Facilitators. Several studies examined supports or facilitators during high school that can ameliorate the challenges faced by autistic students and improve education and employment outcomes. In general, Marco (2007) found that school services and vocational services were both significant predictors of autistic students obtaining employment after high school. Social skills training was one support that was frequently mentioned as a useful support for autistic high-school students (Harris, 2015; Marco, 2007), as social skills are critical for career goal attainment (Harris, 2015). Studies also mentioned the importance of learning independent living skills (Marco, 2007), such as household chores and cooking skills (Zatz, 2023).

Many studies also noted the importance of vocational and career training while in high school. A past review (Bennett & Dukes, 2013) examined the effectiveness of different methods used to teach employment skills to autistic high-school students. The skills taught included following directions, managing tasks, and job-specific skills (e.g., cooking, performing in airinflated mascot suits). Results from the included studies suggested that methods that taught selfmonitoring abilities showed positive effects, including video modeling, picture and video prompting, token systems, behavior skills training, auditory prompting, feedback, video rehearsal, Personal Digital Assistant (PDA) prompting, and error correction. Other primary studies reported the utility of vocational education that includes a hands-on approach or options to try out different jobs (Marco, 2007), career and technical education programs that teach technical, life, and job skills that are transferable to other courses and employment settings (Gogan, 2017), and community-based programs such as work-study programs (Braudis, 2017; Marco, 2007) to provide additional work experience. Additionally, community field trips and job site practice can be useful for additional exposure to potential career options (Zatz, 2023), and job coaches and on-the-job support was noted as useful to help autistic students gain employment opportunities during high school and maintain success throughout their employment (Marco, 2007). Autistic students also reported the desire to have special programs or assistance with preparing for their career goals while in high school (Harris, 2015), transition planning assistance (Marco, 207), and help with writing resumes and practicing interviewing skills (Braudis, 2017).

Several supports for academic success were also reported in the included studies. First, accommodations and supports for academics can be useful for promoting academic success (Harris, 2015), such as using special interests to support academics (Harris, 2015), programs for autistic students in particular (Braudis, 2017), appropriately challenging classes and curriculum

(Harris, 2015), small class sizes (Harris, 2015), and one-on-one instruction when available (Zatz, 2023). Additionally, increased understanding (Marco, 2007) and training (Harris, 2015) for staff, teachers, and administrators regarding autism is critical for the success of autistic students, as well as flexibility in teachers, administrators, and school policies in regard to autistic students' learning and achievement (Harris, 2015). One primary study also found parent participation in the student's education to be important for education and employment outcomes for students regardless of their daily functioning skills (Wong, 2019). For students with higher daily functioning skills, academic performance mediated between parent participation and education and employment outcomes, and for students with lower daily functioning skills school-based transition supports mediated between parent participation and employment outcomes (Wong, 2019).

Facilitators for Transitioning from High School. Several past reviews (Anderson et al., 2020; Baker-Ericzen et al., 2022; Barbaro & Shankardass, 2022; Bennett & Goodall, 2021; Bhuiyan et al., 2022; Cashin, 2018; Hedley et al., 2017b; Whittenburg et al., 2020b) have examined interventions for autistic individuals during the transition to employment after high school. The findings from these past reviews will be summarized here, but the interested reader is encouraged to consult these past reviews directly for a more in-depth look at the various interventions examined. Baker-Ericzen et al. (2022) reviewed interventions at the service system level, at the provider and consumer level, interventions within vocational rehabilitation or education settings, interventions using virtual technologies, and community-derived programs. Overall findings suggested that while intensive interventions at the service system level, including transition-to-work internship programs and personalized job placement and support programs, can be effective, they are also time, cost, and labor intensive to administer. Skill-based

interventions that aim to improve cognitive, social, and adaptation skills have also been found to be effective, but these interventions are often not conducted in a workplace setting (instead often conducted in educational or clinical settings) or not connected to workplace outcomes, so their efficacy for workplace use is still largely unknown.

Several reviews (Bennett and Goodall, 2021; Bhuiyan et al., 2022; Whittenburg et al., 2020b) reviewed interventions aimed at improving work-related social skills, cognitive abilities, and vocational skills. The types of interventions examined included group-based/curricular approaches, virtual reality approaches, peer-mediated approaches, behavioral skills training approaches, larger intervention packages, and use of visual schedules. Together, the findings suggested that all of these methodologies were successful, and across these different methodologies, several key elements emerged that led to successful outcomes, including discussion or explanation of social skills, work-related examples of social skills, direct instruction regarding social skills, role plays and rehearsals, feedback on performance, and small group activities. Additionally, the use of visual cues through physical text or picture prompts or technology supports also proved useful.

Several other facilitators that are not formal interventions also emerged from the literature. Lewis (2016) noted several factors about the autistic individual that can lead to a successful transition, including having an adult identity; having independent living skills; having vocational skills or skills for college; having social, communication, and emotional skills; having a family that is supportive and knowledgeable about the transition; and knowing about human sexuality. Based on these factors, the author proposed that interventions for the transition out of high school should be aimed toward independent living by teaching skills needed to live on one's own (e.g., laundry, cleaning, cooking, small home repairs, grocery shopping, managing finances,

transportation), social and communication skills (e.g., dating, self-advocacy, phone skills, public speaking, language norms), identity skills (e.g., knowing strengths and weaknesses, problem-solving, confidence), community involvement (e.g., volunteering, going to events, visiting common local places like grocery stores, coffee shops, libraries), and sexual education (e.g., safe sexuality, appropriate and inappropriate sexual relations, pregnancy and birth control).

Furthermore, the author suggested that the best practices for a transition program includes using a framework as guidance, providing a structured and predictable learning environment, generalizing skills to real-world environments, partnering with community entities, and collaborating with parents.

High-school educators and administrators also have an important role to play in the transition of autistic students. Receiving career counseling while in high school can increase the odds of participating in employment for autistic individuals by 5.7 times (Chiang et al., 2013). Additionally, having high social skills can increase the odds by 5.4 times (Chiang et al., 2013), thus it is critical for high schools to teach social skills to autistic individuals. High schools can also contribute to successful transition for autistic individuals by utilizing effective evaluation processes; fostering communication between parents and administrators; utilizing intentional planning that gears studies toward their strengths; utilizing documented transition planning and starting planning early; surrounding the student with experienced staff who understand them; providing more comprehensive training for the student (including social skills and communication, life skills, speech therapy); fostering collaboration between the school, family, and service agencies; integrating the student into inclusive activities and mainstream elective classes; and providing hands-on vocational training, work study, community experiences, real job experiences, and job try-outs (Marco, 2007). Work study is an especially critical opportunity,

as an autistic individual is twice as likely to be employed if they were in work study in high school (Feldman-Sparber, 2015). High-school educators should prioritize assisting autistic students to graduate, as the odds for participating in employment are 7.5 times larger if the autistic individual has a high-school degree (Chiang et al., 2013). Thus, educators should strive to provide students with specialized education plans, career counseling, information about graduation requirements and degree options, and information about other vocational training if they do not graduate (Chiang et al., 2013).

When transitioning to employment following high school, job placement services can increase odds for gaining employment, although many autistic individuals do not receive these supports (Migliore et al., 2012). Additionally, participating in internships during summer breaks while still in high school can help autistic students learn how to dress and behave in the workplace, find tasks that are a good fit for their skills and interests, gain confidence related to working, and develop work-related skills such as social skills, time management skills, and leadership skills (Lee et al., 2019).

There are several ways in which employers can support successful transitions for autistic individuals transitioning from high school. Employers can provide autistic individuals extra time to transition, such as by allowing extra time to learn the job and social skills needed and learn what it means to have a job and how to have a good work ethic (Dyke, 2008). Parental support is also critical for successful transition to employment. Parents can support their child by assisting them with job scheduling, interacting with the potential employer, and other employee issues that may arise (Dyke, 2008).

Specifically in the transition to post-secondary education, taking a majority of high school classes in general education classes (i.e., not special education) and participating in career

and technical education programs are also associated with attending post-secondary education (Feldman-Sparber, 2015). Additionally, Stello (2019) asked college professors what skills or abilities they believed would aid autistic students' transition to college. The most common skills reported were the ability to work in a team or group to solve problems; ability to communicate with faculty either verbally or through written channels; understanding the purpose of a syllabus; careful selection of which classes to register for based on size, location, time of day, and subject; self-advocacy; time-management skills; independence in thinking and writing; concentration skills; academic and emotional adaptation; taking responsibility; being punctual; and organization skills. Thus, for autistic students who wish to attend college, instruction and guidance regarding these critical skills would be useful in high school to ensure they are prepared for the college environment.

College Facilitators. Once the student has entered college, there are several noted supports that can facilitate their goal achievement. Many studies reported autistic college students' desire for more support with developing social skills (Briel & Getzel, 2014), such as guidance in making friends (Briel & Getzel, 2014; Stanley, 2020) and getting along with classmates (Stanley, 2020), semi-structured (Gelbar et al., 2015) and sensory-friendly social opportunities (Stanley, 2020), as well as social skills workshops, help with conflict mediation, and how to report stalking or harassment (Stanley, 2020). Students also desired more assistance with cognitive skills, such as more structure and assistance with developing new routines, assistance with staying organized, help with developing and sticking to a study plan, help with time management, and receiving information about course schedules in advance (Stanley, 2020). Additionally, students wanted more guidance regarding how to solve problems, manage stress, make decisions, and set goals (Briel & Getzel, 2014).

Studies also discussed ways in which autistic students could be better supported in academics. Cheriyan et al. (2021) noted that writing skills and detail orientation helped autistic students in their courses, thus specific assistance with these skills would be beneficial.

Additionally, several class-related accommodations can help students thrive in their courses, such as smaller class sizes (Stanley, 2020), note-taking services (Gelbar et al., 2015; Stanley, 2020), extended time to complete assignments and tests (Gelbar et al., 2015; Stanley, 2020), and receiving copies of slides, written instructions for assignments, summaries of the lectures, audio recordings of the lectures, or subtitles for video lectures (Stanley, 2020). Additionally, autistic students would benefit from more flexibility around missing classes, being able to take breaks or not participate when overstimulated, having special accommodations for group work, and being able to take exams in a private place (Stanley, 2020).

The literature also noted several supports for improving the health and well-being of autistic college students. For mental health, colleges and universities could provide autism support groups and other social supports, and accessible counseling or therapy specifically for autistic students (Gelbar et al., 2015; Stanley, 2020), as well as providing excused absences from classes for mental health reasons (Stanley, 2020). To support the physical health of autistic students, schools should provide student healthcare services, exercise options that are non-social and sensory-friendly, sensitivity- and allergy-friendly food options, and regularly scheduled times for eating (Stanley, 2020). Additionally, Stanley (2020) proposed several environmental supports, including rooms that are sensory-friendly for decompressing and/or studying, less noise in general around campus, allowing the use of headphones to manage noise, acceptance around fidgeting or stimming when needed, and access to housing that allows living alone, does not rely

on making friends to have people to live with, is quiet, and is accessible to campus using their preferred transportation method.

Finally, there are several accommodations and supports at the university level that can be used to support autistic students. First, a general culture of inclusion and support of autistic individuals on campus is important for student success (Gelbar et al., 2015). This can be facilitated by fostering a culture of understanding and kindness and taking inclusive and accepting stances regarding autism and neurodiversity at large (Stanley, 2020), welcoming autistic students to campus (Gelbar et al., 2015), and promoting greater awareness of autism on campus (Stanley, 2020). Similarly, faculty members play an important role in the success of autistic students. Autistic students are more likely to disclose their disability to faculty members and ask for help when they are comfortable with their instructors (Gelbar et al., 2015), thus faculty who are understanding of and trained on autism, and who treat autistic students with caring and consideration, can be a great resource for ensuring the success of autistic students (Stanley, 2020). Students also note the utility of having a peer or professional mentor as a point person, having help getting familiarized with campus, getting help finding classes to register for, and having access to support services who listen to them, provide recommendations for what help to ask for, and take their word on what support they need (Stanley, 2020).

There are also ways in which the transition from college to employment can be facilitated. It is important to support college as a career-preparation activity because post-secondary education is one of the most important predictors of gaining employment, earning higher salaries, and working more hours (Migliore et al., 2012; Sung et al., 2015; Whittenburg et al., 2019). Participating in internships and paid employment during college, as well as receiving work training, can be important for successful transitions to employment (Papay et al., 2023).

Not only do these opportunities provide valuable work experience, they also help the student solidify their interests and clarify the path they want to take (Briel & Getzel, 2014). Furthermore, talking with family members, college faculty, and career counselors, and following their interests toward a career can also help with choosing a career path and major (Briel & Getzel, 2014). Career centers on a college campus can also provide assistance with connecting the student with job shadowing and internships or providing information in their career exploration process (Briel & Getzel, 2014). Additionally, rates of competitive integrated employment for autistic college students increases as age increases (Lee, 2021), thus younger students may need additional support to make the transition to employment. One study examined the use of video modeling in a virtual learning environment for teaching work-related problem-solving skills, finding that the method was highly effective and that the skills were maintained later in an actual work setting (Oliech, 2023). Autistic students have noted their desire for assistance with resume development, practicing interview skills, and guidance on job search strategies (Briel & Getzel, 2014; Stanley, 2020), as well as additional information on the Americans with Disabilities Act and what accommodations to ask employers for (Briel & Getzel, 2014). Students also wished for help and information about networking, how to get letters of recommendation, transitioning to graduate school, how to act on the job, how to manage the day-to-day challenges in the workplace, and different career options and how to achieve them (Stanley, 2020).

Support Service Facilitators. Finally, the literature noted several general support services that can facilitate goal achievement in the Growth phase. Several vocational rehabilitation services were noted to impact employment rates, including on-the-job support (Kaya et al., 2016; Sung et al., 2015) and job placement services (Kaya et al., 2016; Sung et al., 2015), as well as job search assistance, vocational counseling and guidance, job readiness training, vocational

training, and rehabilitation technology (Kaya et al., 2016). Additionally, Sung et al. (2015) noted gender differences in effectiveness of vocational rehabilitation services, such that counseling and guidance and other services such as programs for obtaining occupational licenses, tools and equipment, and medical care for acute conditions were more effective for autistic men.

Additionally, they found that both genders achieved more employment success when they were enrolled in vocational rehabilitation services for shorter timeframes (Sung et al., 2015).

Meanwhile, Kaya et al. (2016) found that those who received a greater number of vocational rehabilitation services and did not receive Social Security disability benefits showed better vocational outcomes, and Whittenburg et al. (2019) found that the vocational rehabilitation services that were provided to those with post-secondary educational experience were most cost-effective and cost-efficient.

## Summary of Growth Phase

The Growth phase included challenges and facilitators related to high school, college, and the transitions between high school, college, and employment. Table 1 provides a synthesis of which challenges and facilitators have strong, moderate, and limited evidence in the literature.

**Table 1**Summary of Growth Phase Findings

	Challenges	Facilitators
Strong Evidence	<ul> <li>Transitioning from High School</li> <li>College Challenges</li> <li>Support Services</li> </ul>	<ul> <li>High School Facilitators</li> <li>Transitioning from High School (to Employment) Facilitators</li> <li>Transitioning from College Facilitators</li> </ul>
Moderate Evidence	• None	• None
Limited Evidence	High School Challenges	<ul> <li>Support Services Facilitators</li> <li>Transitioning from High School (to College) Facilitators</li> </ul>

Overall, the literature provides the most evidence for challenges and supports related to the transition from high school to employment. This transition is an important yet challenging milestone during the Growth phase, and thus should be an area of focus for those who support autistic individuals. During high school, educators and support staff should prioritize vocational and life skills training, work experiences (e.g., work study, internships), and individualized education and transition planning to facilitate graduation. With support in these areas, autistic individuals can be set up for success when they are ready to transition from high school to

employment. Employers can also provide support during this transition by offering internships for autistic individuals, working with job placement services to hire autistic individuals after high school, and allowing extra time and support during their transition into the workplace. It is critical for both parties involved in this transition—high school staff and future employers—to be aligned and supportive to ensure a smooth transition for the autistic individual.

The literature also provides strong evidence for the challenges faced during college and the transition to employment after graduation. The main difficulties autistic students face during college relate to the increase in independence and lack of structure during college and increased social expectations. Thus, support that focuses on these two aspects during college would be effective and efficient for reducing some of the strain autistic individuals experience during college. Effective supports regarding structure and organization could include assistance from counselors with choosing and registering for classes, workshops on time management and organization skills, and professors providing additional structure around when and how coursework should be completed. Supports for the social aspects of college could include workshops to develop social skills, structured events for meeting others, and assistance with finding housing that meets their needs. Additionally, allowing flexibility and accommodation in classes can go a long way for autistic students. Many autistic students could benefit from flexibility around class participation and attendance, being allowed to take exams at different times or in different locations, or being allowed to opt out of group work. Professors should strive to promote open and continuous communication with students regarding the supports and accommodations they need and be willing to make adjustments to course expectations as needed to facilitate the success of autistic students.

The need for improved support services also received strong evidence in this phase.

Generally, more variety in services is needed, and better access to these services across demographic groups and levels of autism severity should also be improved. There is a specific need for better job placement services and vocational guidance and training to improve outcomes in the Growth phase.

The transition from high school to college is an area that could use additional research.

Although the current findings related to this transition may be useful for support staff, educators, or employers who wish to support autistic individuals, more research will be needed in this domain to provide better guidance.

## **Exploration**

The Exploration stage of Super's (1994) life-span, life-space theory includes pre-hire, active job search activities, and involves goals such as learning more about opportunities, identifying opportunities that are desired, and exploring new tasks to work on. In the current review, this phase included topics such as job searching, application preparation, recruitment, selection assessments, and interviews.

#### Challenges

Qualification and Preparation Barriers. One barrier for autistic individuals commonly noted when actively on the job market is lack of experience (Hedley et al., 2017a; Taylor, 2017) and limited or inconsistent job history (Lee et al., 2022; Mai, 2018). This can create a cycle of unemployment, such that going longer without being hired can make it more difficult to get hired and starting jobs but not being able to maintain them for long leads to fewer interviews for new jobs (Taylor, 2017). This can also create anxiety around applying for jobs and employment in general (Taylor, 2017). Additionally, studies also report difficulties with inadequate job

preparation (Braudis, 2017), lack of training and education (Taylor, 2017), and being either under- or over-qualified for the job requirements (Frank et al., 2018; Lee et al., 2022; Lorenz et al., 2016). Furthermore, a past review found that the impact of education level is ambiguous such that being more educated helps some find work but hinders others (Holwerda et al., 2012). Another review found that lower education usually limits employment opportunities for autistic individuals, but for those with lower severity diagnoses, having a post-secondary degree sometimes does not help to increase employment rates (Chen et al., 2015).

Job Search. Many past reviews and primary studies also report difficulties with job search activities (Ezerins et al., 2023; Hyde, 2020) and finding jobs to apply for (Coleman & Adams, 2018; Lee et al., 2022). Some barriers for this process include not having support with the job search process (Baldwin et al., 2014; Bhuiyan et al., 2022), being unable to find workplaces that are supportive of individuals with special needs (Hyde, 2020) and offering full-time positions with benefits (Hall, 2020), not having many options to choose from leading to mismatches between them and available jobs (Lee et al., 2022), and general lack of employment opportunities (Brockwell, 2013).

Application Process. Difficulties with completing the application process is another noted challenge for autistic individuals in past reviews (Bennett & Goodall, 2021; Hayward et al., 2016) and primary studies (Hall, 2020; Hedley et al., 2017a; Lorenz et al., 2016). Specifically, past review and primary studies reported difficulties with creating resumes (Seagraves, 2021), exclusionary psychometric assessments built for neurotypical applicants (Davies et al., 2023; Vincent & Fabri, 2020), the pressure of multiple hurdles in an application process (Hedley et al., 2017a), ambiguity, uncertainty, and lack of information surrounding the hiring process (Black et al., 2020; Davies et al., 2023), challenges with understanding abstract and multi-step instructions

(Soeker et al., 2022), particular dislike for group tasks in hiring processes (Davies et al., 2023), and lack of support during the application process (Bhuiyan et al., 2022).

Several reviews and primary studies also report common barriers that prevent autistic individuals from being successful in the application process. The most reported barrier is social and communication difficulties (Brockwell, 2013; Davies et al., 2023; Hedley et al., 2017a; Hendricks, 2010; Holwerda et al., 2012; Taylor, 2017; Wen et al., 2024). A previous review reported that many autistic individuals feel that their success in the application process is contingent on their social abilities rather than their ability to do the job tasks (Bhuiyan et al., 2022), and recent primary studies also noted that autistic applicants feel there is an unnecessary emphasis on personality, chemistry, and social skills and not enough emphasis on one's ability to do the work (Davies et al., 2023; Vincent & Fabri, 2020). Several reviews and studies also report maladaptive behavioral challenges as a barrier in the application process (Holwerda et al., 2012), such as tantrums, aggression, and destruction (Hendricks, 2010), and routine, rigidity, and repetitive behaviors (Brockwell, 2013). Other difficulties include lack of inclusive hiring strategies (Nicholas et al., 2019) and having to "mask" their autism in order to succeed in the application process (Davies et al., 2023). In fact, a previous review found that those with fewer visible autistic traits are more likely to be competitively employed (Holwerda et al., 2012).

Interviews. Challenges with interviews was the most reported barrier in this career phase by reviews (Bennett & Goodall, 2021; Ezerins et al., 2023; Seagraves, 2021) and primary studies (Davies et al., 2023; Hedley et al., 2017a; Julian & Barron, 2019; Lee et al., 2022; Lorenz et al., 2016). The social deficits that many autistic individuals have create challenges for succeeding in the interview (Braudis, 2017; Chen et al., 2015; Finn et al., 2023; Franklin, 2021; Hendricks, 2010), and cause interviews to become an "insurmountable barrier" (Coleman & Adams, 2018;

Raymaker et al., 2023) that limits their job opportunities regardless of their ability to do the job (Chen et al., 2015). Interestingly, one primary study (Whelpley & May, 2023) used an experimental design to compare the interview performance of autistic and neurotypical participants using two conditions: a video recording of a mock interview and the written transcript of the same mock interview. The results showed that neurotypical participants outperformed the autistic participants when raters watched the video of the interview, but autistic candidates out-performed the neurotypical candidates in the transcript version. The authors concluded that the social aspect of video or live interviews is biased against autistic individuals, such that the same candidate information was rated lower by blinded raters when they were able to see the candidate than when they read their responses in the transcript.

Furthermore, three recent experimental studies examined the differences in first impressions for autistic and non-autistic individuals, and all found that first impressions, as rated by blinded non-autistic participants, were less favorable for autistic-presenting candidates compared to non-autistic-presenting candidates (Cage & Burton, 2019; Comer et al., 2023; Flower et al., 2021). Additionally, in two studies non-autistic candidates were rated more favorably on employability and were "hired" more often in the fictional hiring scenario (Comer et al., 2023; Flower et al., 2021).

Many specific difficulties with the interview structure have been noted, including interpreting the interview questions, reading between the lines, and knowing what response is actually being solicited (Chang et al., 2023; Ellestad et al., 2023), lack of knowledge regarding the interview process and proper etiquette and norms (Black et al., 2020; Chang et al., 2023; Finn et al., 2023; Taylor, 2017), and difficulties around having to come up with an answer on the spot (e.g., not remembering examples to share, not being able to write the question down, not

knowing the questions in advance; Ellestad et al., 2023; Richards, 2012). Additionally, many studies reported difficulties around "masking" during interviews (Ellestad et al., 2023; Finn et al., 2023), such as difficulty making the right facial expressions and monitoring one's body language (Ellestad et al., 2023) and maintaining eye contact (Ellestad et al., 2023; Richards, 2012). This pressure to pretend and perform this "song and dance" (Richards, 2012) can be extremely draining when paired with also focusing on answering the questions (Chang et al., 2023; Ellestad et al., 2023; Hall, 2020) and can lead to burnout (Finn et al., 2023) and hopelessness going into interviews (Richards, 2012).

Some other reported difficulties with interviews included harsh interview environments (e.g., bright artificial lights, noise, whispering, unregulated room temperatures, proximity to others; Davies et al., 2023), panel-style interviews with multiple assessors (Finn et al., 2023) and group interviews (Whelpley et al., 2021) being more stressful, and not being able to write their answers down first (Finn et al., 2023). Additionally, multiple studies reported challenges surrounding lack of awareness regarding autism and neurodiversity during interviews (Chang et al., 2023), such as ignorance of the interviewer (Whelpley et al., 2021), and the risk of disclosing one's diagnosis during an interview when the employer is not accommodating or inclusive (Chang et al., 2023)

Interpersonal Challenges. Challenges with employers were also noted during other portions of the job search process and throughout the Exploration phase. One common theme reported was stigma, stereotypes, and negative attitudes toward autism (Black et al., 2020; Nicholas & Lau, 2019; Wen et al., 2024; Whelpley et al., 2021). Specifically noted were stereotypes of low dependability (Mai, 2018), perceptions of autism diagnosis impacting their capability to do the job (Albright et al., 2020; Ellestad et al., 2023; Mai, 2018; Nicholas et al.,

2019; Vaughan, 2019; Whelpley et al., 2021), low expectations for their success (Hedley et al., 2017a), perceptions of their being unsuited for the work environment or team (Andrade et al., 2022; Bhuiyan et al., 2022), and employer general hesitations to hire an autistic person (Hedley et al., 2017a; Vaughan, 2019; Wen et al., 2024). Another common theme noted by past reviews (Chen et al., 2015; Wen et al., 2024) and other primary studies (Black et al., 2020; Finn et al., 2023; Nicholas et al., 2019; Vaughan, 2019; Vincent & Fabri, 2020) was employers' and coworkers' lack of understanding of or exposure to autism. Furthermore, it was noted that organizational diversity policies and practices often exclude autism (Mai, 2018), and the need for special accommodation (Mai, 2018) or the availability of funding or resources to support an autistic employee (Nicholas et al., 2019) often affect how employers evaluate autistic candidates. Employers may also feel a lack of confidence in their ability to interview and hire an autistic candidate (Nicholas et al., 2019), determine the level of management required and appropriate complexity of work for an autistic candidate (Vaughan, 2019), or to adapt a workplace for an autistic job candidate (Nicholas et al., 2019). Indeed, employers may expect autistic employees, should they be hired, to perform the work in particular ways (Chen et al., 2015), especially if they have never employed an autistic person before (Nesbitt, 2000). Other impactful employer attitudes and beliefs that were noted included a perception that the autistic individual would not have reliable transportation to work (Nicholas et al., 2019), a perception that there is little incentive to hire an autistic person over someone without a disability (Braudis, 2017), a fear of embarrassment of the organization by hiring an autistic person (Mai, 2018), and concerns over safety or potential litigation (Nicholas et al., 2019).

Disclosure of one's diagnosis during the hiring process was also noted in several reviews and studies to be a challenging subject (Ezerins et al., 2023), due to the risk of disclosure leading

to being treated differently and not being taken seriously (Taylor, 2017), exacerbated discrimination and stigma (Davies et al., 2023; Vincent & Fabri, 2020), being seen as not qualified (Taylor, 2017), and ultimately being released from hiring process (Richards, 2012). These risks often lead to reluctance to disclose during the hiring process (Hedley et al., 2017a), even at the expense of possibly receiving accommodations and understanding (Norris et al., 2023) and even improving hiring chances (Ohl et al., 2017).

Challenges with Support Services. Shortcomings of support services were also relevant to the Exploration phase. General themes in this area included limited availability of support services (Chen et al., 2015), poor quality, ill-equipped, or insufficient support services (Baker-Ericzen et al., 2022; Braudis, 2017; Chen et al., 2015; Hendricks, 2010), long waiting lists for support services (Chen et al., 2015), and the fear of losing one's support services after starting work (Bennett & Goodall, 2021; Brockwell, 2013; Chen et al., 2015). Interestingly, many studies also noted potential negative effects of receiving support services, including support services usually connecting them with unskilled jobs that are a poor match for their skills and needs (Finn et al., 2023; Raymaker et al., 2023), staying in support services longer being associated with poorer employment outcomes (Kaya et al., 2018), or receiving services at all being associated with poorer employment outcomes (Kaya et al., 2018; Nye-Lengerman, 2015). However, it should be noted that other studies have reported positive correlations between receiving support services and employment outcomes (e.g., Ditchman et al., 2018), thus it could be that the severity level of the autism diagnosis is a confounding variable in this relationship, as those who also have an intellectual disability are more likely to receive support services (Chen et al., 2015; Taylor & Seltzer, 2011). Thus, the severity of their diagnosis may be impacting their employment outcomes irrespective of the employment support services they receive.

Other Challenges. Intrapersonal challenges may also impede goal achievement in the Exploration phase. For example, the application process can be demanding, and the psychological impact of going through a rigorous selection process and not being accepted in the end can be discouraging (Hedley et al., 2017a). Furthermore, autistic applicants may have anxiety from past negative job experiences (Taylor, 2017), or may be less likely to apply for jobs or continue with selection processes due to fear of their impairment in communication hindering their outcomes (Franklin, 2021). Additionally, autistic job applicants may have low self-esteem (Bennett & Goodall, 2021), lack of drive (Holwerda et al., 2012), or low motivation to work (Hyde, 2020).

Not having a means of transportation, or a workplace not being accessible via public transit (Finn et al., 2023), is another barrier to employment commonly reported (Bennett & Goodall, 2021; Braudis, 2017; Brockwell, 2013; Coleman & Adams, 2018). Additionally, a previous review noted that autistic women also struggle with societal expectations for women regarding having children or other family responsibilities, and stereotypes regarding which jobs women should do (Bennett & Goodall, 2021). Some additional challenges noted within the Exploration phase included unconventional pathways to starting careers for autistic individuals (Raymaker et al., 2023), parental overprotection hindering their joining the workforce (Bennett & Goodall, 2021), and comorbidities (e.g., intellectual disability, psychiatric disorders, epilepsy) further hindering work placement (Holwerda et al., 2012).

#### **Facilitators**

Qualification and Preparation Facilitators. To combat the barriers associated with qualification and preparation for employment, training and support are needed prior to applying for positions (Borromeo, 2020). The reviewed studies noted that additional training and

preparation would be useful in workplace basic skills, such as handshakes, writing skills, and appropriate touch (Dreaver et al., 2020), personal care and appropriate appearance and clothing (Di Francesco et al., 2021; Dreaver et al., 2020), interpersonal and communication skills and social norms (Black et al., 2020; Di Francesco et al., 2021; Soeker et al., 2022), life skills (Black et al., 2020; Soeker et al., 2022), information technology (Soeker et al., 2022), and vocational training (Black et al., 2020). Thus, programs that help autistic individuals develop these skills before applying to jobs would be beneficial. Two such programs were identified in the current review that address this need. The Autism Summer Employment Program (Porthukaran et al., 2022) was designed to help autistic individuals obtain employment after graduation from a postsecondary institution. The program consisted of various workshops covering topics such as resume writing and interview skills (including mock interviews), disclosure and accommodation, social skills, email etiquette, conflict resolution, professionalism, giving and receiving feedback, teamwork, bullying in the workplace, communication, having a positive attitude at work, and workplace norms. Following the program, only two of the 17 participants were unable to obtain placement in either volunteer or paid employment opportunities. Another program called The Learning Academy (Smith et al., 2019) was a two-semester experience built into a college or university setting that aimed to develop pre-vocational skills such as time management, organization skills, setting and attaining goals, conflict resolution, interpersonal, teamwork, and networking skills, developing resumes, interviewing, career planning, and job searching. The program participants were also required to complete an internship in the second semester of the program that was customized to their interests. The preliminary results of the program showed that it was a promising program that was effective in helping autistic individuals develop employment skills before entering the job market.

Additionally, previous work experience, especially paid work, has been shown to be important for securing employment (Sung et al., 2015; Vigna et al., 2023). Post-secondary education was also found to be related to successful employment attainment (Alverson & Yamamoto, 2018; Kaya et al., 2018; Ohl et al., 2017). These findings connect the Exploration phase with the previous Growth phase, such that experiences gained in the earlier phase are important for successful goal attainment in the Exploration phase.

Job Searching Facilitators. The job search process can be facilitated through support with finding jobs that are a good match for the individual's skills, interests, and abilities (Borromeo, 2020; Braudis, 2017; Ezerins et al., 2023; Nicholas & Lau, 2019). Several studies noted the utility of technology for matching abilities and interests to specific careers or jobs (Bennett & Goodall, 2021; Chen et al., 2015). For example, a recent study determined that the O\*NET Computerized Interest Profiler tool was useful for determining occupations that were appropriate, interesting, and attainable for individuals with a low-severity autism diagnosis (Good, 2016).

Family members, job coaches, and mentors can also provide support by helping the autistic individual find jobs to apply to that would suit them (Braudis, 2017; Di Francesco, 2022; Holwerda et al., 2012; Vincent & Fabri, 2020), connecting them with opportunities (Hall, 2020; Raymaker et al., 2023), and providing career guidance regarding specific job sectors (Bennett & Goodall, 2021). Job placement assistance from support services and counselors, such as guidance through the steps of the process (Martin & Lanovaz, 2021), and assessing their preferred work tasks and matching them with jobs that align with these preferences (LaRue et al., 2020), can also be extremely useful autistic job seekers in securing employment (Sung et al., 2015).

It is important for autistic individuals to find employers that utilize the unique strengths of autism and are willing to accept the difficulties (Bennett & Goodall, 2021). Additionally, appropriate work environments are ones that allow for strategic use of special interests (Raymaker et al., 2023) and where their skills, talents, and unique qualities allow them to be productive (Borromeo, 2020), rather than hindering their performance. Employers can do their part to support autistic job seekers by writing job postings in plain language and noting only necessary job qualifications (Ezerins et al., 2023), providing more entry-level jobs that are not customer service positions (Lee et al., 2022), and educating recruiters about autism (Ezerins et al., 2023).

Application Process Facilitators. The process of completing application and selection processes (excluding interviews; addressed separately in the following section) can be facilitated through parents or other supports providing assistance with preparing application materials (e.g., resume, cover letter) and completing the application form (Hall, 2020; Vincent & Fabri, 2020). Additionally, employers can provide thorough training to those involved in recruitment about autism and its benefits (Davies et al., 2023), develop autism-specific hiring programs (Finn et al., 2023), tailor hiring process to individuals' needs (Davies et al., 2023), be flexible and creative with hiring processes (Raymaker et al., 2023), and provide meaningful feedback to individuals if they are not selected for the position (Davies et al., 2023). Additionally, employers should strive to provide a safe environment to disclose and ask for accommodations throughout the selection process, such as by utilizing more inclusive advertising and job postings and providing lists of accommodations that are available (Davies et al., 2023).

Bhuiyan et al. (2022) reviewed recruitment and selection practices that can be used to improve the match between autistic individuals and an organization. These included providing

realistic job previews of the organization's values and practices and key elements of the job, such as the social and task-related expectations of the role. This will allow the individual to make an informed decision regarding whether the organization is a good fit for them. Additionally, the authors report that organizations should use personality tests in their selection processes that are not considered diagnostic and that have demonstrated criterion-related validity for all employees, regardless of disability status. Relatedly, a recent primary study evaluated several game-based cognitive ability assessments and found that there were no meaningful differences in scores between autistic and non-autistic test takers (Willis et al., 2021). Thus, when cognitive ability is a requirement for the role, game-based assessments could be a viable option that minimizes adverse impact for autistic candidates.

Interview Facilitators. As interviews were the most frequently reported challenge during the Exploration phase, interview supports and facilitators were the most commonly reported supports during this phase. Several past reviews have compiled supports and alterations to interviews that would benefit autistic job seekers (Baker-Ericzen et al., 2022; Bennett & Goodall, 2021; Chen et al., 2015; Ezerins et al., 2023; Hedley et al., 2017b; Lindsay et al., 2019; Munandar et al., 2020; Richardson et al., 2018). The effectiveness of virtual reality and computer-based programs that teach interview skills has been strongly supported by the literature (Baker-Ericzen et al., 2022; Bennett & Goodall, 2021; Chen et al., 2015; Hedley et al., 2017b). Most commonly, video modeling of appropriate interview responses and behavior have been shown to be effective for training autistic job seekers before interviews (Le et al., 2021; Munandar et al., 2020). Baker-Ericzen et al. (2022) noted in their review, however, that these programs may be more beneficial for teaching how to respond to various interview questions, rather than teaching nonverbal communication and social norms, due to the lack of fidelity of

virtual interviewers to real-life interviewers. As technology for these programs improve and fidelity increases, their usefulness will likely increase.

Other primary studies also report effective pre-interview training methods, including the use of virtual reality and computer-based trainings to teach interview skills (Burke et al., 2018, 2021; Lopez, 2019; Smith et al., 2015; Williams & Smith, 2023; Yoshikawa et al., 2023). Many studies also support the effectiveness of video modeling and feedback, for improving interview question performance, reducing fidgeting, presenting answers logically and succinctly (Hayes et al., 2015), increasing the amount of eye contact used during the interview (Barnes, 2014), and storytelling ability (Munandar et al., 2020). Many studies also tested and found support for various workshops and trainings to prepare for interviews by improving skills and reducing anxiety around interviewing (Adiani et al., 2023; Finn et al., 2023; Hutchinson, 2018; Kahng et al., 2023; Kumazaki et al., 2017, 2019a, 2019b, 2022; Lee et al., 2022; Mendenhall, 2021; Morgan et al., 2014; Whitlow, 2017). Finally, increased help from job coaches to prepare for interviews (Di Francesco, 2022), including role playing interviews with the autistic job seeker (Coleman & Adams, 2018), has been noted as a viable support.

Regarding alterations to interview structure, the past review by Ezerins et al. (2023) reported that it can be useful to break down interview questions into clearer parts, and letting the interviewee respond to each portion one at a time before moving on to the next. Similarly, Richardson et al. (2018) note that allowing autistic interviewees to write down their answers before responding would also be a useful accommodation. Finally, the role of the interviewer is critical, and all interviewers should have adequate knowledge of autism prior to interviews (Ezerins et al., 2023), and should allow for adjustments to the job interview process following disclosure of diagnosis from the interviewee (Lindsay et al., 2019).

Various primary studies also reported ways in which the structure of interviews can be altered to support autistic job seekers. Accommodations and flexibility around the interview in general was a common theme (Chang et al., 2023; Dreaver et al., 2020; Finn et al., 2023; Hedley et al., 2017a), including utilizing non-traditional interviews such as workplace tours (Colorosa, 2016), allowing the use of pre-written scripts for interview responses (McKnight-Lizotte, 2018), providing printouts of the questions to use during the interview (Maras et al., 2021; Whelpley et al., 2021), taking breaks throughout and repeating questions (Davies et al., 2023), and allowing interviewees to respond to each part of the question in turn (Maras et al., 2021). Another common theme was providing ample information beforehand regarding what to expect during the interview (e.g., number and type of questions they will be asked, length of interview, when they should respond; Chang et al., 2023; Ellestad et al., 2023; Maras et al., 2021; Whelpley et al., 2021), offering accommodations up front so they do not need to be asked for, confirming that using accommodations will not impact the hiring decision (Finn et al., 2023), or even providing the interview questions in advance (Ellestad et al., 2023). Interview questions should be clear and direct (Finn et al., 2023), and should reflect behavioral instances or past experiences rather than personality traits (Finn et al., 2023) or abstract topics (Whelpley et al., 2021). It may also be beneficial to conduct interviews with only one interviewer and not over the phone, and to use a casual, conversational tone (Ellestad et al., 2023). Finally, employers could consider conducting a pre-interview with the job coach of autistic individual to learn about their strengths and weaknesses (Coleman & Adams, 2018), remember to remain patient with the autistic interviewee, and confirm that all interviewers have a good understanding of autism (Whelpley et al., 2021).

Interpersonal Facilitators. As has been hinted in previous sections, one of the most commonly reported facilitators in the Exploration section was employer and coworker awareness, understanding, and appreciation of autism (Albright et al., 2020; Black et al., 2020; Brockwell, 2013; Comer et al., 2023; Finn et al., 2023; Flower et al., 2021; Griffiths et al., 2020; Hall, 2020; Hyde, 2020; Mai et al., 2018; Nicholas et al., 2019; Richardson et al., 2018; Seagraves, 2021; Vincent & Fabri, 2020; Wen et al., 2024). Another common theme was organizational policies and culture that promote inclusion, accommodation, and acceptance (Albright et al., 2020; Andrade et al., 2022; Griffiths et al., 2020; Mai, 2018; Vaughan, 2019), such as through organizational policies that fund and support the hiring and accommodation of autistic individuals (Mai, 2018), allyship in the workplace (Vincent & Fabri, 2020), and team members and managers changing their communication tactics to support the autistic individual (Vaughan, 2019).

Disclosure should also be facilitated in the Exploration stage, as disclosure during the hiring stage can improve employer perceptions of the autistic individual (Norris et al., 2023) and likelihood of being hired (Ohl et al., 2017). A survey of employers found that employers tend to prefer disclosure of a diagnosis occurring in the hiring stage rather than after hire (Adams, 2018), and were more likely to hire a candidate who disclosed early in an interview rather than later (Simmons, 2021). To promote early disclosure, though, employers need to provide a safe environment for disclosure (Vincent & Fabri, 2020). Employers who have worked with an autistic person in the past are more likely to have a positive attitude toward disclosure (Adams, 2018). Employers who are more knowledgeable about autism are also likely to have more positive perceptions of an autistic candidate, especially if they disclose (McMahon et al., 2021). Additionally, larger companies are more likely to hire an autistic individual after receiving an

accommodation request (Adams, 2018), and are more likely to hire an autistic person in general (Hyde, 2020; Wen et al., 2024).

Support Services Facilitators. Several additions or improvements to current support services were noted by the reviewed studies as essential for supporting autistic individuals during the Exploration phase. Many reviews and studies reported the need for more vocation- and transition-focused programs and services (Chen et al., 2015; Fong et al., 2021) to assist autistic individuals seek and attain employment (Black et al., 2019; Doran et al., 2023). Such programs could include those focused on developing functional job skills (Franklin, 2021); learning job searching skills (Hendricks, 2010); learning to set realistic goals, solve problems, manage time, and develop independence (Franklin, 2021; Seagraves, 2021); job placement supports that assess their preferences and match the individual with jobs that are an appropriate match for their skills and needs (Hendricks, 2010; Kaya et al., 2018; Nye-Lengerman, 2015; Seagraves, 2021); learning resume-writing and interviewing skills (Seagraves, 2021); and learning unwritten social rules and workplace norms (Seagraves, 2021). More access to personalized job coaching could also improve rates of employment, diversity in attained jobs, salary level, and decrease turnover (Ezerins et al., 2023; Nicholas et al., 2015). Finally, supported employment with customized and ongoing support can be extremely beneficial for securing employment, integrating into the workplace, and gaining workplace skills (Baker-Ericzen et al., 2022; Chen et al., 2015; Ezerins et al., 2023; Hedley et al., 2017b; Mawhood & Howlin, 1999; Schaller & Yang, 2005; Wehman et al., 2012).

Other Facilitators. Several other supports and facilitators were noted for the Exploration phase. Individual characteristics such as having a higher IQ (Holwerda et al., 2012), as well as being white (Alverson & Yamamoto, 2018), male (Alverson & Yamamoto, 2018; Kaya et al.,

2018), and not having a secondary disability (Alverson & Yamamoto, 2018) are related to better employment outcomes. Additionally, self-determination and transportation independence are related to improved employment outcomes (Zalewska et al., 2016), as well as direct and honest communication, clear guidance, and honest feedback from employers, and access support for emotional needs during the hiring process (Brockwell, 2013).

# Summary of Exploration Phase

The Exploration phase included challenges and facilitators related to job search and application processes. Table 2 provides a summary of which challenges and facilitators in the Exploration phase have strong, moderate, and limited evidence in the literature.

 Table 2

 Summary of Exploration Phase Findings

	Challenges	Facilitators
Strong Evidence	<ul> <li>Qualification and Preparation         Challenges     </li> <li>Job Search Challenges</li> <li>Application Process Challenges</li> <li>Interview Challenges</li> <li>Interpersonal Challenges</li> <li>Support Services Challenges</li> </ul>	<ul> <li>Qualification and Preparation     Facilitators</li> <li>Job Search Facilitators</li> <li>Interview Facilitators</li> <li>Interpersonal Facilitators</li> <li>Support Services Facilitators</li> </ul>
Moderate Evidence	<ul><li>Psychological Impacts of Application Process</li><li>Transportation</li></ul>	Application Process Facilitators
Limited Evidence	<ul> <li>Other Challenges (e.g., psychological impacts, parental overprotection)</li> </ul>	<ul> <li>Other Facilitators (e.g., individual characteristics, transportation)</li> </ul>

Overall, the Exploration phase received the most attention in the literature, and many of the topics received strong support. This provides many strong avenues for supporting autistic individuals during this career phase. The most evidence surrounded interviews, with this aspect of the application process being the most difficult for autistic individuals to overcome.

Fortunately, there are many options for effective supports. The use of video modeling and virtual reality for interview training has been highly effective in past studies for preparing autistic individuals for interviews. Job coaches and other support staff should utilize these methods for providing autistic individuals with practice and feedback before they participate in real interviews. Additionally, employers should consider whether interviews are a necessary component of their hiring process. Interviews inherently contain a social component, which leads to adverse impact for autistic individuals. If the job role does not require social ability to perform the job well, then alternative assessment methods should be considered, such as work samples and written responses regarding experiences or past behaviors. If interviews are deemed necessary, then modifications should be made to the interview process to be more inclusive of autistic individuals. Some modifications that received ample evidence in the literature, and thus are likely to be effective, are asking interview questions that are clear and about concrete past experiences (e.g., "tell me about a time when you conducted difficult statistical analyses"), breaking down questions into smaller parts and addressing each in turn (e.g., "what were you conducting the analyses for? What software did you use? How did you know which tests to run?"), allowing the interviewee to write down their response before sharing it, and providing ample information about what to expect in the interview. Interviews represent the largest barrier for autistic individuals when applying for employment and thus it is critical that employers understand this barrier and make accommodations to this process to be more inclusive of autistic individuals.

Additionally, employers can make minor alterations to other aspects of the application process to be more inclusive of autistic individuals. Some methods that have received strong evidence in the literature include only noting necessary qualifications in job postings, providing

enough information about the job and organization to offer a realistic preview of the job, and validating personality and cognitive ability assessments for use with neurodivergent individuals. Another critical support during this phase is education and awareness of autism among recruiters, interviewers, and hiring managers. Increasing awareness among staff about autism is critical for reducing stigma and stereotypes about autism and ensuring autistic individuals are treated and evaluated fairly throughout the job search and application process.

Support services can also be improved during this phase with more vocation- and transition-focused programs to provide more experience and preparation before and during the job application process. Additionally, better quality job placement supports that connect autistic individuals with well-fitting jobs would improve outcomes during the Exploration phase. There was also moderate evidence that transportation can be an issue for finding suitable employment, so additional support services in this domain, such as driving instruction, public transit navigation instruction, or transportation services could improve hiring outcomes.

### **Establishment**

The Establishment stage in Super's (1994) life-span, life-space theory relates to posthiring, early career-related goals, such as getting started in a chosen career, developing new skills and abilities in the new role, and finding stability in the new role. In the current review, this stage includes topics such as socialization, training, and relationship building.

## **Challenges**

Disclosure and Asking for Accommodations. Post-hire disclosure was a common challenge reported in the Establishment phase (Bennett & Goodall, 2021). Specifically, reviews and primary studies noted the uncertainty and risks of disclosure leading to a fear of disclosing (Bontempo, 2009; Braudis, 2017; Brownlow et al., 2018; Underhill, 2022; Vijayakumar, 2021;

Wen et al., 2023), such as experiencing stigma and discrimination after disclosing (Conte, 2021; Johnson & Joshi, 2016; Lindsay et al., 2019; Nimante et al., 2023; Raymaker et al., 2023; Thompson, 2018), losing one's job (Raymaker et al., 2023), disclosure impacting growth in the company (Taylor, 2017), being treated differently (Nimante et al., 2023), and experiencing negative, irrational, or resistant responses from the employer (Richards, 2012; Underhill, 2022). Furthermore, past negative experiences with disclosure (Vijayakumar, 2021), feeling that there is no benefit to disclosing (Nimante et al., 2023), a fear of being seen as "more peculiar" after asking for accommodations (Johnson & Joshi, 2016; Rebholz, 2012), lack of support and understanding from others making it feel unsafe to disclose (Brownlow et al., 2018), and feeling that because their autism is an invisible disability it is harder to ask for accommodations (Wen et al., 2024) were also reported as reasons autistic employees may be hesitant to disclose. Additionally, many new autistic employees reported needed modifications in the workplace (Coleman & Adams, 2018; Cooper, 2022), but reported experiencing issues with accommodation such as the accommodation being instated incorrectly, or being denied, ignored, or weaponized (Underhill, 2022). However, post-hire disclosure represents a double bind, such that, while there are negative outcomes associated with disclosing as mentioned, there are also negative outcomes associated with not disclosing. For example, it takes a lot of mental energy managing one's outward presentation with masking to prevent being "found out" (Conte, 2021; Johnson & Joshi, 2016; Jones, 2023; Underhill, 2022; Vijayakumar, 2021), and the job can be unnecessarily more difficult when needed accommodations are not provided (Baldwin et al., 2014; Ezerins et al., 2023; Lee et al., 2022; Thompson, 2018; Whelpley et al., 2021). Disclosure may be more difficult for those who are diagnosed later in life (Johnson & Joshi, 2016) and for men (Nagib & Wilton, 2021).

Interpersonal Challenges. The most significant barrier reported in the Establishment phase was social interaction challenges (Bennett & Goodall, 2021; Black et al., 2019, 2020; Braudis, 2017; Chen et al., 2015; Estival et al., 2023; Hayward et al., 2016; Hyde, 2020; Jones, 2023; Lorenz et al., 2016; Nagib & Wilton, 2021; Richardson et al., 2019; Testoni et al., 2019; Thompson, 2018; Tomczak, 2022; Vijayakumar, 2021; Waisman-Nitzan et al., 2021; Whelpley et al., 2021). First, behavioral challenges associated with the autism diagnosis were reported to interfere with social integration and relationship development due to their leading to segregation or misunderstandings (Chen et al., 2015; Hendricks, 2010; Lorenz et al., 2016; Nagib & Wilton, 2021; Spoor et al., 2021). These behavioral challenges included emotional meltdowns (Black et al., 2020; Chen et al., 2015; Hendricks, 2010; Jones, 2023; Nagib & Wilton, 2021), hand flapping (Black et al., 2020), restricted, repetitive, ritualistic behaviors (Chen et al., 2015; Hendricks, 2010; Waisman et al., 2020, 2021), aggression, self-injury, or destruction (Chen et al., 2015; Hendricks, 2010; Nagib & Wilton, 2021), hyperactivity (Chen et al., 2015), and sensory issues (Baldwin et al., 2014; Black et al., 2019; Bontempo, 2009; Braudis, 2017; Chen et al., 2015; Hayward et al., 2016; Jones, 2023 Pheiffer et al., 2017; Rebholz, 2012; Testoni et al., 2019; Tomczak, 2022; Waisman-Nitzan et al., 2021; Wen et al., 2023).

Next, social and communication skills were also noted frequently as a barrier to socialization and developing relationships with coworkers and leaders (Baldwin et al., 2014; Borromeo, 2020; Brownlow et al., 2018; Chen et al., 2015; Conte, 2021; Cooper, 2022; Espelöer et al., 2023; Hendricks, 2010; Pezzimenti et al., 2023; Pfeiffer et al., 2017; Remington et al., 2022; Seva et al., 2022; Taylor, 2017; Waisman-Nitzan et al., 2019, 2021; Wen et al., 2023). For example, the autistic employee may rudely terminate or interrupt conversations, be unable to communicate needs, use trendy language phrases inappropriately, struggle to understand others'

emotions, or act inappropriately with individuals of the opposite sex (Chen et al., 2015; Hendricks, 2010). Additionally, they may struggle to understand sarcasm (Brownlow et al., 2018), interpret verbal and nonverbal communication of others and take others' perspective (Black et al., 2019; Bury et al., 2021; Jones, 2023; Rebholz, 2012; Taylor, 2017; Waisman-Nitzan et al., 2021), understand social cues (Brownlow et al., 2018), understand social rules and norms (Jones, 2023; McKnight-Lizotte, 2018; Hendricks, 2010; Rebholz, 2012), and respect others' boundaries (Bury et al., 2021; Seva et al., 2022). They may also have difficulty interpreting facial expressions and tone of voice (Chen et al., 2015; Hendricks, 2010; Nagib & Wilton, 2021), subtext and context cues (Chen et al., 2015; Hendricks, 2010; Rebholz, 2012), and picking up cues that the conversation topic had changed (McKnight-Lizotte, 2018).

Work social and team building events can also be a challenge (McKnight-Lizotte, 2018; Rebholz, 2012), as they may not have a desire to attend but feel pressured to attend (Nagib & Wilton, 2021), and they may struggle to understand the rules surrounding social events, such as what food to bring and how much food to eat (Bury et al., 2021a). Exhaustion during social situations was also commonly reported (Bennett & Goodall, 2021; Braudis, 2017; Richards, 2012). Understanding and utilizing different forms of communication can also be challenging, such as understanding rules for written communication like emails and formal letters (Jones, 2023; Taylor, 2017), being unable to process information given over the phone (Taylor, 2017), and navigating the balance between professional and personal interactions (Jones, 2023). It was also noted that these communication difficulties can lead to unfair criticism or being overlooked or dismissed due to not communicating effectively (Jones, 2023), and that social expectations in the workplace are often more stringent for autistic women (Hayward et al., 2019; Nagib & Wilton, 2021).

Difficulties with supervision were also frequently noted (Bury et al., 2021a; Lorenz et al., 2016; Seagraves, 2021). Some noted issues included lack of communication from leaders (McKnight-Lizotte, 2018), lack of understanding and awareness of autism from leaders (Brownlow et al., 2018; Hayward et al., 2016; Taylor, 2017; Waisman-Nitzan et al., 2019; Wen et al., 2023), rude communication from leaders (McKnight-Lizotte, 2018), leaders being unwilling to intervene when needed (Ezerins et al., 2023), leaders being over-reliant on unwritten rules (Richards, 2012) and being reluctant to provide alterations, accommodations, and support (Brownlow et al., 2018; Lee et al., 2022), and negative attitudes of leaders toward autism (Bennett & Goodall, 2021; Franklin, 2021).

Coworker-specific challenges were also noted (Estival et al., 2023), including coworkers' lack of understanding and knowledge of autism (Ezerins et al., 2023; Hayward et al., 2016; Nicholas & Lau, 2019; Spoor et al., 2021) and coworkers being unsupportive (Lee et al., 2022). Studies also reported negative attitudes of coworkers regarding autism (Ezerins et al., 2023), such as the perception that autistic coworkers are difficult to interact with (Rebholz, 2012) or that they receive special treatment (Spoor et al., 2021). Additionally, autistic individuals may experience personality conflicts with their coworkers and may not realize they have annoyed or offended a coworker (Taylor, 2017). They may also develop anger toward their coworkers when they do not follow rules and policies, and not know how to address their violations of policies (McKnight-Lizotte, 2018).

Finally, issues related to stigma, bias, and mistreatment were commonly reported in the Establishment phase (Baldwin et al., 2014; Bennett & Goodall, 2021; Brownlow et al., 2018; Lee et al., 2022; Pfeiffer et al., 2017; Vijayakumar, 2021; Wen et al., 2023). Studies reported that autistic individuals are often bullied (Brownlow et al., 2018; Hayward et al., 2018; McKnight-

Lizotte, 2018; Nagib & Wilton, 2021; Raymaker et al., 2023; Richards, 2012), excluded (Baldwin et al., 2014; Bennett & Goodall, 2021; Brownlow et al., 2018; Nagib & Wilton, 2021; Richards, 2012; Vijayakumar, 2021), patronized (Pfeiffer et al., 2017), and harassed (Nagib & Wilton, 2021) in the workplace. They also frequently face being sabotaged (Nagib & Wilton, 2021), undervalued and discredited (Baldwin et al., 2014; Brownlow et al., 2018; Cooper, 2022), held to stereotypes for their gender (Nagib & Wilton, 2021) or autism diagnosis (Spoor et al., 2021), and discriminated against (Brownlow et al., 2018; Cooper, 2022; Raymaker et al., 2023; Wen et al., 2023). They may also face mistreatment through intersections of ableism with discrimination regarding their race, ethnicity, gender, or sexual orientation (Raymaker et al., 2023), and even physical and verbal attacks (Lorenz et al., 2016).

Workplace Cultural Environment. Several challenges were also noted regarding negative aspects of workplace culture (Nicholas & Lau, 2019). Navigating and decoding workplace politics and understanding general workplace functions and hierarchies were noted as significant barriers (Baldwin et al., 2014; Ezerins et al., 2023; Julian & Barron, 2019; Rebholz, 2012; Taylor, 2017), as well as cultures that paid little attention to mental health and well-being (Nagib & Wilton, 2021; Nicholas & Lau, 2019), were overly competitive or rigid (Jones, 2023), and were unaware or unsupportive of neurodiversity and autism (Jones, 2023; Julian & Barron, 2019). Autistic individuals struggled with being a poor fit for the workplace culture (Ezerins et al., 2023), especially when the workplace prioritizes collaborative team-based work (Ezerins et al., 2023), lacks clarity and organization (Remington et al., 2022), and promotes going above and beyond rather than "just completing one's work and going home" (Vincent & Fabri, 2020). Violation of these social norms often led to feelings of "sticking out" (Conte, 2021) and being "othered" by the work environment (Remington et al., 2022).

Support Services Challenges. As with the previous stages, challenges with support services appeared for the Establishment phase. These challenges included limited access to services (Franklin, 2021; Richardson et al., 2019; Sharpe et al., 2022), slowness of services (Doran et al., 2023), lack of individualized support (Doran et al., 2023), lack of formal policies that would help with obtaining accommodations (Brownlow et al., 2018), and lack of support programs that continue into the workplace to promote maintaining the job (Bhuiyan et al., 2022).

Other Challenges. A few other challenges emerged regarding the transition into employment during the Establishment phase (Ezerins et al., 2023). Past reviews and primary studies reported difficulties with the learning of new skills and processes (Hedley et al., 2018; Richardson et al., 2019), stress from anticipating negative feedback (Hedley et al., 2018), selfcare and hygiene (Black et al., 2019; Braudis, 2017; Chen et al., 2015), and advocating for oneself (Rebholz, 2012). Additionally, serial job loss (Conte, 2021) from difficulties keeping jobs (Coleman & Adams, 2018; Hyde, 2020; Taylor, 2017) and finding jobs that are supportive (Brownlow et al., 2018), match their qualifications (Harvery et al., 2021), and allow enough hours and pay to live off (Espelöer et al., 2023; Harvery et al., 2021) often leads to cycling back to the Exploration stage rather than advancing to the Maintenance phase. Additionally, many mental health difficulties were discussed (Baldwin et al., 2014; Hayward et al., 2016; Pezzimenti et al., 2023), including stress (Hayward et al., 2016; Hendricks, 2010; Lorenz et al., 2016), anxiety (Baldwin et al., 2014; Chen et al., 2015; Harkry, 2017; Hendricks, 2010; Pfeiffer et al., 2017), depression (Chen et al., 2015; Ezerins et al., 2023; Hendricks, 2010), loneliness (Ezerins et al., 2023), and suicidal ideation (Ezerins et al., 2023).

### **Facilitators**

Disclosure and Accommodation Supports. A commonly reported facilitator for the Establishment phase was having access to proper accommodations (Ezerins et al., 2023; Franklin, 2021) after disclosing one's diagnosis (Lindsay et al., 2019; Raymaker et al., 2023; Whelpley et al., 2021). Additionally, studies reported that autistic individuals wished for greater acceptance, inclusion, and awareness following disclosure (Lindsay et al., 2019; Raymaker et al., 2023), and a willingness of employers to go above and beyond what is required to include all employees (Bhuiyan et al., 2022). Some helpful and reasonable accommodations that were reported in past reviews and primary studies include assistive technology (Chen et al., 2015; Khalifa et al., 2019), accommodations to sensory demands and alternative transportation options (Dreaver et al., 2020). The past review by Bhuiyan et al. (2022) noted that many of the accommodations that are requested by those with disabilities, including autism, do not impose hardship on the organization. Providing these reasonable accommodations is indicative of effective management practices and can improve overall culture and impact the organization positively (Bhuiyan et al., 2022; Brownlow et al., 2018).

Interpersonal Facilitators. Many past reviews and primary studies noted facilitators and supports for the interpersonal aspects of work. First, to manage undesirable behaviors specific to the autism diagnosis in the workplace, studies found support for interventions that modeled desired behavior, provided feedback following instances of improper behavior, and rewarded correct behavior (Hendricks, 2010; McCarthy, 1984; Smith & Coleman, 1986). Additionally, building rapport, implementing picture schedules to keep the individual on task, and allowing individual to take short breaks when upset (Hendricks, 2010), as well as building in self-

monitoring tools (Wills et al., 2019), reducing downtime between tasks and praising correct behaviors promptly (Reid et al., 2010) can also help promote desired behaviors.

Next, many facilitators were suggested by past reviews and other primary studies to provide support for the social and communication demands in the workplace and relationship building (Black et al., 2019; Hendricks, 2010; Khalifa et al., 2019; Lindsay et al., 2019; Richardson et al., 2019; Underhill, 2022; Wen et al., 2023). It is critical to promote inclusive, supportive, and understanding relationships between colleagues (Doran, 2021; Harvery et al., 2021; Hayward et al., 2019, 2022; Waisman-Nitzan et al., 2021; Wen et al., 2023), but in ways that are accommodating of the autistic individual's needs and strengths. Reducing the social and interpersonal requirements, such as by limiting contact with coworkers and customers to a desired level, can help reduce interpersonal demands for the autistic employee (Diener et al., 2020; Dreaver et al., 2020; Espelöer et al., 2023; Hayward et al., 2019; Testoni et al., 2019). However, reductions to interpersonal requirements should be paired with increased social support to prevent isolation and promote well-being (Diener et al., 2020; Harkry, 2017; Hayakawa et al., 2015). Furthermore, additional opportunities for connection that involve the individual's strengths and special interests, and that are based on common interests (e.g., hiking group, book club, game nights) rather than purely social events like lunches and happy hours, can be introduced to promote meaningful connection among employees (Ezerins et al., 2023; Jones, 2023). Additionally, miscommunication can be reduced by promoting communication that is direct, honest, and concise (Diener et al., 2020; Dreaver et al., 2020; Haskins, 2019; Johnson et al., 2020; Julian & Barron, 2019; Nagib & Wilton, 2021; Remington et al., 2022; Taylor, 2017), and making expectations very clear (Dreaver et al., 2020; Taylor, 2017). Colleagues should also

be mindful of sarcasm and literal interpretations of slang (Hedley et al., 2018), and should maintain consistency in communication (Remington et al., 2022).

Autistic individuals often reported a wish for ongoing training and support for building interpersonal and communication skills (Braudis, 2017; Hendricks, 2010; Taylor, 2017). Several interventions for improving social skills were also proposed, such as video-based teaching methods (Munandar et al., 2020) and augmentative and alternative communication tools (Hendricks, 2010), the use of scripts for social interactions (McKnight-Lizotte, 2018; Taylor, 2017), role playing social situations (McKnight-Lizotte, 2018), and instruction regarding how to manage conflict with coworkers (Bhuiyan et al., 2022). Flexibility in the modalities of communication can also be beneficial (Hendricks, 2010; Taylor, 2017), such as using computer-based communication as the primary form of communication with the autistic individual (McKnight-Lizotte, 2018; Remington et al., 2022; Taylor, 2017; Testoni et al., 2019; Thompson, 2018; Tomczak, 2022), or face-to-face or phone interactions if they prefer to have visual and tonal cues (Taylor, 2017). Limiting communication to only one modality can also reduce overwhelm and confusion (Taylor, 2017).

A previous review (Ezerins et al., 2023) proposed that leaders are critical for fostering an environment that is accommodating and accepting, and helping the autistic individual adapt and integrate into the work environment. Indeed, several studies reported that effective and personalized supervision is critical for socialization of the autistic individual (Bhuiyan et al., 2022; Doran et al., 2023; Dreaver et al., 2020; Hedley et al., 2018; Martin et al., 2022; Remington et al., 2022; Seva et al., 2022; Sharpe et al., 2022; Waisman-Nitzan et al., 2021). Effective leaders during the Establishment phase are those who understand the difficulties autistic individuals can face during onboarding tasks like orientation (Bennett & Goodall, 2021),

are involved in the autistic employee's integration into the workplace (Grenawalt et al., 2020), provide praise and encouragement (McKnight-Lizotte, 2018), actively create positive cultures (Julian & Barron, 2019; Seagraves, 2021), enforce rules without micromanaging (McKnight-Lizotte, 2018), communicate effectively (McKnight-Lizotte, 2018; Seagraves, 2021; Scott et al., 2015), show respect (Franklin, 2021; McKnight-Lizotte, 2018), provide instruction, feedback, and learning opportunities (Julian & Barron, 2019; McKnight-Lizotte, 2018; Waisman-Nitzan et al., 2021), and proactively address issues (Franklin, 2021; Seagraves, 2021; Wen et al., 2023; Whelpley et al., 2021). Additionally, leaders are effective when they take the time to adapt the environment to the autistic individual's needs and have the resources and support from senior management to do so (Wen et al., 2023). Furthermore, effective leaders support disclosure and are willing to provide accommodations (Taylor, 2017), are confident in their ability to help and provide accommodations (Cooper, 2022), and recognize the benefits of autism in the workplace and diversity at large (Remington et al., 2022; Taylor, 2017; Waisman-Nitzan et al., 2021; Wen et al., 2023). A recent quantitative study examined the effectiveness of a tool designed to improve leaders' self-efficacy in their ability to modify the workplace for autistic individuals (Scott, 2017). The Integrated Employment Success Tool (IESTTM) was a practical workplace manual for hiring and retaining autistic individuals, and includes information regarding the strengths of autistic individuals in the workplace, how to identify potential challenges for autistic individuals in their workplace, and recommendations for modifications to resolve the challenges. The results indicated that the intervention tool was effective in improving the self-efficacy of leaders regarding their ability to hire, support, and maintain an autistic employee.

Coworkers also have an important role to play in the support of autistic individuals during the Establishment phase (Johnson et al., 2020; Richardson et al., 2019; Sharpe et al.,

2022). Positive relationships with coworkers are critical for the social integration of the autistic individual (Doran et al., 2023). Coworkers can act as on-site job coaches or mentors to provide ongoing support (Coleman & Adams, 2018; Seagraves, 2021), and provide advice to the autistic employee as they integrate into the workplace (Hedley et al., 2018). Providing coworkers with autism awareness training can be helpful for promoting coworker support and participation in the autistic individual's work experience (Franklin, 2021; Khalifa et al., 2019; Seagraves, 2021).

Workplace Cultural Environment Facilitators. Several facilitators were also noted in the literature regarding ways to combat stigma, discrimination, and mistreatment. Mistreatment of autistic individuals is reduced when employers and coworkers are open-minded (Dreaver et al., 2020) and are aware and understanding of autism (Diener et al., 2020; Dreaver et al., 2020; Hedley et al., 2018; Johnson et al., 2020; Seva et al., 2022; Wen et al., 2024), and when the workplace fosters a culture of acceptance, respect, understanding, accommodation, inclusivity, and fairness (Chen et al., 2015; Cooper, 2022; Lee et al., 2022; Lindsay et al., 2019; Seva et al., 2021; Raymaker et al., 2023; Waisman-Nitzan et al., 2021). As noted in previous sections, workplace education and training on autism was noted by several studies as useful for promoting an inclusive culture (Bennett & Goodall, 2021; Black et al., 2020; Coleman & Adams, 2018; Grenawalt et al., 2020; Hedley et al., 2017a; Hendricks, 2010; Lindsay et al., 2019; Seagraves, 2021; Seva et al., 2022; Waisman-Nitzan et al., 2021).

Other aspects of workplace culture have been reported as being supportive of autistic employees' well-being, including cultures that are diverse and disability-inclusive (Franklin, 2021; Grenawalt et al., 2020; Haskins, 2019; Hayward et al., 2019; Raymaker et al., 2023; Seva et al., 2022), allow opportunities to develop and apply new skills and interests (Bennett & Goodall, 2021), promote freedom to be autonomous and creative (Bennett & Goodall, 2021;

Colorosa, 2016; Raymaker et al., 2023; Seva et al., 2022), focus on outcomes rather than on the way the work is completed (Colorosa, 2016; Seagraves, 2021; Seva et al., 2022), promote patience (Borromeo, 2020) and knowledge sharing (Julian & Barron, 2019), and allows autistic individuals to be openly autistic without having to mask (Raymaker et al., 2023). Additionally, autism-supportive cultures are ones that are celebratory of successes (Colorosa, 2016; Julian & Barron, 2019) and show constant appreciation (Seva et al., 2022), and are consistent yet accommodating of varying skills and abilities (Colorosa, 2016; Seva et al., 2022). Other studies reported that autistic individuals appreciate work environments in which they feel accepted and valued (Bennett & Goodall, 2021; Franklin, 2021; Raymaker et al., 2023), where there is a focus on strengths (Black et al., 2020), where there is a sense of community (Grenawalt et al., 2020; Raymaker et al., 2023), and where there is stability and consistency (Seva et al., 2022).

Learning and Training Facilitators. Several past reviews and primary studies noted the importance of proper training for autistic individuals when they begin work (Bhuiyan et al., 2022; Franklin, 2021). Trainings should be personalized to autism and include additional topics that may not be included in traditional onboarding trainings, such as communication and interpersonal skills; acclimation to the work environment; problem solving skills; workplace rules, schedules, and policies; emergency procedures; navigating the building; when to take breaks; and how to get to and from work (Bhuiyan et al., 2022; Dreaver et al., 2020; Hendricks, 2010; Seagraves, 2021). Learning also tends to be retained more when the training is conducted on-site in the work environment (Ditchman et al., 2018; Hendricks, 2010; Johnson et al., 2020; Khalifa et al., 2019; Lattimore et al., 2006; Liu et al., 2013; Seagraves, 2021), and when modeling, chunking of information into smaller sections, reward systems, prompts, and hands-on learning approaches are used, with support lessening over time as the skill is learned (Bhuiyan et

al., 2022; Colorosa, 2016; Hendricks, 2010; McKnight-Lizotte, 2018; Rebholz, 2012; Seagraves, 2021; Taylor, 2017). Furthermore, trainings that utilize video modeling, technology-based learning, role playing, visual supports, written instructions, virtual reality, and audio prompting have received much support in the literature (Bennett & Goodall, 2021; Bhuiyan et al., 2022; Bross et al., 2019; 2020a, 2020b; Burke et al., 2010; Chen et al., 2015; Ezerins et al., 2023; Johnson et al., 2020; Khalifa et al., 2019; Lattimore et al., 2008; McKnight-Lizotte, 2018; Munandar et al., 2020; Rausa et al., 2016). Utilizing peer mentors or job coaches to conduct training, model behavior, and provide on-going support can also be effective (Bhuiyan et al., 2022; Dreaver et al., 2020; Johnson et al., 2020; Khalifa et al., 2019; Seva et al., 2022). Autistic individuals should also be allowed extended time to learn new skills (Colorosa, 2016; Richardson et al., 2019), and should be offered ongoing support, feedback, and structure (Bhuiyan et al., 2022; Seva et al., 2022). The frequency, speed, and intensity of coaching and training should be tailored to the individual's skill and ability level (Bhuiyan et al., 2022; Hedley et al., 2017a). Training should also be accompanied by reassurance, encouragement, and appropriate and positive feedback and reinforcement (Dreaver et al., 2020; Hedley et al. 2018).

Support Services Facilitators. Many of the reviewed studies advocated for autism-specific changes to support services, systems, and policies that would promote positive outcomes in the Establishment phase (Espelöer et al., 2023; Khalifa et al., 2019; Hedley et al., 2018; Richardson et al., 2019; Sharpe et al., 2022). A common theme was the need for improved collaboration between vocational rehabilitation services, families, employers, and the autistic individual (Chen et al., 2015; Dreaver et al., 2020; Johnson et al., 2020; Stofferahn, 2017). The need for continued support after hiring, especially from job coaches, was noted as important for ensuring integration into employment, promoting information sharing between employers and

support services, and helping the individual ask for accommodations, learn the job skills, and navigate any disruptions that may arise (Di Francesco, 2022; Doran et al., 2023; Dreaver et al., 2020; Franklin, 2021; Martin et al., 2022; Nicholas & Lau, 2019; Seagraves, 2021; Stofferahn, 2017; Thompson, 2018; Wen et al., 2023). Vocational services could also provide outside training to autistic individuals regarding personal care, transportation, setting realistic goals, appropriate physical boundaries, business writing, and workplace basics (Dreaver et al., 2020), and could provide leadership training and support groups for employers and general autism training for all employees (Dreaver et al., 2020; Franklin, 2021; Stofferahn, 2017).

Other Supports. Several other specific supports were mentioned in the literature. Family support was noted as impactful during the Establishment phase (Johnson et al., 2020; Sharpe et al., 2022), as well as communication between the autistic individual's family and the employer (Richardson et al., 2019). Additionally, autistic individuals would benefit from customized expectations, such that work hours, pay, and work tasks align with the individual and are decided based on continuous conversations (Coleman & Adams, 2018; Hedley et al., 2017a). A slower transition pace would also benefit many autistic individuals (Hedley et al., 2017a; Hedley et al., 2018; Rebholz, 2012). Access to technology was also noted as a facilitator, including familial support for purchasing and training on technological supports and early access to technological accommodations (Thompson, 2018).

# Summary of Establishment Phase

The Establishment phase included challenges and facilitators related to beginning a new job, such as training and relationship development. Table 3 provides a summary of which challenges and facilitators in the Establishment phase have strong, moderate, and limited evidence in the literature.

Table 3
Summary of Establishment Phase Findings

	Challenges	Facilitators
	Disclosure Challenges	Disclosure Facilitators
Strong	• Interpersonal Challenges	• Interpersonal Facilitators
Evidence	Workplace Culture	Workplace Culture Facilitators
	Challenges	• Learning and Training Facilitators
	Mental Health Challenges	• Support Services Facilitators
Moderate	Support Services	• None
Evidence	Challenges	
Limited	• Other Challenges (e.g.,	• Other Facilitators (e.g., slower
Evidence	learning new skills, self-	transition pace, access to technology
	care)	supports)

Interpersonal challenges were the most significant challenge reported in the Establishment phase. Difficulties with social interactions with coworkers and leaders can impact socialization and integration into the workplace, so it is critical to provide support for social interactions when the autistic individual joins the workplace. The most overarching facilitator that can improve social relations is an inclusive workplace culture. Workplace cultures that promote acceptance, respect, accommodation, and understanding are critical for reducing stigma and discrimination, ensuring proper accommodations, improving mental health of autistic

employees, and reducing miscommunication. Thus, fostering positive workplace cultures is an effective place to start for employers who aim to improve employment outcomes for autistic individuals. This single alteration can ameliorate many of the challenges of the Establishment phase.

Additionally, disclosure was a significant challenge during the Establishment phase, as disclosing a disability can be risky if the workplace is not accommodating. Thus, employers should also strive to promote safe environments for disclosure. This will benefit the employer and the autistic employee alike, as disclosure can lead to better understanding of the individual's needs and better accommodations, which can improve performance and work attitudes.

Learning and training are also critical when the autistic employee joins the organization. Although there was not much evidence regarding the specific challenges autistic individuals face during training, the literature provided evidence for many supports that can improve learning and retention for autistic individuals, such as expanding training topics to include other areas of struggle for autistic individuals and allowing for longer training periods. Although these training facilitators have received ample evidence and are likely to be useful for practitioners and employers, more research should be conducted to align these facilitators with specific challenges associated with training and learning for autistic individuals.

### Maintenance

The Maintenance stage in Super's (1994) life-span, life-space model involves post-hire, mid-career goals relating to advancing to new levels in one's field, finding security in one's role, and maintaining competitive advantage. In the current review, the Maintenance stage included topics such as job performance, organizational commitment, burnout, engagement, promotion, and turnover.

## Challenges

Workplace Physical Environment. A commonly reported barrier during the Maintenance phase was overwhelming physical working environments that aggravate the autistic person's sensory sensitivities and impact their performance (Bennett & Goodall, 2021; Bury et al., 2021a; Cooper, 2022; Ezerins et al., 2023; Nagib & Wilton, 2021; Nicholas & Lau, 2019). This includes environments with loud noises (Black et al., 2019; Julian & Barron, 2019; Richards, 2012; Vijayakumar, 2021; Waisman-Nitzan et al., 2019), fluorescent lighting (Julian & Barron, 2019; Pfeiffer et al., 2017; Richards, 2012), visual distractions (Pfeiffer et al., 2017), and limited space or lack of private spaces (Richards, 2012; Seva et al., 2022; Vincent & Fabri, 2020; Waisman-Nitzan et al., 2019). Additionally, crowded spaces (Pfeiffer et al., 2017), unregulated workplace temperatures (i.e., either too hot or too cold; Pfeiffer et al., 2017), multi-site working requirements (Vincent & Fabri, 2020), and uncomfortable work uniforms (Pfeiffer et al., 2017) can also be very uncomfortable for the autistic worker.

Working Conditions. Similarly, several conditions of the work itself were also noted as barriers for performance for autistic employees (Bennett & Goodall, 2021). The most commonly reported challenges included lack of routines and structure in the work (Hayward et al., 2016; Lorenz et al., 2016; Nagib & Wilton, 2021; Pfeiffer et al., 2017; Waisman-Nitzan et al., 2019), underemployment (i.e., not given the opportunity to work full-time or being over-qualified; Hayward et al., 2016, 2018), long working hours or irregular working hours (Baldwin et al., 2014; Coleman & Adams, 2018; Nagib & Wilton, 2021; Waisman-Nitzan et al., 2019), job insecurity or instability (Ezerins et al., 2023; Hayward et al., 2018; Jones, 2023), and inadequate pay or benefits (Baldwin et al., 2014; Hillier & Galizzi, 2014; Jones, 2023). Some studies also noted challenges such as workplaces being understaffed (Pfeiffer et al., 2017), frequent work

interruptions (Rebholz, 2012), fast-paced work environments (Taylor, 2017), not enough breaks (Pfeiffer et al., 2017), lack of development and advancement opportunities (Hillier & Galizzi, 2014), long commutes (Pfeiffer et al., 2017), and few supports on the job (Vijayakumar, 2021). Interestingly, although several studies reported in the previous Establishment phase supported autonomous work (Bennett & Goodall, 2021; Colorosa, 2016; Raymaker et al., 2023; Seva et al., 2022), a recent study found that, for those with a high number of autistic traits, high job control was associated with poor physical health (Hayakawa et al., 2015). Thus, the amount of job autonomy the autistic individual has should be tailored to their needs to promote engagement.

Change. Dealing with change in the workplace was also an important challenge noted in the Maintenance phase that can impact performance (Bennett & Goodall, 2021; Brownlow et al., 2018; Ezerins et al., 2023; Hayward et al., 2016; Hedley et al., 2018; Rebholz, 2012; Waisman-Nitzan, 2021). This included unanticipated changes in routine or schedule (Chen et al., 2015; Espelöer et al., 2023; Hedley et al., 2018; Hendricks, 2010; Pfeiffer et al., 2017; Richardson et al., 2019), organizational restructuring (Nagib & Wilton, 2021), new job demands (Ezerins et al., 2023), changes in managers or coworkers (Rebholz, 2012), and changing offices (Estival et al., 2023).

Work Tasks and Roles. Another main theme in the Maintenance phase was issues with the job tasks and responsibilities themselves (Vijayakumar, 2021). A common issue was the work tasks not being suited for their interests (Nagib & Wilton, 2021; Nicholas & Lau, 2019; Pfeiffer et al., 2017; Waisman-Nitzan et al., 2019), and thus being dissatisfying (Baldwin et al., 2014; Bennett & Goodall, 2021), or under- (Braudis, 2017; Nagib & Wilton, 2021; Pfeiffer et al., 2017; Rebholz, 2012) or over-stimulating (Nagib & Wilton, 2021). Many papers also noted challenges with overly challenging or demanding workloads (Black et al., 2019; Coleman &

Adams, 2018; Jones, 2023; Nagib & Wilton, 2021), due to time pressure (Lorenz et al., 2016; Nagib & Wilton, 2021; Wen et al., 2023), the cognitive demands of the work (Lorenz et al., 2016), or having too many tasks to balance (Black et al., 2019; Jones, 2023). Furthermore, receiving unclear or inadequate instruction can also be a significant barrier (Baldwin et al., 2014; Braudis, 2017; Chen et al., 2015; Hendricks, 2010; Testoni et al., 2019; Waisman-Nitzan et al., 2019). Receiving constructive feedback may also be an issue that prevents improvements in performance, as coworkers may not know how to approach the autistic employee with feedback, and the autistic employee may not take the criticism well and not accept that they are wrong (Taylor, 2017). Additionally, studies noted the barrier of not being able to switch to less social roles (Nagib & Wilton, 2021), as difficulties with communication with customers (McKnight-Lizotte, 2018; Taylor, 2017) and colleagues (Hendricks, 2010), as well as the associated stress from poor social interactions (Waisman-Nitzan et al., 2021), can impact performance (Chen et al., 2015; Waisman-Nitzan et al., 2020).

These issues with demands and misaligned roles can lead to increased stress at work that can be difficult to manage (Hayward et al., 2022; Hedley et al., 2018), especially for autistic women (Nagib & Wilton, 2021). Burnout is also a commonly reported outcome for autistic employees from extended misalignment with the work and too little recovery time (Ezerins et al., 2023; Lee et al., 2022; Raymaker et al., 2023).

Self-Regulation and Executive Functioning. Challenges related to self-regulation and executive functioning represent another significant theme for the Maintenance phase (Black et al., 2019; Hendricks, 2010; Jones, 2023; Wen et al., 2023). Specifically, past reviews and primary studies reported that autistic individuals can often struggle with multitasking (Braudis, 2017; Ezerins et al., 2023; Hayward et al., 2016; Waisman-Nitzan et al., 2019, 2021), task

management and prioritization (Bury et al., 2021a; Ezerins et al., 2023; Jones, 2023; Rebholz, 2012; Tomczak, 2022; Waisman-Nitzan et al., 2019), time management (Bury et al., 2021a; Hedley et al. 2018a; Jones, 2023; Tomczak, 2022), organization (Hendricks, 2010; Jones, 2023; Tomczak, 2022), managing their daily routine, especially regarding being inflexible in their routines (Black et al., 2019; Chen et al., 2015; Seva et al., 2022; Wen et al., 2023), problem solving (Braudis, 2017; Hendricks, 2010), maintaining attention and avoiding distraction (Chen et al., 2015; Cooper, 2022; Estival et al., 2023; Hedley et al., 2018; Hendricks, 2010; Seva et al., 2022), and interpreting work instructions or protocols (Bury et al., 2021a; Estival et al., 2023; Ezerins et al., 2023). They may also struggle with knowing what to do with downtime (Taylor, 2017), and be afraid to ask too many questions or ask for too much help (Braudis, 2017; Estival et al., 2023; Rebholz, 2012; Remington et al., 2022). Autistic men may have greater difficulty with executive functioning than autistic women (Nagib & Wilton, 2021).

Other intrapersonal challenges were also mentioned in the literature, including difficulties with controlling and expressing emotions (Estival et al., 2023; Richardson et al., 2019; Tomczak, 2022), difficulty managing stress (Black et al., 2019; Braudis, 2017; Tomczak, 2022; Vijayakumar, 2021), fear around being fired if they make a mistake (Nagib & Wilton, 2021; Raymaker et al., 2023; Richardson et al., 2019), and difficulties with self-awareness or self-reflection (Cooper, 2022; Hayward et al., 2016; Taylor, 2017; Wen et al., 2023). Furthermore, autistic employees may struggle with their self-esteem (Raymaker et al., 2023; Testoni et al., 2019), and may feel that their self-worth is based solely in job success and utilizing intellectual prowess due to difficulties with relationships (Rebholz, 2012).

Other Challenges. A few other specific challenges were also noted in the Maintenance phase. First, difficulties with leaders can impact performance, such as micromanagement and

over-supervision (Nagib & Wilton, 2021; Pfeiffer et al., 2017), leaders assuming that the autistic individual does not know how to do something (Rebholz, 2012), and leaders being concerned with performance management for the autistic employee (Wen et al., 2023), but having different perceptions regarding what should be expected of the autistic individual and the type of support the autistic person needs (Scott et al., 2015). Additionally, challenges related to support services included insufficient services for maintaining employment (Hendricks, 2010), need for individualized support (Bennett & Goodall, 2021), and lack of access to workplace counseling (Baldwin et al., 2014). Additionally, difficulties may arise in this phase from unrealistic career expectations (Braudis, 2017) or ambiguity around expectations for the future (Sharpe et al., 2022). Similar to the previous Establishment phase, difficulty keeping a job was an issue in the Maintenance phase (Frank et al., 2018; Hayward et al., 2016; Taylor et al., 2015), especially for autistic women (Taylor et al., 2015). Autistic women also tend experience greater gender-related expectations in the workplace, especially about appearance, that place them at a disadvantage (Nagib & Wilton, 2021). Finally, a past review noted that many attempts to address autismrelated issues in the workplace are aimed at the autistic individual, rather than altering the environment to be a better fit for the individual (Bennett & Goodall, 2021).

## **Facilitators**

Workplace Physical Environment Facilitators. Given that overly stimulating physical environments can be significant barriers for autistic employees (Bennett & Goodall, 2021; Bury et al., 2021a; Cooper, 2022; Ezerins et al., 2023; Nagib & Wilton, 2021; Nicholas & Lau, 2019), many past reviews and primary studies offered methods for promoting work environments that are not sensorially overwhelming (Bennett & Goodall, 2021; Harvery et al., 2021; Hayward et al., 2019; Hendricks, 2010; Khalifa et al., 2019; Underhill, 2022; Wen et al., 2023). As can be

expected, these recommendations align closely with the challenges related to the physical environment reported above. This includes reducing the noise level (Hendricks, 2010; Waisman-Nitzan et al., 2021) and allowing the use of headphones for noise management (Hedley et al., 2018; Lee et al., 2022; Lindsay et al., 2019; Pfeiffer et al., 2017; Seagraves, 2021; Taylor, 2017), preventing excessive interruptions (Hendricks, 2010), preventing crowding (Hendricks, 2010), providing dedicated quiet spaces (Hillier & Galizzi, 2014; Taylor, 2017; Waisman-Nitzan et al., 2021) or private work areas (Lee et al., 2022; Lorenz et al., 2016; Seagraves, 2021; Tomczak, 2022; Waisman-Nitzan et al., 2021), reducing the use of fluorescent lights (Baldwin et al., 2014; Hedley et al., 2018; Hendricks, 2010; Lindsay et al., 2019), and reducing visual distractions (Seagraves, 2021; Waisman-Nitzan et al., 2021). Additionally, allowing for breaks when overstimulated (Waisman-Nitzan et al., 2021), utilizing physical proximity and touch only when absolutely necessary (Seagraves, 2021), and allowing the autistic individual to have the autonomy to make adjustments to their environment as needed (Pfeiffer et al., 2017) can also be useful supports. Studies also reported the benefits of allowing the autistic individual to work from home in order to manage their working environment to their liking (Bontempo, 2009; Lee et al., 2022; Lindsay et al., 2019; Taylor, 2017).

Working Conditions Facilitators. The most commonly reported facilitator regarding working conditions was consistency and structure (Borromeo, 2020; Goldfarb et al., 2023; Haskins, 2019; Seagraves, 2021; Tomczak & Ziemianski, 2023; Underhill, 2022; Wen et al., 2023), including consistent routines (Cooper, 2022; Dreaver et al., 2020; Goldfarb et al., 2023; Pfeiffer et al., 2017; Richardson et al., 2019), schedules (Franklin, 2021; Hendricks, 2010; Johnson et al., 2020; Seagraves, 2021; Waisman-Nitzan et al., 2021), and work assignments (Remington et al., 2022; Seagraves, 2021; Waisman-Nitzan et al., 2021). Additionally, role

clarity (Kállai, 2018; Pfeiffer et al., 2017), adequate pay and benefits (Hayward et al., 2019; Pfeiffer et al., 2017), autonomy and control in one's work (Goldfarb et al., 2023; Hayward et al., 2019; Jones, 2023; Nagib & Wilton, 2021; Pfeiffer et al., 2017), and ability to alter the conditions of the work (e.g., hours, tasks) to fit needs (Baldwin et al., 2014; Bhuiyan et al., 2022; Braudis, 2017; Hayward et al., 2019; Hillier & Galizzi, 2014; Jones, 2023; Lee et al., 2022; Lindsay et al., 2019; Pfeiffer et al., 2017; Tomczak, 2022; Waisman-Nitzan et al., 2021; Wen et al., 2023) were reported as important facilitators. Studies also noted the benefits of having scheduled and structured breaks and social time (Seagraves, 2021; Waisman-Nitzan et al., 2021), leaders who avoid micromanaging their autistic employees (Nagib & Wilton, 2021; Pfeiffer et al., 2017), and having the option to switch to other tasks or take a break when overwhelmed (Taylor, 2017). As noted above when discussing challenges during the Maintenance phase, job autonomy appears to be a double-edged sword for the population of autistic employees, as it can be beneficial for some, and detrimental for others (Hayakawa et al., 2015). Thus, autonomy should be provided such that it allows for flexibility in the job tasks, schedule, or method to fit the individual's needs, but not at the expense of structure and guidance.

Change Facilitators. Facilitators and supports for managing change largely included planning for changes (Hedley et al., 2018), and providing advanced notice to the employee regarding disruptions to routines (Bennett & Goodall, 2021; Dreaver et al., 2020), changes in personnel (Taylor, 2017), or new tasks (Dreaver et al., 2020).

Work Tasks and Role Facilitators. Many facilitators were noted to ameliorate role-related challenges and improve performance and satisfaction. The most prominent facilitator mentioned is ensuring the job is a good match for the individual's skills, interests, and strengths (Colorosa, 2016; Diener et al., 2020; Dreaver et al., 2020; Ezerins et al., 2023; Franklin, 2021; Jones, 2023;

Kállai, 2018; Lee et al., 2022; Nicholas & Lau, 2019; Pezzimenti et al., 2023; Pfeiffer et al., 2017; Remington et al., 2022; Seva et al., 2022; Sharpe et al., 2022; Vijayakumar, 2021; Wen et al., 2023), and adapting the content of the job (Bennett & Goodall, 2021; Black et al., 2020; Hedley et al., 2018; Hendricks, 2010; Johnson et al., 2020; Lindsay et al., 2019; Raymaker et al., 2023) or the method through which it is performed (Bennett & Goodall, 2021; Hendricks, 2010; Underhill, 2022; Waisman-Nitzan et al., 2019) to accommodate their needs. Certain characteristics about the job itself were also noted as likely to be a good match for an autistic employee, including jobs that are methodical (Black et al., 2019; Borromeo, 2020), precise (Borromeo, 2020; Testoni et al., 2019), highly structured (Johnson et al., 2020), not customerfacing (Baldwin et al., 2014), and allow the opportunity to focus intently, recognize patterns, and general solutions (Jones, 2023). Additionally, autistic employees reported wanting work that allows them to make a meaningful contribution to the workplace or society at large (Bennett & Goodall, 2021; Doran, 2021; Goldfarb et al., 2023; Raymaker et al., 2023; Remington et al., 2022).

Leadership Facilitators. Work performance can be facilitated by leaders providing clear written instructions and expectations for performance (Baldwin et al., 2014; Bennett & Goodall, 2021; Borromeo, 2020; Dreaver et al., 2020; Haskins, 2019; Hedley et al., 2018; Hendricks, 2010; Johnson et al., 2020; McKnight-Lizotte, 2018; Raymaker et al., 2023; Rebholz, 2012), allowing for growth and development of new skills (Dreaver et al., 2020; Hayward et al., 2019; Julian & Barron, 2019; Raymaker et al., 2023; Sharpe et al., 2022), and providing leniency when the autistic individual is having a "bad day" (Baldwin et al., 2014). Leaders should also provide direct and timely feedback to the autistic employee (Ezerins et al., 2023; Raymaker et al., 2023; Waisman-Nitzan et al., 2021), including both what they are doing wrong and how to fix it

(McKnight-Lizotte, 2018), and provide informal performance evaluations more regularly than annually or semi-annually as is common (Baldwin et al., 2014; Colorosa, 2016; Dreaver et al., 2020; McKnight-Lizotte, 2018). Positive feedback should also be given to reinforce optimal performance (Taylor, 2017). Additionally, regular meetings with the leader to discuss performance and responsibilities can be effective for continual performance management (Bennett & Goodall, 2021). Several tools for facilitating performance were also mentioned by the reviewed papers (Khalifa et al., 2019), such as Personal Digital Assistants (PDAs; Bennett & Goodall, 2021; Ciccarelli & Hodges, 2016; Gentry et al., 2015; Nicholas et al., 2015; Seagraves, 2021), video modeling (Khalifa et al., 2019; Le et al., 2021; Nicholas et al., 2015; Seagraves, 2021), audio cuing using bug-in-ear technology (i.e., earpiece through which a coach or trainer can provide discrete directions to the autistic individual; Bennett & Goodall, 2021; Seagraves, 2021), and activity schedules that show pictures of each step to perform the task (Bennett & Goodall, 2021).

Leadership is not only critical for performance management, but also for maintaining the autistic employee's satisfaction, commitment, and engagement, and reducing turnover intentions (Parr & Hunter, 2014). Two reviewed studies (Haskins, 2019; Parr & Hunter, 2014) reported that authentic leadership was the most effective form of leadership for autistic individuals. Specifically, Parr and Hunter (2014) found that the leadership behaviors that were most important for autistic employees' outcomes included understanding employees' social and communication limitations, providing support for social aspects of work, respecting everyone, and implementing structure to provide an organized, concrete, and systematic method to complete tasks. Furthermore, another study found that the emotional-laden dimension of transformational leadership—inspirational motivation—led to increases in anxiety for autistic

employees and subsequently reduced organizational commitment. This dimension involves behaviors aimed at inspiring others and providing a clear vision for the future. However, the transformational leadership dimensions of idealized influence and individualized consideration reduced anxiety and improved organizational commitment. Idealized influence involves acting as a role model to enhance trust, respect, and identification among the team, and individualized consideration involves paying attention to the unique needs of each follower. The positive impacts of these two dimensions for autistic followers was proposed to be due to their focus on the individual's needs and providing structure and clarity (Parr et al., 2013). Additionally, Spoor et al. (2022) reported that supervisor support was associated with increased affective organizational commitment and engagement, and lower continuance commitment.

Self-Regulation and Executive Functioning Supports. Many supports were also proposed to assist with challenges related to self-regulation and executive functioning. Setting clear goals each day (Ball, 2023; Colorosa, 2016), breaking down goals into smaller chunks (Taylor, 2017), displaying goals and progress visually (Colorosa, 2016), and connecting the individual's goals to the overall organization goals (Colorosa, 2016), can help guide behavior and performance.

Additionally, providing reminders throughout the day (Seagraves, 2021), using assistive technology or tools for scheduling and organization (Black et al., 2019; Chen et al., 2015; Hedley et al., 2017b; Hendricks, 2010), and using reward systems (Seva et al., 2022) have also been reported as useful for self-regulation. Leaders and coworkers can help the autistic individual set priorities (Taylor, 2017; Waisman-Nitzan et al., 2021), determine what to do between tasks or during downtime (Hendricks, 2010; Waisman-Nitzan et al., 2021), and provide redirection if they become distracted (Hedley et al., 2018). Autistic employees should also be encouraged to ask questions as issues arise (Braudis, 2017; Taylor, 2017; Vijayakumar, 2021),

take breaks and switch to less stressful tasks if issues come up (Taylor, 2017), and develop effective problem-solving skills (Black et al., 2019; Braudis, 2017; Dreaver et al., 2020; Julian & Barron, 2019).

Other Facilitators. In regard to support services in the Maintenance phase, studies noted the need for long-term support from external institutions and the organization to prevent declines in performance over time and assist with challenges that may arise later in the autistic person's career (Ezerins et al., 2023; Hendricks, 2010; Lorenz et al., 2016). Job coaches can provide this support (Di Francesco et al., 2021), or colleagues at work can learn to take over the support role to provide continued and timely support on the job (Hendricks, 2010). Also noted was the importance of support for other areas of life, such as residential, social, or medical issues (Hendricks, 2010).

A few other interpersonal and cultural facilitators were also noted, including continued workplace training on communication to maintain job performance (Franklin, 2021), a focus on work-life balance (Hayward et al., 2019; Raymaker et al., 2023), and continued familial support (Pfeiffer et al., 2017).

## Summary of Maintenance Phase

The Maintenance phase included challenges and facilitators related to job performance and job attitudes. Table 4 provides an overview of the challenges and facilitators in the Maintenance phase that have strong, moderate, and limited evidence in the literature.

**Table 4**Summary of Maintenance Phase Findings

	Challenges	Facilitators
Strong Evidence	<ul> <li>Workplace Physical         Environment Challenges     </li> <li>Working Conditions         Challenges     </li> <li>Change</li> <li>Work Task and Role         Challenges     </li> <li>Self-Regulation and         Executive Functioning         Challenges     </li> <li>Intrapersonal Challenges</li> </ul>	<ul> <li>Workplace Physical Environment Facilitators</li> <li>Working Conditions Facilitators</li> <li>Work Task and Role Facilitators</li> <li>Self-Regulation and Executive Functioning Facilitators</li> <li>Leadership Facilitators</li> </ul>
Moderate Evidence	<ul> <li>Difficulties with Leaders</li> <li>Other Challenges (e.g., insufficient support services, gender-related expectations)</li> </ul>	<ul> <li>Change Facilitators</li> <li>Other Facilitators (e.g., long-term support, continued communication training)</li> </ul>
Limited Evidence	• None	• None

Several significant themes emerged in the Maintenance phase, many of which related to fit between the autistic individual and the work. First, the physical environment of the workplace can be a significant barrier for autistic individuals and can impact their performance. Employers can make their workplaces more accommodating of autistic individuals by limiting noise and fluorescent lights and providing private spaces to work or decompress. Second, it is critical to ensure that the job tasks and responsibilities are matched to the individual's interests and abilities. Additionally, other modifications to working conditions also received ample evidence in the literature for ensuring fit, such as consistency with routines and structure, and limited change without advanced notice. Overall, employers should promote open conversations about needs in terms of the physical workspace, job tasks, and conditions of the job to ensure the work is well-aligned with the autistic individual's needs. This can promote successful performance and prevent burnout.

Leadership is also critical in this phase. The literature provided strong evidence for the influence that leaders can have on the success of autistic individuals, such as by providing the guidance and structure needed to help the autistic individual with self-regulation and executive functioning. Leaders can also provide needed feedback and development opportunities to promote long-term performance. Similar to the conditions of the work, successful leadership of autistic individuals is also about fit. The literature suggests that autistic individuals prefer clear expectations and structure from leaders, but do not want to be micromanaged. Therefore, leaders should take an individual approach to their relationships with autistic employees and provide adapted and personalized support based on the individual's needs.

# **Disengagement**

Finally, the Disengagement stage in Super's (1994) life-span, life-space theory involves late-career goals such as moving toward retirement, reducing work hours, and focusing on essential work functions. This career stage is currently extremely underrepresented in the literature, and only two papers were identified that spoke to issues of this stage (Frank et al., 2018; Hendricks, 2010).

# **Challenges**

Comorbidities. A topic that was mentioned in both the reviewed papers was comorbidities that may appear or become more prominent as the autistic individual ages, including depression, obsessive-compulsive disorder, orthopedic diseases, and respiratory diseases (Frank et al., 2018), as well as epilepsy (Hendricks, 2010). These comorbidities can cause difficulty with fulfilling job responsibilities due to a deterioration in skills and may appear earlier in life for those who also have low cognitive abilities (Hendricks, 2010).

Retiring Early. Relatedly, Frank et al. (2018) reported that 17% of the sampled autistic individuals who had ever been employed retired early due to health reasons. More research in this area is clearly needed, though these results may hint at why so few studies regarding the working lives of autistic adults include late-career experiences, as autistic individuals may have already exited the workforce prior to traditional retirement age.

### **Facilitators**

Autism-Specific Support. Only one facilitator was reported in this stage—employment support that takes into account the specific social, sensory, and health-related aspects of autism and how these aspects impact the ability to work (Frank et al., 2018). More research is

desperately needed in this phase to determine supports that can prolong meaningful work and facilitate retirement for autistic individuals.

# Summary of Disengagement Phase

The Disengagement phase included challenges and facilitators related to retirement. Only two studies identified by the current review discussed late-career topics, thus there is limited evidence for this phase overall. Table 5 provides an overview of the challenges and facilitators in the Disengagement phase.

Table 5
Summary of Disengagement Phase Findings

	Challenges	Facilitators
Strong	• None	• None
Evidence	- Ivone	- Trone
Moderate	• None	• None
Evidence	- Ivolic	rone
Limited	• Comorbidities	Autism-Specific Support
Evidence	Retiring Early	ristion specific support

# **Summary of Research Question 1**

With Research Question 1, I aimed to identify the challenges experienced by autistic individuals in each career phase, and the facilitators that can ameliorate these challenges. This review process identified several themes across the career span that have received strong support in the literature, and that can be used to better understand the experiences of autistic individuals at work and provide well-informed support. Several areas for additional research were also identified by highlighting limitations in our understand of autistic individuals' experiences. Table 6 provides an overview of the findings from each career phase.

**Table 6**Summary of Findings from All Phases

	Career Phase	Challenges	Facilitators
Strong Evidence	Growth	<ul> <li>Transitioning from High School</li> <li>College Challenges</li> <li>Support Services</li> </ul>	<ul> <li>High School         <ul> <li>Facilitators</li> </ul> </li> <li>Transitioning from                High School (to                 Employment)                 Facilitators</li> <li>Transitioning from                 College Facilitators</li> </ul>
	Exploration	<ul> <li>Qualification and Preparation Challenges</li> <li>Job Search Challenges</li> <li>Application Process Challenges</li> <li>Interview Challenges</li> <li>Interpersonal Challenges</li> <li>Support Services Challenges</li> </ul>	<ul> <li>Qualification and Preparation Facilitators</li> <li>Job Search Facilitators</li> <li>Interview Facilitators</li> <li>Interpersonal Facilitators</li> <li>Support Services Facilitators</li> </ul>
	Establishment	<ul> <li>Disclosure</li> <li>Interpersonal Challenges</li> <li>Workplace Culture</li> <li>Mental Health</li> </ul>	<ul> <li>Disclosure         <ul> <li>Facilitators</li> </ul> </li> <li>Interpersonal             <ul> <li>Facilitators</li> </ul> </li> <li>Workplace Culture</li></ul>

Table 6 – Continued

Table 6 – Co			
_	Career Phase	Challenges	Facilitators
	Maintenance	<ul> <li>Workplace         Physical         Environment</li> <li>Working         Conditions</li> <li>Change</li> <li>Work Tasks and         Roles</li> <li>Self-Regulation         and Executive         Functioning</li> <li>Intrapersonal         Challenges</li> </ul>	<ul> <li>Workplace Physical Environment Facilitators</li> <li>Working Conditions Facilitators</li> <li>Work Task and Role Facilitators</li> <li>Self-Regulation and Executive Functioning Facilitators</li> <li>Leadership Facilitators</li> </ul>
_	Disengagement	• None	• None
	Growth	• None	• None
	Exploration	<ul> <li>Psychological Impacts of Application Process</li> <li>Transportation</li> </ul>	• Application Process Facilitators
Moderate	Establishment	Support Services     Challenges	• None
Evidence	Maintenance	<ul> <li>Difficulties with Leaders</li> <li>Other Challenges (e.g., insufficient support services, gender-related expectations)</li> </ul>	<ul> <li>Change Facilitators</li> <li>Other Facilitators         <ul> <li>(e.g., long-term</li> <li>support, continued</li> <li>communication</li> <li>training)</li> </ul> </li> </ul>
	Disengagement	• None	• None
Limited	Growth	High School Challenges	<ul> <li>Support Services         <ul> <li>Facilitators</li> </ul> </li> <li>Transitioning from         <ul> <li>High School (to</li> <li>College) Facilitators</li> </ul> </li> </ul>
Evidence	Exploration	<ul> <li>Other Challenges         (e.g.,         psychological         impacts, parental         overprotection)</li> </ul>	<ul> <li>Other Facilitators         (e.g., individual         characteristics,         transportation)</li> </ul>

Table 6 – Continued

	Career Phase	Challenges	Facilitators
Limited Evidence	Establishment	• Other Challenges (e.g., learning new skills, self-care)	• Other Facilitators (e.g., slower transition pace, access to technology supports)
	Maintenance	• None	• None
	Disengagement	<ul><li>Comorbidities</li><li>Retiring Early</li></ul>	Autism-Specific Support

# **RESEARCH QUESTION 2**

With Research Question 2, I evaluated the overall trends in the literature to determine if the career phases proposed in Super's (1994) life-span, life-space theory accurately represent the career experiences of autistic individuals, what changes to these phases should be made to be more representative of their experiences, and whether severity level of the autism diagnosis should be included in an adapted framework. I address each of these parts in turn below.

## **Research Question 2a**

Research Question 2a was: Does Super's theory accurately represent the career experiences of autistic individuals? After attempting to sort the literature into Super's five career phases, it does not appear that this framework fully represents the common career trajectories of autistic individuals. The job phases of Super's framework did not appear to be the most parsimonious way to organize the careers of autistic individuals. Slight modifications to the framework would improve the fit to autistic individuals' experiences. These proposed modifications are described below.

## **Research Question 2b**

Research Question 2b addressed what modifications to the theory could be made to better reflect the experiences of autistic individuals. Although Super's career phases appeared

moderately aligned with the career trajectories of autistic individuals reflected in the literature, a few modifications to the career phases could be made to better represent the career experiences of autistic individuals. Thus, I propose a few modifications that would improve the applicability to the autistic community. First, given the frequency with which autistic individuals voluntarily or involuntarily leave employed positions (Bury et al. 2021a, 2021b, 2022; Conte, 2021; Coleman & Adams, 2018; Frank et al., 2018; Hayward et al., 2016; Hyde, 2020; Meeks et al., 2015; Taylor, 2017; Taylor et al., 2015), the distinction between the Establishment and Maintenance phases may be unnecessary. Indeed, the most difficulty with utilizing Super's framework for the current review arose in the process of distinguishing between these two phases, and the choices regarding which work experiences belong in either phase was mostly arbitrary, as interpersonal challenges, skill learning, performance management, and job satisfaction, for example, could occur in either phase.

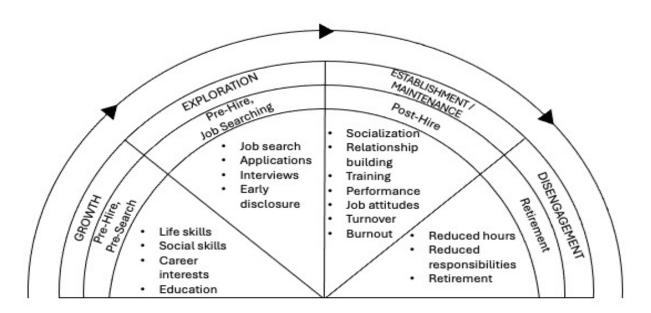
Additionally, given the often delayed or non-traditional pathways from school to employment of autistic individuals (Hurley-Hanson et al., 2020), the pre-employment phases of Growth and Exploration seem to overlap in many respects for autistic individuals. Thus, these phases may be better suited to having a clearer distinction regarding whether the individual is actively on the job market or not. That is, the Growth phase could involve pre-employment activities when the individual is not yet actively on the job market, and Exploration could involve pre-employment activities that occur once the individual is actively looking for a job. With this alteration, these phases would have more a meaningful distinction while still clearly relating to one another, and there would be a clear shift from the Growth phase to the Exploration stage that could also be re-cycled through should gaining employment be unsuccessful or the individual desires more general preparation before applying again.

Given the current state of the literature, the Disengagement phase seems mostly aligned with the experiences of autistic individuals, with the only consideration being that autistic individuals likely reach this phase earlier in their life than the general population (Frank et al., 2018). However, as was noted above, this phase is severely understudied, and more research will be required to determine if any other significant alterations to the Disengagement phase would make it more applicable to autistic individuals.

With this reasoning, I propose that the following four phases would better represent the career trajectories of autistic individuals than Super's original five phases: Pre-employment, not on the job market; Pre-employment, actively searching for a job; Post-hire; Retirement. Figure 2 below shows the proposed changes to Super's career phases.

Figure 2

Proposed Career Phases for Autistic Individuals



## **Research Question 2c**

The final part of Research Question 2 addressed whether the literature supports separate career frameworks for autistic individuals with a Level 1 autism diagnosis versus a Level 2 or 3 autism diagnosis. The results of this review do appear to support the distinction between severity levels in the discussion of the careers of autistic individuals. The four-phase career framework proposed above is based on the experiences of individuals with a low-to-mid severity (Level 1 or 2) diagnosis, as these individuals are often seeking employment to be able to support themselves and achieve independence (Bush & Tassé, 2017). Therefore, it appears that they attempt to follow a similar career path as non-disabled peers, as they are both approaching employment for similar reasons. The exclusion of low-severity autistic individuals from the workforce, then, is a diversity issue, such that they are a group that needs to be employed to support themselves, but are not receiving the same consideration and opportunities as others. As was outlined in the sections for Research Question 1 above, the accommodations and facilitators that would allow low-severity autistic individuals an equal opportunity are often minor, such as providing differential supervision (Bhuiyan et al., 2022) or alterations to traditional hiring processes (Raymaker et al., 2023).

On the other hand, the reviewed studies that addressed the work experiences of those with a higher-severity diagnosis were less common in the literature, and tended to focus on methods for teaching skills that could be utilized in a work setting (e.g., Bennett et al., 2013; Burke et al., 2010), reducing destructive or undesired behaviors (e.g., Reid et al., 2010; Wills et al., 2019), and improving interactions skills (e.g., Clavenna-Deane et al., 2020; Whittenburg et al., 2022). Generally, the position of many of these studies was that work is a form of constructive engagement for high-severity autistic individuals, through which they can develop

useful task-related, social, and self-care skills and improve their overall well-being (e.g., Taylor et al., 2014). Many of these studies focused on sheltered or supported employment opportunities (e.g., Wehman et al., 2017), with the focus being not on employment outcomes per se, but on overall well-being and treatment success (e.g., Mackey & Nelson, 2015; Reid et al., 2010). Therefore, the concept of a "career-span" may not be relevant for this group of individuals, as they are likely not aiming to advance in their position or eventually achieve financial independence. Thus, a career theory or framework for high-severity autistic individuals is likely not needed, and instead the literature can continue to focus on the benefits of constructive work for high-severity autistic individuals, and further develop methods for promoting health and well-being for these individuals through engaging work.

### **CHAPTER V**

### **DISCUSSION**

### SUMMARY OF CRITICAL FINDINGS

Autistic individuals are significantly underrepresented in the workforce (Bury et al., 2021b) due to the social communication and behavioral challenges they face (Chezan & Drasgow, 2022) that create barriers for obtaining and maintaining employment. Previous research on the employment experiences of autistic individuals has been scattered throughout various fields and disciplines, and has been limited in scope, usually focusing on particular questions or problems. Consequently, the overall patterns of careers for autistic individuals have remained unexamined. In the current review, I aggregated the findings of 258 primary studies and past reviews, utilizing Super's life-span, life-space theory (1994) as a framework of career phases.

In the Growth phase, the major challenges were those experienced during high school and college, and the impact of those challenges on the transitions between high school, college, and employment. In both high school and college, autistic individuals struggle with a lack of individualized focus on autistic students, lack of accommodations, and not enough focus on the development of skills that are critical for successfully attaining employment, such as social skills and life skills. Poor preparation in both of these educational domains can often lead to difficulty transitioning to the next stage. Additionally, graduation from both high school and college has impacts on employability down the line (Chiang et al., 2013; Migliore et al., 2012), thus it is critical to promote and facilitate graduation. Some facilitators that were noted both in the high school domain and in the college domain included dedicated social and cognitive skills training,

access to vocational training in the form of work study, internships, or job site visits, and early assistance with resume writing and practicing interview skills.

The Exploration phase included difficulties related to the job search and application processes. The most commonly-reported challenge in this phase was interviews, as interviews represent an insurmountable hurdle for many autistic individuals (Raymaker et al., 2023). The inherent social aspects involved in interviews as an assessment method put autistic individuals at a disadvantage, and often prevent them from attaining a job they are well qualified for. Other major challenges in the Exploration phase included employer lack of knowledge about autism preventing fair hiring experiences, risks associated with disclosing one's diagnosis during the hiring stage, and having difficulty finding jobs that are well suited to their needs and abilities. Many of the facilitators noted in this phase were employer-focused, suggesting ways in which employers can improve hiring outcomes for autistic individuals. Generally, employers can make their hiring practices more inclusive of autistic individuals by providing realistic previews of the organization and the role, using valid assessments that do not show evidence of adverse impact for neurodivergent individuals, offering modifications to interview processes or using alternative methods for assessment altogether, and fostering safe environments to disclose and ask for accommodations during the hiring stage.

The most frequently reported challenge during the Establishment phase was interpersonal difficulties that hinder socialization and relationship development. This included behavioral difficulties that can lead to segregation and misunderstandings, social and communication skills, and stigma, bias, and stereotypes. The most critical facilitator noted here to ameliorate these interpersonal challenges was an understanding, inclusive, and supportive workplace culture. Supervisor and coworker knowledge of autism is critical for such a culture to be fostered.

Additionally, ongoing training and support with social interactions, and modifications to the requirements and modalities of social interaction can be very effective for mitigating the social and communication challenges experienced during this phase.

There were several notable challenges within the Maintenance phase, including sensory issues due to the physical work environment, conditions of the work (e.g., lack of routines, working hours, frequent change), work tasks and responsibilities that are a poor fit for the individual's abilities and interests, and difficulties with self-regulation and executive functioning. These challenges can lead to detriments in performance, job satisfaction, and commitment to the organization, and can increase burnout and turnover intentions. Modifications to the work content, conditions, and environment were the most commonly reported facilitators in the Maintenance phase. The largest benefits can be seen by ensuring that work environments are as visually and auditorily unstimulating as possible, that the job has structure and consistency, and that the tasks of the job are aligned with the individual's interests and abilities.

Finally, in the Disengagement phase, only two papers addressed this career phase, together highlighting two challenges and one facilitator. First, comorbidities that can appear or become more prominent as the autistic individual ages (i.e., depression, obsessive-compulsive disorder, orthopedic diseases, respiratory diseases, and epilepsy) were noted as significant challenges that can lead to a deterioration in skills and early retirement (Frank et al., 2018; Hendricks, 2010). The only facilitator noted in this phase was autism-specific employment support that takes into account the impacts of social, sensory, and health-related aspects of autism on employment outcomes (Frank et al., 2018).

## THEORETICAL IMPLICATIONS

As addressed with the second research question, Super's life-span, life-space theory (1994) does not accurately represent the career experiences of autistic individuals, and I proposed several modifications to the theory to better reflect the experiences of low-to-mid severity autistic individuals. First, I proposed that the Establishment and Maintenance phases could be combined into one "post-hire" phase. This modification would better account for the frequent overlap between these two phases for autistic individuals, and the "non-linear" career trajectories of autistic individuals due to their frequent turnover in these two phases (Bury et al. 2021a, 2021b, 2022; Coleman & Adams, 2018; Frank et al., 2018; Hayward et al., 2016; Taylor et al., 2015). Second, the Growth and Exploration phases also frequently overlapped for autistic individuals, as phases that are both geared toward gaining employment skills before attaining a job. Thus, I proposed making a clear distinction between these two phases such that the Growth phase involves pre-hire activities before the individual is actively on the job market, and the Exploration phase involves pre-hire activities during active job searching. This modification would create a clearer distinction between these phases, which would improve theoretical focus and clarity to allow for better description and prediction of career phenomena, as well as clearer practical utility and guidance. Finally, there is not enough evidence regarding the late-career and retirement experiences of autistic individuals to make substantial alterations to the Disengagement phase, other than considering that this phase likely takes place earlier in life for autistic individuals than non-autistic individuals. However, it is critical to maintain this part of the theory to account for this part of the career cycle. More research will need to be conducted to fine-tune this phase to be more applicable to autistic individuals.

No autism-specific career theory has been proposed to date, and no research, to my knowledge, has examined the work experiences of autistic individuals across the entire careerspan. There has been a dramatic increase recently in the prevalence of autism in the United States and worldwide (Chen et al., 2015; Hendricks, 2010), with the Centers for Disease Control and Prevention (CDC) reporting that 1 in 38 children was diagnosed with autism spectrum disorder in 2020 (Maenner et al., 2023), compared to 1 in 68 estimated in 2014 (CDC, 2014). Given these increased prevalence rates, it is critical to understand how to better include autistic individuals in the workforce. The findings of the current review suggest that career cycles are different for the autistic community compared to the general population. My proposed modifications to Super's life-span, life-space theory (1994) will be critical for improving the inclusion of autistic individuals in the workforce, as they lay the groundwork for describing the current work experiences and overarching career patterns of autistic individuals. From here, researchers can begin to answer more specific questions about the careers of autistic individuals, such as the strategies they use to remain fitted to their job as they age, and what supports are needed to reduce interruptions in the career trajectories of autistic individuals. Furthermore, this review also provides a thorough check-in with the literature regarding autism and work, aggregating what is known and highlighting what remains unknown. This information is critical for guiding future research, such that researchers can develop well-informed research questions that will drive the field forward and make meaningful contributions.

Additionally, my review of the literature determined that high-severity autism and low-severity autism should be examined separately in regard to work and careers. For high-severity autistic individuals, work represents a form of constructive engagement that can help to reduce autism pathology and improve overall physical and mental well-being (Reid et al., 2010; Taylor

et al., 2014). For these individuals, a career perspective on their work experiences may be inappropriate and unhelpful, as the purpose of their work is not to support themselves and advance through the career, but simply to participate in a constructive activity. Instead, focusing on how to utilize work experiences as a form of treatment and support for these individuals will be more beneficial.

The proposed career framework will be useful for low-to-mid severity autistic individuals, who do often seek employment for financial independence (Bush & Tassé, 2017), and likely take a career approach to work, albeit differently from the general population. Hence, the modified career model maintains the general cycle of careers proposed by Super (1994) for the general population, but makes necessary modifications to align more closely with the unique experiences of the low-to-mid severity autistic community. The inclusion of low-to-mid severity autistic individuals in the workforce should be considered along with other diversity, equity, and inclusion initiatives.

The literature also contained some discrepancies and inconsistent results that may be due to the lack of separation between severity levels in empirical work. First, conflicting results have been found regarding the impact of support services on the employment outcomes of autistic individuals. Some studies reported an association between receiving support services across a longer period of time, or receiving support services at all, and poorer employment outcomes (Kaya et al., 2018; Nye-Lengerman, 2015), while others found positive correlations between receiving support services and successful employment outcomes (e.g., Ditchman et al., 2018). However, these studies did not clearly report the diagnosis severity level of the autistic individuals included in the sample. This is important to report because those with a higher severity diagnosis are more likely to receive support services (Chen et al., 2015; Taylor &

Seltzer, 2011), and thus the samples may be skewed toward higher severity. If the literature were to approach the experiences of high- and low-severity autistic individuals differentially, it would be clearer how support services impact employment outcomes for these groups, and what alterations may be needed to improve support services for these groups differentially. Similar discrepancies were found regarding the impact of post-secondary education on employment outcomes (Chen et al., 2015), and the impact of job autonomy on well-being (Hayakawa et al., 2015). Thus, the needs of high-severity and low-severity autistic individuals are likely different, and by examining combined samples of these individuals, we are likely losing clarity and focus, which can have important implications for the employment outcomes of these individuals.

# PRACTICAL IMPLICATIONS

The literature provided a multitude of practical recommendations for each career phase, however, several emerged as themes that were relevant across the career span. First, understanding and acceptance of autism was mentioned in every phase as crucial for autistic individuals' success. From high school educators in the Growth phase to long-term supervisors and coworkers in the Maintenance phase, knowledge about autism and acceptance of the strengths and weaknesses associated with the diagnosis from those around them made a great difference in the experiences of autistic individuals. Thus, advocates and support staff can provide a great service to the autistic community by educating others on autism and providing experiences for them to meet and interact with autistic individuals. These interactions can help to develop an understanding and appreciation of autistic individuals, and work to reduce stigma and stereotypes about the community. Small efforts in this area are likely to go a long way to improve work-related experiences for autistic individuals.

Relatedly, support services were mentioned in every phase. Overall, support services were noted to be insufficient, and alterations and additions to support services were proposed in every phase. Specifically, autistic individuals wanted more available services overall, especially those which low-severity autistic individuals could qualify for; easier access to support services (e.g., more locations, less costly); better quality support services; autism-specific services; and more long-term supports that do not terminate when a new life phase begins, but rather assist with the transition. Additionally, an underlying theme across the phases was the need for more individualized support. In the Growth phase, autistic students wished for more individualized curriculum and transition plans, both in high school and college. In the Exploration phase, autistic individuals noted the need for individualized support with job searches, as well as individualized modifications to hiring processes so they could show their abilities without getting caught up on interviews or personality assessments that discriminate against neurodivergent applicants. In the Establishment phase, the need for individualized support came in the form of personalized accommodations for training, supervision, and communication methods to account for their unique circumstances and needs. In the Maintenance phase, individualized consideration and modifications were desired for job tasks and responsibilities, job conditions, physical working environment, and communication. Even in the Disengagement phase, the one facilitator noted in this phase was individualized support that accounts for the qualities specific to autism and how they impact work ability. Thus, individualized consideration and accommodation from support staff, employers, and coworkers is a facilitator that can ameliorate many challenges across many career phases.

Technology also emerged as a common theme across the career phases. Technology was mentioned frequently as an extremely effective support tool at various points in the career cycle, including as a method for finding careers and job roles that would match the individual's skills and interests; teaching interview skills, social skills, and job skills; supporting communication and providing alternative communication modalities; managing performance; and providing structure and organization assistance on the job. Thus, technology should be explored as a potential support tool at any stage in an autistic individual's career.

Finally, several challenges associated with the autism diagnosis consistently emerged across the career phases, including social communication skills, executive functioning, sensory sensitivities, and the need for structure and consistency. This is not surprising, as these traits represent the hallmark characterizations of the autism diagnosis and are thus likely to persevere across situations and time. The results from the current review confirm these characteristics as critical to take into account and for which to provide ample support, as they are likely to lead to the most barriers across the career span of autistic individuals.

Overall, many of the alterations to workplace and hiring procedures that were proposed in the literature do not impose hardship on organizations (Bhuiyan et al., 2022), and in fact, can benefit more than just the autistic individual. Not only does providing reasonable accommodations improve overall organizational culture (Bhuiyan et al., 2022; Brownlow et al., 2018), designing accommodating workplaces benefits all employees, regardless of disability status (Silver et al., 2023). Many of the accommodations and modifications detailed in the literature to support autistic individuals would benefit many other employees, such as aligning job content with employees' interests and skills, providing flexibility in when, where, and how work is conducted, providing private workspaces for tasks that require intense focus, or providing advanced notice for changes. Thus, all employees can benefit from workplaces that are designed to accommodate diverse individuals.

#### **FUTURE RESEARCH DIRECTIONS**

The current review highlights many avenues for future research. First, as previously noted, there is a significant lack of research regarding the late-career and retirement experiences of autistic individuals. This is a critical need for future research to fully understand the career trajectories of autistic individuals. The few studies that addressed this career phase in the current review provided preliminary support for unique experiences and challenges for autistic individuals during this career phase. Future research will need to expand on these findings, to illuminate the challenges experienced by autistic individuals as they approach retirement, and what supports could be used to facilitate this transition. Once the late-career phase is better understood, the career framework I have proposed can be finalized and utilized as a framework for future empirical work to further support the autistic community at work.

Following this review, several other streams of research can be explored. First, the proposed framework can guide additional career-related research questions. For example, other career theories examine changes in an individual's perspective on and goals related to work as they progress through career stages. One such theory is the selection, optimization, and compensation theory (Baltes & Baltes, 1990), which proposes that workers will use the adaptive strategies of selection, optimization, and compensation as they age to maintain their performance and stay fitted to their job. Selection refers to the selection of different types of goals that are better aligned with new priorities, limitations, and interests that come with age. Optimization involves selecting the means for achieving one's goals that are best suited for the opportunities or constraints of the environment or individual. Compensation involves using alternative means to achieve a goal when previously-used means are no longer available due to aging. These adaptive strategies can be used for various domains of functioning that may show changes as one

ages, such as cognitive, social, or physical functioning (Rudolph, 2016). It is possible that autistic individuals utilize these adaptive strategies differentially as they age, given that their levels of cognitive, social, and physical functioning may be at different levels from non-autistic peers to begin with, and may develop differently as they age. Thus, future research could explore how autistic individuals utilize these strategies as progress through their career, and how the use of these strategies impacts their well-being, job satisfaction, performance, and intentions to retire (Rudolph, 2016).

Additionally, future research should explore how age interacts with autism in relation to work outcomes. Most research on autism focuses on children (Jang et al., 2014), and little is known about autism in adulthood overall (Bennett & Goodall, 2021). Therefore, future work should examine the long-term development of autism across the lifespan, how experiences and symptomology may change as the individual ages, and how those changes impact their working life. Similarly, comorbid disabilities and disorders could be explored as well regarding how they interact with autism and how those interactions may change over time. The current literature had some mention of comorbidities, such as intellectual disability, psychiatric disorders, and epilepsy, impacting work attainment (Holwerda et al., 2012) and work performance (Frank et al., 2018; Hendricks, 2010). In particular, Hendricks (2010) suggested that comorbidities can lead to deteriorations in work performance over time, and the rate at which this deterioration happens may also depend on the individual's cognitive ability. Future research should expand on this, exploring how comorbidities interact and impact work outcomes over time for autistic individuals, and how these patterns may differ between high- and low-severity autistic individuals.

Furthermore, additional work should be conducted regarding gender differences in work experiences for autistic individuals. The current literature has highlighted some differences in experiences between autistic men and autistic women, such as women facing more gender-related stereotypes and expectations in the workplace (Bennett & Goodall, 2021; Hayward et al., 2019; Nagib & Wilton, 2021) and men experiencing more difficulty with executive functioning (Nagib & Wilton, 2021). However, more work could be done here to determine if differential support is needed for autistic men and women in their careers.

Finally, more quantitative work in general is needed in the literature. In the current review, the reviewed quantitative studies mostly examined the efficacy of interventions across the career phases, and very few of the reported challenges came from quantitative studies. Thus, the plethora of work-related challenges and supports proposed by qualitative studies should be confirmed and fortified using quantitative designs.

# **CONCLUSION**

With the rising rates of autism diagnosis, understanding the work experiences of autistic individuals, and the supports they need, is more critical now than ever. I utilized Super's life-span, life-space theory to organize the work-related autism literature into five phases of careers. Each career phase presented its own challenges and needed supports, but overarching themes also emerged across the career span, such as understanding and acceptance of autism, need for high-quality support services, and the impact of hallmark autism traits in the work domain. Additionally, I proposed modifications to the life-span, life-space career phases that would make the framework more aligned with the experiences of autistic individuals. Future research would benefit from utilizing this framework to further explore some of the under-represented topics

found in the review and expand upon our understanding of the experiences of autistic individuals across the career span.

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