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Hiring Candidates with Autism Spectrum Disorder (ASD): Effects of Diagnostic Disclosure and Presence of ASD Behaviors on Employability Ratings

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Abstract

Despite the increased prevalence of autism spectrum disorder (ASD) diagnoses and organizational emphasis on workplace diversity, limited information is known about how disclosure of an ASD diagnosis and presence of ASD behaviors impact perceived employability in an interview setting. The purpose of this study was to evaluate these factors using an experimental design. Participants were 258 students (M_{age} = 21.9 years, SD = 5.1; 56% female; 75% non-White) at an urban public college who completed questionnaires on ASD knowledge and stereotypes and evaluated employability of vignette characters interviewing for a job interview. Vignettes varied across two dimensions: ASD disclosure (disclosure or no disclosure) and ASD behavior (present or absent) and participants were randomly assigned using a 2x2 between-subjects design. Results showed that employability scores were significantly lower when ASD behaviors were present (vs. absent) and when ASD was not disclosed (vs. disclosed). The interaction was not significant. Knowledge of ASD in this sample of college students was comparable to that found in the general population. Endorsement of ASD stereotypes was variable, with a substantial proportion of the sample reporting uncertainty with regards to their endorsement of stereotypes. These findings contribute to the literature on attitudes toward employing individuals with ASD and may be useful for informing organizational policies on education and training in disability employment.

Keywords: autism spectrum disorder (ASD), disclosure, ASD behaviors, workplace diversity, employment, stereotypes, ASD knowledge

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As organizations adapt to create cultures of diversity and inclusion (D&I), employers have largely neglected one group: workers with disabilities (Procknow & Rocco 2016). In fact, nearly 90% of companies endorse prioritizing diversity, but less than 10% of companies consider disabilities in these D&I initiatives (Casey, 2020). Workers with disabilities participate less in the workforce than non-disabled populations (Bureau of Labor Statistics, 2016). Those with concealable stigmatized cognitive or mental disabilities face social stigma and the difficult choice of whether to disclose their diagnosis (Chaudoir & Quinn, 2010). On one hand, disclosing a disability may lead to bias from interviewers and other work personnel; on the other hand, disclosure may be necessary for appropriate workplace accommodations to be made (Schur et al., 2014).

Among the range of disabilities that are frequently overlooked in workplace D&I initiatives is autism spectrum disorder (ASD). Autism spectrum disorder is a neurodevelopmental disorder that is characterized by two central impairments: persistent deficits in social communication and repetitive behaviors (American Psychiatric Association, 2013). Diagnosis of ASD is increasingly common, with the CDC estimating that 1 child in every 54 births has autism (Maenner et al., 2016).

While autism is considered multifactorial in etiology and heterogeneous in symptom presentation (Masi et al., 2017), lay persons hold misguided and overgeneralized views about its causes and characteristics. Contrary to scientific consensus, beliefs associating autism's causes to parenting and vaccines persist in the general population (Castillo et al., 2020; McClain et al.,

2019). Likewise, lay persons often endorse negative autism myths around symptomology and behaviors, including beliefs that people with autism are dangerous or that autism is the result of cold parenting (Salahi & Chitale, 2008).

Media representations play a significant role in shaping public view of ASD. For example, film and television media often portray characters with autism as savants (Draaisma, 2009) whereas other types of media representations, such as nonprofits, sensationalize a narrative that portrays ASD either as a childhood disorder or one in which individuals are trapped in a childlike, often non-verbal, and frustrated state (Stevenson et al., 2011). Such media narratives present a homogeneous view of autism and may lead to stigmatization and social obstacles for persons with ASD.

While greater knowledge about autism is correlated with better perceptions of individuals with ASD in employment decisions, employment outcomes for individuals with ASD remain bleak (McMahon et al., 2020). The unemployment rate for workers with ASD is estimated to be near 50%, and this estimate includes workers with milder symptoms (Ohl et al., 2017). Candidates with ASD face several challenges navigating the job process, beginning with the interview. These difficulties include struggling to identify nonverbal cues such as facial expressions and tone of voice, failing to recognize social norms, and difficulties formulating quick responses to interview questions (Breward, 2019; Hendricks, 2009). When navigating a neurotypical world, candidates with ASD frequently engage in camouflaging, a term used to denote masking one's behaviors as a tool to adapt across social contexts (Hull et al., 2017). This mechanism adds another layer of mental health burden to those with ASD – often manifesting as stress, depression, and anxiety (Cage & Troxell-Whitman, 2019). Candidates with ASD navigate the risk of disclosing their diagnosis to hiring managers, employers, and coworkers. Research

shows that disclosing an invisible identity is associated with negative job outcomes such as reduced work hours, job loss, and isolation at work (Clair, Beatty, & Maclean, 2005; Dalgin & Bellini, 2008).

Finally, disabilities are frequently omitted from initiatives to increase workplace diversity and inclusion (Procknow & Rocco, 2016). Despite this, research identifies numerous benefits of hiring people with disabilities such as improved profits, reducing turnover, and reaching diverse customers (Lindsay et al., 2018). Some companies have begun adapting programs meant to attract candidates with ASD and employing this neurodivergent group has shown beneficial business outcomes (Austin & Pisano, 2017). Placing workers with ASD in suitable jobs empowers them, provides independence through financial support, and creates meaningful outcomes for everyone involved. As we move to valuing employee identities in their full and complete dimensions, it is essential that mental, cognitive, and developmental disabilities become part of that workplace discussion.

Currently, research on increasing neurodiversity in the workplace is in its early stages. Specifically, little is known about how potential employers evaluate candidates with ASD. The present study extends ASD employment literature by using a 2x2 experimental design to test the effect of ASD disclosure and presence of ASD stereotyped behaviors on judgements of employability. A secondary contribution of this study is to examine knowledge of ASD and endorsement of ASD stereotypes. The project is meant to address employees, managers, or supervisors with hiring authority, and organizations who are committed to developing policies to guide fair hiring practices. Results from the project may also be of value to the general population by increasing awareness of inaccurate stereotyping of those with ASD and other invisible disabilities.

Overview of ASD

The Diagnostic and Statistical Manual of Mental Disorders (DSM-5; American Psychiatric Association, 2013) classifies ASD with the group of neurodevelopmental disorders, meaning that symptoms are prevalent in developmental life stages. The DSM-5's umbrella term of ASD includes several pervasive developmental disorders (PDDs) including Asperger's disorder and pervasive developmental disorder not otherwise specified (PDD-NOS) (Hyman, 2013). According to the DSM-5, there are two main diagnostic criteria for ASD. First, ASD is marked by ongoing deficits in social communication and social interaction. This criterion encompasses reduced social-emotional reciprocity, poor nonverbal and verbal communication, and deficits in building and understanding relationships. The second criterion encompasses repetitive and restricted behaviors and interests. This criterion involves a fixation on certain interests that can be deemed abnormal, an insistence on "sameness" or routines, and stereotyped motor movements. Three levels of severity of ASD are specified for social communication and restricted, repetitive behaviors, including "requiring support," "requiring substantial support," and "requiring very substantial support." These levels offer greater clarity of one's symptomology, contrasting commonly used terms such as high- and low-functioning, which are regarded as harmful labels to individuals with autism (Alvares et al., 2020). Comorbid conditions linked to autism include intellectual impairments and structural language disorder conditions (American Psychiatric Association, 2013).

The prevalence of ASD diagnoses has increased considerably in the past twenty years, with a 2016 estimate that 1 in 54 children aged 8 years old have autism (CDC, 2020). This is a notable increase compared to a prior estimate in 2000 of 1 in 150 children having autism (Maenner et al., 2016). Maenner and colleagues (2016) further concluded that ASD prevalence

among boys is higher than among girls. The prevalence of ASD among adults in the United States is estimated to be 2.21%, corresponding to nearly 5.5 million people, with approximately four times as many males affected as females (Dietz et al., 2020).

ASD Employment & Disability Legislation

Low unemployment rates for people with disabilities is a significant issue. The U.S. Bureau of Labor Statistics estimates that in 2016, 20% of people with a disability participated in the labor force compared to 68.5% of individuals without a disability. Moreover, the unemployment rate for people with a disability was more than twice that of those without a disability (10.5% vs. 4.6%) (U.S. Bureau of Labor Statistics, 2016). Among individuals with ASD, it is estimated that approximately half of adults who have the desire and ability to work are unemployed (Ohl et al., 2017). Underemployment is also common; most working adults with ASD take part-time roles averaging less than 30 hours a week and are frequently underpaid or overqualified for the nature of their work (Baldwin et al., 2014; Chan et al., 2018). Individuals with ASD often find it harder to obtain suitable job roles for their educational degree and other training qualifications (Hurlbutt & Chalmers, 2004).

Employment protections for individuals with disabilities is an issue of legislative concern. Historically, federal legislation in place to protect employees with disabilities has yielded inconsistent benefit for employees with ASD. For example, the Rehabilitation Act of 1973 prohibited discrimination against qualified candidates with physical and mental disabilities by federal agencies, programs receiving federal financial assistance, and federal contractors (29 U.S.C. § 794(a), 2012). In 1990, the Americans with Disabilities Act (ADA) expanded the anti-discrimination statute to all areas of public life, encompassing public entities (e.g., schools, transportation) and private companies, and further specified the criteria to qualify for such

protections (e.g., if an individual has a physical or mental impairment substantially limiting a major life activity). While the ADA intended to protect all persons with disabilities meeting ADA criteria, the definition of a "substantially limiting" impairment was open to interpretation in courts (Hensel, 2017). As a result, conditions including diabetes, cancer, epilepsy, and developmental disabilities could be deemed insufficient in severity to qualify for protections. This was improved with the ADA Amendments Act of 2008 which articulated an expanded list of major life activities including impacts to concentrating, communicating, and thinking (Hensel, 2017). Although such legislations included protections for employees with ASD, these regulations were passed during times of public uncertainty around the causes of autism and changing DSM definitions (SARRC, 2018; Zeldovich, 2018), which likely influenced the public image of ASD and other disorders.

Ongoing federal initiatives starting in the 1990s and early 2000s purported to support employment of people with a range of disabilities. For example, the Equal Employment Opportunity Commission (EEOC), a federal government agency responsible for enforcing federal laws against discrimination toward job applicants or employees, published a guidance document (*Enforcement Guidance on Reasonable Accommodation and Undue Hardship under the ADA*) to address the rights and responsibilities of employers and individuals with disabilities (U.S. EEOC, 2002). The agency stipulates that it is the employer's responsibility to distribute EEOC ADA-related educational trainings to employees (U.S. EEOC, 1991).

Unfortunately, such federal oversight has had limited benefits for employees with ASD. Van Wieren and colleagues (2008) examined EEOC allegations from 1992 to 2003 for ASD and general disabilities (e.g., asthma, back impairment, cancer, HIV). Authors noted that the small number of ASD allegations, just 0.03% of the total 328,738, may be attributed to persons with

ASD not understanding their civil rights or how to exercise them. It was determined that most ASD allegations were the result of job conditions or circumstances and job maintenance or preservation (Van Wieren, 2008). Clearly, underemployment and workplace protections for employees with ASD remain complex issues. To assist workers with ASD while ensuring compliance with the EEOC and ADA, organizations may need to expedite initiatives meant to assist employees with ASD understand their civil rights.

Public Knowledge of ASD

Public knowledge of autism is varied, with laypersons holding differing perceptions about ASD etiology and myths about presentation of ASD behaviors. On etiology, for example, the psychogenic model is comprised of theories attributing the cause of ASD to parental skills, including a main view of parents who are cold or rejecting to their children (Furnham & Buck, 2003). Though the psychogenic model is largely rejected by experts due to its overly simplistic and inaccurate blame placed on parenting, research on lay person's perceptions of ASD supports the notion that deficits in family environments continue to be regarded as a significant cause of ASD. In a recent study of 610 adults recruited across the U.S., Castillo and colleagues (2020) reported that nearly 20% of participants indicated that parental behavior or parenting 'sometimes' cause autism. In the same study, 25% of participants endorsed the notion that family problems in the home 'sometimes' caused autism. In a study by McClain and colleagues (2019) which surveyed 318 US adults from the general population, approximately 15% reported believing that ASD was caused by a lack of motherly warmth.

Another misconception about ASD etiology held by the general public is that vaccines cause autism. This belief was first spurred following a 1998 study published in *The Lancet* showing an association between administration of the measles mumps and rubella (MMR)

vaccine and onset of ASD symptoms in a small number of children (Furnham & Buck, 2003; Wakefield et al., 1998). That paper has since been retracted by the journal due to flaws and inaccuracies and numerous large-scale studies have failed to show an association between ASD and the MMR vaccine. Despite evidence disproving a link between ASD and the MMR vaccine, many continue to believe it. In fact, 10% of 999 adult respondents from samples of both childcare providers and the public considered vaccines to be one of two main causes of autism (Mitchell & Locke, 2015). In a lay person focus group, the linkage between the MMR vaccine and autism was also reported, with one participant questioning if ASD was a possible side effect of vaccines (Huws & Jones, 2010). Finally, results of two recent studies reported that 20-30% of general population participants supported beliefs that endorsed the idea of vaccines causing autism (Castillo et al., 2020; McClain et al., 2019). These studies demonstrate the persistence of this inaccurate belief in a subset of the general population.

However, other research on public perceptions of ASD etiology indicates that the psychogenic model and false linkage to vaccines are not the overarching views held by laypersons. While the exact cause of autism is unknown, its etiology is understood to be multifactorial with genetics playing a significant role. The biomedical model places an emphasis on biological causes including genetic components or brain abnormalities (CDC, 2020; Furnham & Buck, 2003). Research by Castillo and colleagues (2020) showed that more than half of participants surveyed agreed that autism ‘often’ occurs due to medical neurological factors while 38% deemed it to occur ‘often’ due to genetics. Mitchell and Locke (2015) reported greater endorsement of this view in their study of 823 lay respondents and 176 childcare providers, with 65% to 75% of the sample agreeing that neurological or genetic factors caused autism. Thus,

while the public understanding of ASD etiology is wide ranging, research suggests that a majority of people correctly perceive biological factors to be a significant contributor.

Research shows that lay persons endorse overgeneralized myths about autism behaviors. Common myths of autism include the notion that individuals with ASD cannot build relationships or that individuals with ASD are dangerous (Salahi & Chitale, 2008). To better understand these beliefs, John and colleagues (2018) conducted a focus group study of 37 participants ranging in age (19 to 83 years old) and experience with autism (half of the group had some experience with autism in an employment, family, or social contact setting). Participants were asked to describe their beliefs about ASD. Researchers identified seven myths associated with ASD, including a view that people with autism are introverts, dislike being touched, are disinterested in social relationships, and are unable to notice rejection. Research by Jensen and colleagues' (2016) showed that in a sample of 440 adults recruited from the general population, more than half (63.2%) agreed that people with autism have an impaired ability to understand their own feelings and the feelings of others while 70.4% agreed that people with ASD withdraw from social life and 71.6% endorsed the notion that people with autism have difficulties establishing relationships with other people. Although these beliefs are consistent with DSM-5 criteria, lay persons may be prone to overgeneralize ASD characteristics and view autism in homogenous ways.

Though more limited, research has examined college students' perceptions of peers with autism. This literature suggests that college students are informed about ASD. For example, a study by Payne and Wood (2016) showed that participants correctly identified key features of ASD including repetitive movements, deficits in social skills, and gaze aversion. Having some relationship with a person with ASD also seems to influence perceptions of ASD. Several studies

show that participants who knew someone with ASD reported higher openness to interacting with a peer with ASD or greater knowledge of ASD (Nevill & White, 2011; Tipton & Blancher, 2013; White et al., 2019).

In sum, current research on the public's perception of ASD continues to reflect some degree of misconception regarding its etiology and characteristics. While this may be explained by a variety of factors, one source of influence is the media's representation of ASD.

Media Misconceptions of ASD

The public view of autism is largely shaped by the media through television and film (Mitchell & Locke, 2015) and autism awareness efforts by nonprofits (Stevenson et al., 2011). In an examination of 26 movies and TV series, Nordahl-Hansen and colleagues (2018) concluded that the media portrayals of characters with ASD may misguide the public's view of the disorder. For example, 46% of the characters possessed savant-like skills, which is higher than the real-world estimate (10-30%) of savantism in ASD. Further, the researchers argued that although many characters met most DSM-5 criteria, they form an archetypal portrayal of ASD which fails to describe a large portion of people with ASD. Nonprofit organizations for autism awareness influence the public perception of ASD in their tendency to use exclusively child-centered language and visuals in their autism advocacy efforts (Stevenson et al., 2011). Popular media has also contributed to this child-centered conception of autism (Murray, 2016). Overall, these depictions facilitate two opposing misconceptions of ASD: either that someone with autism is an adult, male savant or that someone with autism is childlike, non-verbal, and having severe autism (Kennedy Krieger Institute, 2020).

A minority of ASD diagnoses are accompanied by savant syndrome (e.g., exceptional abilities in memory, mathematics, art, or music), which is three times more likely to be reported in males than females (Happé, 2018; Howlin et al., 2009). However, most media portrayals depict characters with ASD as savants or extremely genius, possessing a rare talent, or gifted in some way (Draaisma, 2009). For example, in the movie *Rain Man* and the television show, *The Good Doctor*, the protagonists have both autism and savant skills, which are evident in their behaviors and relationships with others (Treffert, 2017). Associations between savant syndrome and autism are usually linked to positive perceptions from lay persons. In a study assessing college students' perceptions of ASD after watching 30 minutes of *The Good Doctor*, participants chose more positive traits (e.g., empathetic, confident) and fewer negative ones (e.g., weird, unintelligent) when associating adjectives to people with autism (Stern & Barnes, 2019). Yet, autism is heterogenous and this representation falls short in describing the majority of ASD cases. The persisting media portrayal of an adult male savant with ASD removes focus on populations not fitting this depiction.

With much of the public receiving information about autism through the media, these inaccuracies may lead viewers to think that having ASD and being a savant are synonymous. In qualitative studies with lay persons, savant skills are persistently associated with autism. For instance, Huws & Jones (2010) conducted semi-structured interviews with twelve adult participants aged 26 to 39 years to explore lay person understanding of autism and found a common perception was that individuals with autism had a "gift" or an exceptional ability. John and colleagues (2018) conducted a similar study with 37 adult participants (mean age = 36.8 years) from a variety of groups including undergraduate and postgraduate students, older adults, and church members. Among the seven myths of autism that emerged were that people with

autism have a special talent or savant skill. In a study of 440 lay participants, nearly 77% of the sample indicated agreement with the item, “Exceptional great knowledge about certain topics” when describing beliefs about autism (Jensen et al., 2016, p. 501). Finally, a study of 298 college-aged participants found that within the top ten most frequently mentioned traits of autism, respondents mentioned special abilities (18.3%) and high intelligence (16.5%) (Wood & Freeth, 2016).

Beyond misperceptions about the prevalence of savant skill among individuals with ASD, the association between gender and savantism influences how adult women with ASD are perceived. In a qualitative study by Bargiela and colleagues (2016) examining experiences of 14 women who received late clinical diagnoses of ASD, participants noted feelings of being ignored, misunderstood, or dismissed when explaining their ASD to others. In fact, one participant remarked feeling that because she did not fit the savant stereotype associated with ASD (e.g., not being good at math), others did not believe she had autism.

The second major misconception of autism is that individuals with ASD are children or child-like adults with severe autism who are often non-verbal, unable to express themselves, and aggressive. This misconception is a sharp contrast to the savant stereotype but also sensationalizes the reality of ASD. This image is propagated across nonprofits, television, and film. Stevenson and colleagues (2011) found that across webpages of the Autism Society of America, the U.S.’s leading autism-related support organization, 95% of 152 photographs were children. The authors further concluded that among the top twelve revenue generating charities for ASD, 75% used terms such as “child” and “children” exclusively when describing or defining autism on their websites. In fact, Autism Speaks, one of the most recognized ASD organizations, used only child-referenced discourse to describe autism at the time of the 2011

study. Finally, nonprofits and internet campaigns that use child-centered rhetoric were also found to endorse the notion that autism can be cured (Stevenson et al., 2011). This is significant in influencing public advocacy for autism and addressing the needs of individuals with autism. Kapp and colleagues (2013) examined conceptions of autism and neurodiversity in a study of 657 adults with and without ASD. Parents and those without ASD were more likely to endorse seeking a cure, finding causes of autism, and teaching children how to appear typical compared to adults diagnosed with ASD. This observation does not dismiss the support that nonprofit and internet campaigns provide, but rather identifies the potential for bias in influencing public perception of what individuals with autism look like and how they can best be supported as they transition to adulthood.

The media, through television and film, has also contributed to a child-focused conception of individuals with autism. The notion of the trapped or eternal child, someone who is forever confined to thinking or behaving in a child-like and limited state, is a common media archetype for autism depictions (Sarrett, 2011). Characters fitting this archetype were especially common throughout the 1960s to 1990s, with films focusing on difficult parental decisions to place their child into an institution or storylines where the misunderstood child runs away from their family (Murray, 2016). These narratives depict the ultimate “sacrifice” of lifelong care by parents and caretakers for an aggressive non-verbal individual with autism and propagate the belief that individuals with ASD cannot live independently (Allen, 2017). Indeed, research shows that this stereotype persists. In a qualitative study examining perceptions of autism, Huws and Jones (2010) found that participants believed that people with ASD might not fit into “normal society” such as having the ability to live independently, and instead would need to live with their families or placed in institutions or homes.

Camouflaging

Interacting in social settings is complex for individuals with ASD. To appear neurotypical, and thus avoid negative judgement from others, individuals with ASD may engage in 'camouflaging,' 'masking,' or 'compensation'- the intentional withholding of behaviors associated with autism (Hull et al., 2017). Camouflaging behaviors range from maintaining eye contact, creating learned scripts for social interactions, or imitating facial expressions (Lai et al., 2017). Cage and Troxell-Whitman (2019) identified formal and interpersonal contexts for camouflaging in a sample of 262 adults identifying as having an autism spectrum condition (51.5%), Asperger's syndrome (60.3%), or pervasive developmental disorder not otherwise specified (1.5%). Formal contexts include communicating with one's university personnel, with an interviewer or company in a hiring process, with customer service professionals, and with doctors. Interpersonal contexts included with friends, romantic partners, and other members of the ASD community.

While there are perceived benefits of camouflaging such as relationship building or securing a job, there is increasing concern that it may have a negative effect on mental health (Mandy, 2019). Hull and colleagues (2017) determined that camouflaging is linked to exhaustion, with participants' firsthand accounts of feeling emotionally and mentally drained and having to manage discomfort following the interaction. Cage and Troxell-Whitman (2019) concluded that individuals with ASD who camouflaged consistently across both interpersonal and formal contexts reported feelings of higher stress and anxiety symptoms. In that study, a subset of the original 262 participants provided key themes identified for camouflaging. Of this subset of 91 participants, 37% reported camouflaging to avoid retaliation and bullying by others (e.g., "To stop bullying and mocking as I've experienced this when not masking.") and 31%

camouflaged for concerns about impressions (e.g., “As a parent, to show I’m competent in front of other parents/ to teachers.”) (Cage & Troxell-Whitman, 2019, p. 1906).

Likewise, Livingston and colleagues (2019) examined compensation behaviors by people with ASD. They defined compensation as encompassing the act of mimicking neurotypical behaviors while interacting with others (“shallow” compensation) and cognitive deliberations of behaviors before an interaction occurs (“deep” compensation). This study included 136 adults with a clinical autism diagnosis or self-identified as having autism who were asked to complete an online survey regarding their exhibition and motivation of compensatory behaviors. Overall, 95% and 98% of the sample engaged in shallow and deep compensation, respectively. Participants noted internal factors for compensation, like social motivation (e.g., strongly desiring friendship) and external factors, like environmental demands (e.g., sensory stimuli). Almost half of participants reported compensation to be ‘somewhat’ or ‘extremely’ tiring. Indeed, the impact of compensation on quality of life is significant and includes feelings of anxiety, self-consciousness, and poor physical health. When describing their compensating for external factors, participants noted negative interactions with others that prompted their engagement in compensating (e.g., “Compensation is born from necessity. We have extensive experience of how cruel people are.”) (Livingston et al., 2019, p. 771).

Disclosure

Like camouflaging, disclosure of one’s ASD clinical diagnosis is a multi-factored consideration depending on social context. In workplace settings, research has pointed to multiple costs (e.g., facing stigma from coworkers) and benefits (e.g., accessing workplace accommodations) of disclosure while views on disclosure appear to be influenced by whether the disability is visible (Jans et al., 2012). For example, in a focus group study of 41 employed

individuals with disabilities, most participants agreed that people with visible disabilities should disclose their condition early in the employment process if not before the start of the interview. There was less consensus about disclosure for an invisible disability in that some participants with hidden disabilities expressed fear that disclosure would jeopardize their chances of being considered for the job while others felt disclosure was necessary (Jans et al., 2012). In a sample of 254 adults with ASD with varying employment status, Ohl and colleagues (2017) found that participants with ASD who disclosed their disability to their employer were three times more likely to be employed compared to those who did not disclose. Yet, other research suggests that regardless of the visibility of the disabling condition, individuals with cognitive disabilities who disclose their disability to employers usually face worse outcomes than those with physical disabilities. In Dalgin and Bellini's (2008) study of 60 employers, vignettes disclosing an invisible psychiatric disability were given lower ratings in hiring decisions and employability than vignettes disclosing an invisible physical disability. Similarly, in their survey of 312 participants recruited from the general population, McMahon and colleagues (2020) found that respondents held the most positive perceptions for candidates with diabetes (an invisible physical disability) compared to candidates with ADHD and ASD.

The job interview presents several challenges for prospective employees with ASD, including the decision of whether to disclose their disability. In an exploratory study by Sarrett (2017) examining the employment experiences of 62 adults with ASD, most participants noted that job interviews were stressful because of their formal and in-person nature, which often demands social skills, flexibility, quick reasoning, and nonverbal communication. The most difficult parts of the interview were noted to be the necessity to sustain eye contact (17%), feelings of interview anxiety (16%), and knowing how to articulate appropriate interview

answers such as answering questions about one's weaknesses (12%). Likewise, Anderson and colleagues (2021) conducted interviews with 28 parents of children with autism and 12 young adults with ASD to examine employment experiences. Among the challenges associated with finding a job was the interview stage. Parents noted the anxiety-inducing environment of interviews such as their children feeling judged by interviewers and unable to advocate for themselves. Some young adults noted they would certainly disclose their ASD diagnosis in the interview whereas others disagreed, citing fear over others' reactions (Anderson et al., 2021). Thus, for individuals with ASD, the decision of whether to disclose their diagnosis in an employment interview adds substantial pressure to an already challenging situation.

After securing employment, individuals with ASD navigate disclosing to coworkers and supervisors. This decision presents a range of objective and subjective work outcomes. Those with stigmatized identities who disclose their condition may face negative objective career outcomes such as job loss, isolation at work, and limits to career advancement (Clair, Beatty, & Maclean, 2005). Moreover, as Santuzzi and colleagues (2014) have addressed, when managers and coworkers subscribe to stereotypes associated with disabilities, these perceptions change the jobs that workers with disabilities are assigned to. For example, if a manager believes that people with ASD are awkward and unsociable, a worker who has disclosed their ASD may be placed out of a job facing customers.

Disclosing may also yield negative subjective outcomes related to coworker perceptions. Teindl and colleagues (2018) examined the impact of developmental disability visibility on employment outcomes across 74 interviews with adults with a developmental disability, caregivers such as parents, and employment support persons. Following verbal disclosure of an invisible developmental disability, participants noted that some coworkers thought that they did

not “look” disabled. In turn, participants reported feelings of being held to a higher standard than those with visible disabilities and perceptions of being “harshly judged” when making errors at work. Similarly, Toth and Dewa (2014) interviewed 13 adults with varying concealable disabilities (e.g., ADHD, anxiety disorders, mood disorders) regarding their disability disclosure process. In workplace settings, all participants noted that the fear of being perceived as incompetent at their job was one concern when disclosing. Some participants also specified hearing derogatory remarks from coworkers about mental disorders. Across both studies, researchers concluded that disclosure of an invisible disability may be associated with greater stigma from coworkers among other social barriers (e.g., derogatory remarks, being held to a different standard). In another study, participants who stopped disclosing their ASD in future employment explained that part of their reason for this was because their coworkers did not believe them since they did not fit media representation of autistic behaviors (Sarrett, 2017). Choosing to disclose one’s invisible disability is also correlated with coworker suspicion. Receiving accommodations following disclosure of an invisible disability may be perceived as inequitable preferential treatment if a coworker is unaware of the employee’s disability status, which may lead to bullying and alienation (Santuzzi et al., 2014; Teindl et al., 2018).

Despite various negative outcomes associated with disclosure, disclosing is often a necessary tool for workers with disabilities. Baldwin and colleagues (2014) determined that of 313 participants with Asperger’s Disorder or ASD, 72% stated that they were not receiving work support for difficulties linked to their ASD, and 66% indicated they would hope to receive more support for a greater respect of their workplace needs. As Schur and colleagues discuss (2014), common accommodations for employees with disabilities include changes in work schedules (e.g., allowing for flex time), modifying the individual work environment, using different

technologies, and restructuring parts of the job. These accommodations are largely inexpensive and result in increased productivity and retention. Yet, there are discrepancies between managers' perceptions of disability accommodations being made and employee perceptions of accommodations being granted. While 90.5% of managers perceived that requested accommodations were completely granted, only 72.6% of employees with disabilities felt their requests were met in totality (Schur et al., 2014).

The research evidence shows that ASD disclosure is a complex process with ranging effects on mental health and challenges associated with navigating when and to whom to disclose job-related needs. To create a more inclusive work environment, it is imperative that efforts be made to assist workers with ASD across the full scope of the employment process starting at the job interview. These efforts must also provide tangible support from peers and supervisors as well as organizational policies to ensure a safe disclosure environment and necessary workplace accommodations.

Overall, employing persons with ASD is a complex issue. Existing research on public knowledge of ASD is wide ranging and often focuses on general populations, without assessing groups like employers or hiring managers. Furthermore, studies show that lay persons form stereotyped views of autism. Such stereotypes are usually focused on opposing archetypes of autism that generalize a disorder which is heterogenous in nature. In turn, people with autism face stigma, assumptions, and other social barriers when making careful decisions to camouflage their behaviors or disclose their diagnosis in employment settings. Furthermore, little is known about the effects of camouflaging and disclosure on hiring decisions. Despite persisting unemployment and underemployment rates for this group, research on neurodiversity suggests that workers with ASD are an underutilized asset.

Thus, the primary purpose of the current study is to test the effects of ASD disclosure and presence of ASD-stereotyped behaviors on perceived employability using fictional vignettes in an experimental design. Vignettes described the job interview of a candidate with ASD in which the candidate varied on their ASD disclosure (disclosed, did not disclose) and presence of ASD-stereotyped behaviors (present, absent). The primary outcome was perceived employability defined as the degree to which the candidate was perceived to be a good fit for the job and organization. It was hypothesized that there would be a main effect of ASD behaviors such that employability would be rated lower when ASD behaviors were shown, regardless of ASD disclosure. It was also hypothesized that there would be an interaction effect between presence of ASD behaviors and ASD disclosure such that respondents would report lower candidate employability when ASD was disclosed, but only when ASD-stereotyped behaviors were present whereas employability ratings were not expected to be affected by disclosure when ASD-stereotyped behaviors were absent. A secondary purpose of this study was to explore knowledge of ASD and endorsement of ASD stereotypes in this sample. Though college populations have been found to be moderately knowledgeable about ASD, little research has examined agreement across a range of ASD stereotypes within this group.

Method

Participants

Participants were Baruch College students recruited through the online SONA Psychology and Management Participant Pool during the Fall 2020 semester. To be eligible, participants had to be 18 years or above at the time of participation and have held a part-time (15-20 hours/week) or full-time (40 hours/week) job in the prior 24 months. A total of 280 students consented to participate; 7 students were excluded due to not meeting employment or

age eligibility criteria; an additional 15 students were excluded due to incomplete data. Thus, a total of 258 participants (M_{age} = 21.9 years, SD = 5.1; 56% female; 75% non-White) who met eligibility criteria completed the study. See Table 1 for descriptive characteristics of the sample. All participants received 0.5 credit for their participation in the study.

Materials

Vignettes

Four experimental conditions were represented by separate vignettes (Appendix A) describing a candidate interviewing for an entry level, customer facing role at a tech company providing IT support to customers via phone calls. To minimize the potential for confounds, these vignettes were designed so all elements of the hiring scenario were constant except for the specific candidate profile reflecting the manipulated variables of ASD disclosure (ASD disclosed/ASD undisclosed) and ASD behaviors (present/absent). Specifically, the candidate profiles in Vignettes 2 and 3 (ASD behaviors present) include social deficits in communication, interaction, and reciprocity which are core ASD diagnostic criteria in DSM-5 (American Psychiatric Association, 2013). The candidate profiles in Vignettes 3 and 4 (ASD disclosed) include a statement that ASD was disclosed on the job application. In developing the vignettes, language describing components of the setting and interview activities were adapted from McMahon and colleagues (2020).

Candidate Employability Survey

The Candidate Employability Survey (Appendix B) is an 8-item measure developed for this study based on the constructs of person-organization (P-O) fit and person-job (P-J) fit. As described by Kristof (1996), P-O fit regards the level of compatibility between the needs of

people and organizations. Three items for assessing P-O fit were adapted from Cable and Judge (1997) (e.g., *This candidate is a good match for my company).* A fourth item (*This candidate would be a great asset to my company*) was developed by the author. Estimates of the internal consistency reliability of scores for the four P-O fit questions in the current sample was very good (Cronbach's alpha = 0.89).

Person-job (P-J) fit is described by Carless (2005) as the level of compatibility between the person's existing knowledge, skills, and abilities and those demanded by the role. Two items for assessing P-J fit were adapted from Higgins and Judge (2004) (e.g., *This candidate would be a high performer in this role*). An additional item (*This candidate would work well with our customers*) was developed by the author and a final item was adapted to reflect a hiring recommendation (*I would recommend extending a job offer to this applicant*). Estimates of the internal consistency reliability of the scores for the four P-J fit questions in the study sample was very good (Cronbach's alpha = 0.83). The overall Cronbach's alpha coefficient for the 8-item Candidate Employability Survey was 0.92.

Overall Candidate Evaluation

Overall impression of the candidate was measured using a single item: *Please give your overall evaluation of this candidate*, which was rated on a scale of 1 (Very Negative) to 5 (Very Positive).

Autism Spectrum Knowledge Scale - General (ASKSG)

The Autism Spectrum Knowledge Scale General Population (ASKSG; Appendix C) is a 31-item measure developed by McClain and researchers (2019) to assess overall knowledge of ASD among adults in the general population. Items are presented as statements and answered on

a true-false scale (e.g., *Most individuals with autism spectrum disorder will never learn to speak; Autism spectrum disorder can be diagnosed with brain imaging*). Prior research on the ASKSG has supported the internal consistency reliability of the scores on this measure (Cronbach's alpha = 0.73 raw, alpha = 0.75 standardized; McClain et al. 2019). The ASKSG is scored with 1 point given to correct responses and 0 points given to incorrect responses for all items. Scores are summed resulting in a score range of 0 to 31. Higher scores indicate higher levels of general ASD knowledge across ASD etiology, symptoms, treatment, and other factors.

ASD Stereotype Scale (ASD-SS)

In the absence of a published, validated measure to assess ASD stereotypes, the 26-item Autism Spectrum Disorder (ASD) Stereotype Scale (ASD-SS; Appendix D) was developed by the author for this study. It measures degree of agreement with five generalized stereotypes of ASD behavior rated on a 5-point scale from 1 (Strongly Disagree) to 5 (Strongly Agree). Development of these subscales was guided by the DSM-5 (American Psychiatric Association, 2013) diagnostic criteria for ASD as well as current research on laypeople's misperceptions of individuals with ASD (Jensen et al., 2016; John et al., 2018) and media portrayals of adults with ASD (Huws and Jones, 2010; Stevenson et al., 2011). The subscales are: (1) detachment from others (e.g., *People with autism don't like people*) (2) transgression of norms (e.g., *People with autism live in their own world*) (3) obsession with repetitive behaviors (e.g., *People with autism can't change their routines*) (4) lacking independence (e.g., *People with autism need assistance to do basic tasks*) and (5) alignment with the savant media portrayal (e.g., *People with autism have high IQs)*. Estimates of the internal consistency reliability of the scores on the ASD Stereotype Scale in the study sample was very good (Overall Cronbach's alpha = 0.90, *Subscale 1* Cronbach's alpha = 0.85, *Subscale 2* Cronbach's alpha = 0.83, *Subscale 3* Cronbach's alpha =

0.83, *Subscale 4* Cronbach's alpha = 0.84, *Subscale 5* Cronbach's alpha = 0.83). The ASD-SS total score was computed as the mean of all items; the ASD-SS subscale scores were computed by taking the mean of item responses for individual subscales. Subscale and total scores on the ASD-SS range from 1-5.

Demographic Questionnaire

The demographic questionnaire asked for participants' sex, age, race and ethnicity, educational year and degree, job status, and job industry.

Research Design

The present study utilized a 2x2 between-subjects design with the independent variables being (1) exhibition of ASD behaviors (present or absent) and (2) disclosure of ASD status (disclosed or not disclosed). Thus, there were four experimental conditions presented in descriptive vignettes of a candidate job interview: (1) No ASD disclosure, No ASD behaviors present (2) No ASD disclosure, ASD behaviors present (3) ASD disclosure, ASD behaviors present and, (4) ASD disclosure, no ASD behaviors present. The dependent variable was perceived candidate employability, measured by the participants' average score on the Candidate Employability Survey. Additional measures were collected on all participants to examine knowledge of ASD and endorsement of ASD stereotypes in this sample.

Procedure

This study was approved by the CUNY University Integrated IRB. All study procedures, including informed consent and debriefing, were conducted online using the Qualtrics survey platform. Participants provided informed consent using a web-based consent form which explained study procedures and required respondents to indicate that they were 18 years or older

and agreed to participate prior to advancing to the first study screen. Following this, participants answered an additional screening question asking if they held employment in the past 24 months. After successful completion of these two screens (answering "Yes" to both), eligible participants were randomly assigned to one of four experimental conditions. Participants were asked to visualize themselves as a hiring manager at a company conducting interviews for a customer facing entry-level role and read the vignette associated with that condition (n = 62, ASD disclosure, ASD behaviors present; n = 67, No ASD disclosure, ASD behaviors present; n = 65, ASD disclosure, no ASD behaviors present; n = 64, No ASD disclosure, No ASD behaviors present).

After the vignette text, participants were instructed to complete the Candidate Employability Survey and to provide their overall candidate evaluation. Then, participants completed the ASKSG, ASD-SS, and the demographic questionnaire. Upon completion of the questionnaires, participants read a debriefing text which explained the study objective and study conditions. Finally, they were thanked for their participation. All participants received 0.5 course credit upon study completion.

Data Analysis Plan

Analyses were conducted using SPSS V25.0. An analysis of variance (ANOVA) was conducted for the primary analysis, testing the effects of ASD disclosure (disclosed, not disclosed) and presence of ASD behaviors (present, absent) on employability score. As a secondary measure of employability, the ANOVA was repeated for the single-item overall candidate evaluation measure. Follow-up analyses of covariance were conducted on the employability score and the single-item overall candidate evaluation measure while controlling for ASD knowledge. Effect sizes are reported as eta squared (η^2). For the secondary objective of

the study, descriptive statistics for the ASKSG and ASD-SS were analyzed using mean, standard deviation, and frequencies. On the ASKSG, percent correct was computed by dividing the total score (number of correct responses) by the maximum possible score. To examine endorsement of ASD stereotypes, ASD-SS subscales scores were classified into three categories: disagreement (mean <3.0), neutral (3.00≤ mean<4.00), and agreement (mean ≥ 4.00).

Table 1 Participant demographics

	M (SD)
Age	21.86 (5.09)
	n (%)
Sex	
Male	109 (42.2%)
Female	144 (55.8%)
Decline to answer	5 (1.9%)
Employment status at time of participation	
Working full time (40+ hours per week)	17 (6.6%)
Working part-time (20-39 hours per week)	51 (19.8%)
Working part-time (< 20 hours per week)	70 (27.1%)
Unemployed	120 (46.5%)
Industry	
Sales & Related	28 (10.9%)
Business and Financial Operations	23 (8.9%)
Food Preparation and Serving Related	18 (7%)
Computer, Mathematical, Education, Training, and Library	14 (5.2%)
Other	12 (4.7%)
Healthcare Related	9 (3.5%)
Building and Transportation Related	8 (3.1%)
Management, Legal, Protective Service	6 (2.3%)
Office & Administrative Support	6 (2.3%)
Arts, Design, Entertainment, Sports, Media, Production	5 (1.9%)
Personal Care & Service	5 (1.9%)
Community & Social Services	3 (1.2%)
Production	1 (0.4%)
Race	
American Indian or Alaska Native	8 (3.1%)
Asian	132 (51.2%)
Black/African American	24 (9.3%)
White/Caucasian	65 (25.2%)
Other	29 (11.2%)
Ethnicity	
Hispanic or Latino/a	44 (17.1%)
Not Hispanic or Latino/a	214 (82.9%)
School Year	
1st year student	52 (20.2%)
2nd year student	35 (13.6%)
3rd year student	111 (43.0%)
4th year student	58 (22.5)
Other	2 (0.8%)
Degree	
Bachelor's degree	244 (94.6%)
Master's degree	13 (5.0%)
PhD	1 (0.4%)

Results

Primary Analysis

It was hypothesized that there would be a main effect for ASD behaviors such that employability would be rated lower when ASD behaviors were present regardless of ASD disclosure. Consistent with this prediction, results showed a significant main effect for ASD behaviors with lower employability scores for vignettes in which ASD behaviors were present (M = 2.90, SD = 0.84) compared to those in which ASD behaviors were absent (M = 3.15, SD = 0.75), F (1, 257) = 6.08, p = .014, η^2 =.023. It was also hypothesized that there would be an interaction effect such that respondents would report lower candidate employability when ASD was disclosed, but only when ASD-stereotyped behaviors were present whereas employability ratings were not expected to be affected by disclosure when ASD-stereotyped behaviors were absent, but this was not supported, F (1, 257) = .316, p = .575, η^2 =.001. Although an effect for ASD disclosure was not hypothesized, results revealed significant main effect with higher employability ratings for vignettes in which ASD was disclosed (M = 3.20, SD = 0.75) compared to those in which ASD was not disclosed (M = 2.86, SD = 0.82), F (1, 257) = 12.12, p = .001, η^2 = .046. These effects did not change when controlling for ASD knowledge, although the covariate (ASKSG score) was significant, F (1, 257) = 5.43, p = .021, η^2 = .021. See Figure 1 for mean employability scores by conditions of the independent variables.

Results from the single-item candidate evaluation measure revealed comparable findings. There was a main effect for ASD behaviors, with lower evaluation scores for vignettes in which ASD behaviors were present (M = 3.09, SD = 0.94) compared to when ASD behaviors were absent (M = 3.35, SD = 0.87), F (1, 257) = 4.93, p = .027, η^2 =.019 and a main effect for ASD disclosure, with higher evaluation scores for vignettes where ASD was disclosed (M = 3.43, SD

= 0.83) compared to when ASD was not disclosed (M = 3.02, SD = 0.94), F (1, 257) = 14.03, p < .001, η^2 = .052. The interaction effect was not significant, F (1, 257) = 1.25, p = .265, η^2 = .005. These effects did not change when controlling for ASD knowledge, although the covariate (ASKSG score) was significant, F (1, 257) = 6.45, p = .012, η^2 = .025.

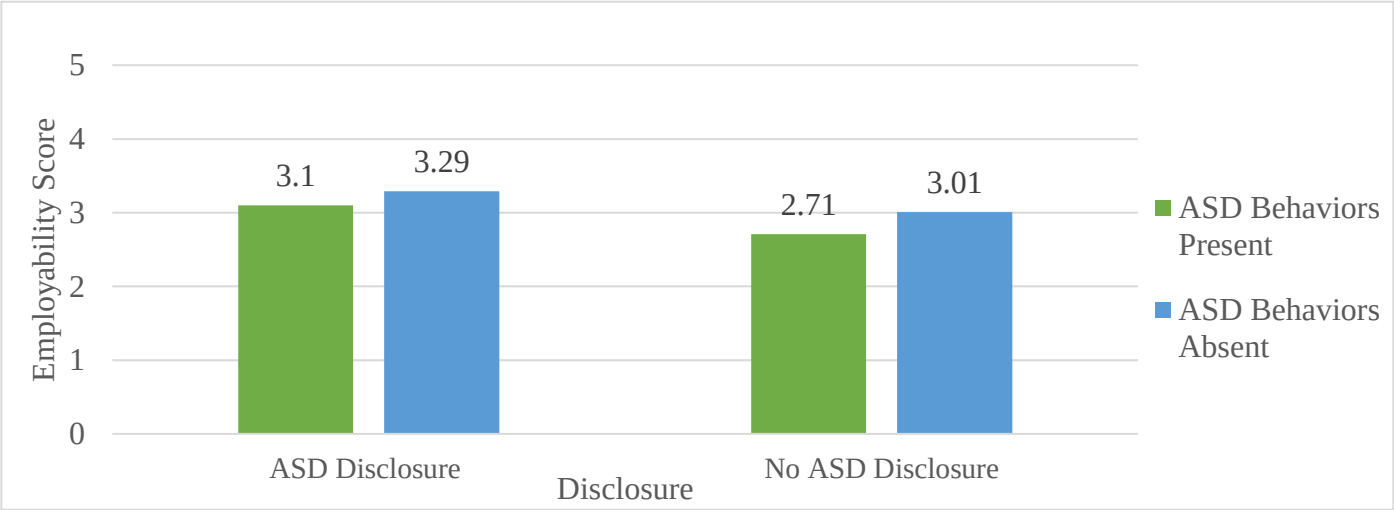

Figure 1 Mean Employability Scores by Condition. Mean values are estimated marginal means controlling for ASKSG score.

Secondary Analyses

Secondary analyses examined knowledge of ASD and endorsement of ASD stereotypes. On ASD knowledge, the mean (SD) ASKSG score was 19.42 (2.95) items, corresponding to 63% of the 31 items answered correctly. The minimum ASKSG score was 12 (39% of items answered correctly) and the maximum score was 26 (84% of items answered correctly). On endorsement of ASD stereotypes, the overall mean (SD) score for the ASD-SS was 2.81 (0.50). Mean (SD) for the five subscales were as follows: Detachment from others; 2.55 (0.65), Transgression of norms: 2.92 (0.78), Obsession with repetitive behaviors: 2.72 (0.79), Lacking independence: 2.80 (0.80), and Alignment with the savant media portrayal: 3.27 (0.58). See Table 2 for descriptive statistics reflecting degree of endorsement by subscale of the ASD-SS.

Table 2 Percent of Participants Reporting Agreement and Disagreement with ASD Stereotypes

ASD-SS Subscale	Disagree	Neutral	Agree
Detachment from others	69.4%	28.2%	3.4%
Transgression of norms	40.3%	48%	11.7%
Obsession with repetitive behaviors	50.0%	41.1%	9%
Lacking independence	49.2%	39.5%	11.4%
Alignment with the savant media portrayal	19.4%	64.7%	16%

Note: ASD-SS items range from 1 (strongly disagree) to 5 (strongly agree). Mean subscale scores were computed by averaging items in each subscale and then classified as disagree (mean <3.00), neutral (3.00≤ mean<4.00) and agree (mean ≥ 4.00).

Discussion

The findings from this study provide support for the hypothesis that the presence of ASD behaviors during a job interview would result in lower perceived employability. This result is consistent with prior research by McMahon and researchers (2020) on the visibility of ASD characteristics and camouflaging on hiring ratings by participants in the general population. McMahon and researchers (2020) concluded that hypothetical job candidates with observable ASD characteristics were given fewer positive ratings than those without observable ASD characteristics. Research on camouflaging further indicates that concealing ASD behaviors is linked to fitting in across various social contexts whereas not concealing these behaviors can lead to ostracism (Hull et al., 2017; Mandy, 2019). People with ASD camouflage with an interviewer or company when applying for jobs, among other formal contexts (Cage & Troxell-Whitman, 2019). As such, the findings of the present study suggest there is justification for camouflaging

in a hiring setting, as the presence of ASD behaviors was associated with lower employability ratings. Another possibility is the presence of these behaviors could have been interpreted as being impolite during a job interview (e.g., not reciprocating a handshake or giving a positive nonverbal cue such as smiling), which resulted in lower employability ratings.

Though not hypothesized, a main effect for ASD disclosure was also identified in the current study. Here, disclosing an ASD diagnosis resulted in higher employability scores. This is a surprising result as previous research on disability disclosure indicates that disclosing an invisible or mental disability is often linked to facing stigma and social barriers (Dalgin & Bellini, 2008; Jans et al., 2012). However, some research suggests that disclosure to one's employer is seen positively and is linked to increased chances of securing employment. As noted by Ohl and colleagues (2017), disclosure may be beneficial for job accommodations under the ADA to be made and for establishing a line of communication between employees and their employers. In this study, disclosure might also be perceived as being honest or open with one's traits. However, the reasons why disclosure was associated with higher employability ratings were not examined in the present study. There is a need for additional research in this area. While the recent work of McMahon and researchers (2020) has begun to examine different diagnostic disclosures (e.g., ASD, ADHD, diabetes), future research should look to investigate the effect of disclosing contrasting disability types (e.g., physical versus mental, invisible versus visible) in hiring studies.

The hypothesized interaction that employability scores would be lower when ASD was disclosed but only when ASD behaviors were present whereas perceived employability would not be affected by disclosure in the absence of ASD behaviors, was not supported. This is consistent with previous research that did not find significant interactions between disclosure and

ASD characteristics (McMahon et al., 2020). As McMahon and researchers (2020) address, employer's knowledge of ASD was a stronger influence on diagnostic disclosure than ASD characteristics. In this study, it is possible that participant knowledge of ASD supplied a baseline of what participants knew about ASD behaviors. For example, the vignettes state that the job candidate does not reciprocate a smile or shake the hiring manager's hand and silently sits down. Overall, 87.2% of the sample correctly answered the item stating, "Individuals with autism spectrum disorder have difficulty interacting socially with others" on the ASKSG. Evidently, much of the sample understood the social communication deficit linked to ASD and could possibly discern this in the vignette text thus reducing the possibility of an interaction effect. Finally, study results showed that disclosure was associated with higher instead of lower employability scores. A possible reason for this is that disclosure was linked to a positive trait such as honesty or openness instead of negatively impacting participant perceptions.

Participant knowledge of ASD was similar to that reported in other studies. The mean ASKSG score in this sample was 19.42 items answered correctly out of 31 total items. This is comparable to that found by Shand and colleagues (2020), who tested ASD knowledge using the ASKSG in the general population and reported a mean (SD) score of 21.62 (2.71) items correct. This score is also comparable to prior research when looking at the percentage of items answered correctly. For example, in a study of the general population, McClain et al. (2019) reported that the percentage of items answered correctly ranged from 19.4-93.6%. Likewise, in a sample of parents of children with ASD, 19.5-77.9% of items on the ASKSG were answered correctly (Benallie et al., 2020). In the present study, the range was 38.7-83.9% of items answered correctly, suggesting that college students have comparable or even slightly more knowledge of ASD relative to other study samples.

Overall, results from the ASD-SS suggest that participants in the current study had some ambivalence regarding endorsing stereotypes associated with autism. The mean score across all subscales of the ASD-SS was 2.81 on a scale of 1 (strongly disagree) to 5 (strongly agree), with a minimum score of 1.46 and a maximum score of 4.35 across all 26-items. Across the ASD-SS subscales, most participant scores fell in the range of disagreement (19-70%) or neutral endorsement (28-65%). A smaller percentage agreed with the stereotypes (3-16%). Finally, there was substantial variability in neutral ratings across subscales. While most participants were neutral when endorsing stereotypes linking ASD to savant skills (65%), fewer participants were neutral when endorsing stereotypes regarding a detachment from others (28%). This suggests greater uncertainty with stereotypes present in media (e.g., savantism) than with over generalized stereotypes associated with DSM-5 criteria of autism (e.g., social and communication deficits). As mentioned, the sample was knowledgeable about ASD as measured by the ASKSG and may have a better understanding of facts related to ASD traits, etiology, and treatment rather than media stereotypes, which may explain these differences between subscales.

Interestingly, of the five subscales on the ASD-SS, *Subscale 1(Detachment from others)* was met with the most disagreement (69.4%). This is surprising as previous research indicates that lay persons may hold views that people with ASD have poor social skills, are introverted or withdrawn, lack social communication, and have difficulty with other elements of social interaction (John et al., 2017; Wood & Freeth, 2016). This result may reflect participants' level of knowledge of ASD as the ASKSG includes items regarding knowledge of social behaviors and communication. In fact, 87.2% of the sample correctly answered the item stating, "Individuals with autism spectrum disorder have difficulty interacting socially with others" while 83.7% correctly answered the item stating, "Many individuals with autism spectrum disorder

have difficulties expressing themselves." Thus, most participants in the study were found to correctly identify items regarding social communication deficits so were less likely to agree with overgeneralized stereotypes with items on this subscale.

Participants reported the most uncertainty regarding *Subscale 5 (Alignment with the savant media portrayal)* with the highest number of neutral responses (64.7%). This subscale held the most agreement, with 16% of the sample agreeing or strongly agreeing with items suggesting that people with ASD have savant skills. This result aligns with previous research on the stereotype that people with ASD are viewed as savants or possessing high intelligence (Draaisma, 2009; Nordahl-Hansen et al., 2018; Wood & Freeth, 2016). Additionally, this stereotype is prevalent as one of two opposing media archetypes of autism. As such, respondents might have had prior exposure to seeing this stereotype in television and films, resulting in the high agreement relative to other subscales.

Across *Subscale 2 (Transgression of norms), Subscale 3(Obsession with repetitive behaviors),* and *Subscale 4(Lacking independence),* levels of agreement with these stereotypes ranged from 9-11%. This is surprising as these stereotypes are referenced in research on laypersons' perceptions of ASD. For example, past literature indicates that lay persons may deem that people with autism act in ways suggesting they do not care about social norms, are living in their own world, and are best suited for repetitive tasks (Kennedy Krieger Institute, 2020; Treweek et al., 2019). Other research shows that people perceive individuals with ASD to lack independence or need care in their daily lives, and a common archetype of autism in media and nonprofits is someone in a child-like state (Huws & Jones, 2016; Stevenson et al., 2011). Low endorsement of these stereotypes in the current study relative to prior research may reflect the level of knowledge of ASD in this sample.

In evaluating endorsement of ASD stereotypes using the ASD-SS, it is important to note that this measure was constructed for the purpose of the study. While it was carefully developed based on ASD criteria as defined in the DSM-5, prior literature on layperson's myths of ASD, and common ASD stereotypes, it was not psychometrically validated. Furthermore, subjective judgment was used to categorize participant responses as indicating agreement, disagreement, or a neutral endorsement of the stereotype. The use of different cutoff values would have resulted in different findings.

There are numerous strengths of the current study. First, the experimental design was internally valid and allowed for a straightforward manipulation of the independent variables. The vignettes were identical, aside from statements conveying ASD disclosure and ASD behaviors. This allows for replicability in future studies. Another strength was the large and diverse sample. With 258 participants, the sample was found to be racially diverse and diverse across other factors like school year and employment status (half of the sample was currently employed). Furthermore, the primary outcome of candidate employability was developed with consideration of construct validity by using a measure derived from the literature on person-job and person-organization fit; moreover, this measure possessed excellent internal consistency reliability.

However, there are also several limitations. One limitation of the current study is use of the SONA Psychology and Management Pool for participant recruitment which restricted the sample to students. Future research can look to use a different technology, such as Amazon Mechanical Turk (MTurk) which allows recruitment from larger target populations, including those more knowledgeable about hiring processes. A second limitation relates to the four experimental vignettes. All job candidate profiles had a male-sounding name (Thomas) to keep

the sex of the job candidate constant across conditions. Future studies should assess if changing indicators of the candidate's sex influences perceptions of employing candidates with ASD. Similarly, the vignettes represented employment in the customer service industry at a technology company. Research assessing perceived employability in other industries would be beneficial to understanding employment outcomes for persons with ASD across job roles, organizational levels (e.g., entry-level versus executive positions), and industries.

An additional consideration is that this candidate can be described as someone having a Level 1 severity (requiring support) with no accompanying intellectual or language impairment (American Psychiatric Association, 2013). Thus, the character is nonrepresentative of ASD Severity Levels 2 and 3 which are characterized by prominent deficits in social communication skills and restricted, repetitive behaviors that interfere with functioning in numerous contexts. Additional research is needed to examine perceived employability across diverse candidate profiles within ASD severity levels. These vignettes also conveyed that disclosure occurred before the interview process on the job application. As disclosure is a complex process, disclosing ASD diagnosis during or after the interview are equally likely scenarios. For example, disclosure can occur within an email sent before or after a job interview or as part of the job application on a resume or cover letter. Thus, these possibilities should be examined in future studies. Lastly, the vignettes represent a small number of non-verbal ASD behaviors. Adults with ASD vary in their presentation of ASD behaviors. Future research should look to expand the type and scope of ASD behaviors that may have an impact on hiring decisions.

In summary, the present study contributes to a growing body of research on factors affecting hiring decisions for individuals with ASD, specifically disclosure of an ASD diagnosis and presence of ASD behaviors. It extends limited research on ASD disclosure and presence of

ASD behaviors on perceptions of employability by testing these effects in a younger sample of college students using an experimental design. Although these elements provide a glimpse of the ASD employment process, a multitude of aforementioned factors should be included in future research and used to inform hiring processes. However, there are actionable steps that companies can take in the present. As employers increase their commitments to diversity in the workplace, it is critical that they first assess their organization's policies and review their current interview process for areas of improvement in education and training on employment practices for persons with ASD and other disabilities. From there, companies should use these deliberations to inform efforts in attracting and retaining candidates with autism and others across the scope of needs and abilities.

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Appendix A

Vignettes

The four vignettes are attached below. To convey the variations in candidate profile, the disclosure of their ASD diagnosis is bolded and presence of the ASD behavior is underlined. Both indicators were removed from the vignettes that participants received.

Vignette 1: No ASD disclosure, No ASD behaviors present

You are in your office ready to interview Thomas, a new grad applying to the IT customer support role at your company. In this role, customer support representatives are expected to interact with customers via phone calls and online chats. His resume indicates that he has just graduated this past spring with honors in Computer Science. He arrives and you start the interview by asking him about his experience and interests in the field. He explains his previous role as a cashier at an electronics store. He remarks that he enjoyed working with the products, stocking the shelves, and tracking his sales. He did not enjoy interacting with the customers as much, but it is something he was willing to do depending on his shifts. You get through all of the questions in the allotted one-hour time frame. You thank him for his time, and he leaves.

Vignette 2: No ASD disclosure, ASD behaviors present

You are in your office ready to interview Thomas, a new grad applying to the IT customer support role at your company. In this role, customer support representatives are expected to interact with customers via phone calls and online chats. His resume indicates that he has just graduated this past spring with honors in Computer Science. **When he arrives, you smile and reach out to shake his hand, but Thomas does not reciprocate this gesture. Instead, with a straight face, he does not say a word to you and sits down.** You start the

interview by asking him about his experience and interests in the field. He explains his previous role as a cashier at an electronics store. He remarks that he enjoyed working with the products, stocking the shelves, and tracking his sales. He did not enjoy interacting with the customers as much, but it is something he was willing to do depending on his shifts. You get through all of the questions in the allotted one-hour time frame. You thank him for his time, and he leaves.

Vignette 3: ASD disclosure, ASD behaviors present

You are in your office ready to interview Thomas, a new grad applying to the IT customer support role at your company. In this role, customer support representatives are expected to interact with customers via phone calls and online chats. On his application, Thomas disclosed that he has autism spectrum disorder (ASD). His resume indicates that he has just graduated this past spring with honors in Computer Science. **When he arrives, you smile and reach out to shake his hand, but Thomas does not reciprocate this gesture. Instead, with a straight face, he does not say a word to you and sits down.** You start the interview by asking him about his experience and interests in the field. He explains his previous role as a cashier at an electronics store. He remarks that he enjoyed working with the products, stocking the shelves, and tracking his sales. He did not enjoy interacting with the customers as much, but it is something he was willing to do depending on his shifts. You get through all of the questions in the allotted one-hour time frame. You thank him for his time, and he leaves.

Vignette 4: ASD disclosure, no ASD behaviors present

You are in your office ready to interview Thomas, a new grad applying to the IT customer support role at your company. In this role, customer support representatives are expected to interact with customers via phone calls and online chats. On his application, Thomas

disclosed that he has autism spectrum disorder (ASD). His resume indicates that he has just graduated this past spring with honors in Computer Science. He arrives and you start the interview by asking him about his experience and interests in the field. He explains his previous role as a cashier at an electronics store. He remarks that he enjoyed working with the products, stocking the shelves, and tracking his sales. He did not enjoy interacting with the customers as much, but it is something he was willing to do depending on his shifts. You get through all of the questions in the allotted one-hour time frame. You thank him for his time, and he leaves.

Appendix B

Employability Scale

Items rated on Likert 5-point scale: Strongly Disagree, Disagree, Neutral, Agree, Strongly Agree

P-O Fit

1. This candidate would be a great asset to my company.
2. This candidate reflects similar values and culture in my company.
3. This candidate is a good match for my company.
4. This candidate fits the current employee makeup in my organization.

P-J Fit

1. I would recommend extending a job offer to this candidate.
2. This candidate would be a high performer in this role.
3. The candidate possesses all the necessary skills needed for this specific job.
4. This candidate would work well with our customers.

Overall Candidate Evaluation

Items rated on a Likert 5-point scale: Very Negative, Negative, Neutral, Positive, Very Positive

1. Please give your overall evaluation of this candidate.

Appendix C

Autism Spectrum Knowledge Scale-General (ASKSG)

Items are presented as statements on a true-false scale.

1. Many individuals with autism spectrum disorder have difficulties expressing themselves.
2. Individuals with autism spectrum disorder may have strict routines or rituals.
3. Autism spectrum disorder is caused by a lack of motherly warmth.
4. Individuals with autism spectrum disorder have difficulty interacting socially with others.
5. Many children with autism spectrum disorder are at risk for academic difficulties.
6. Social skills training is an effective treatment for some individuals with autism spectrum disorder.
7. Children with autism spectrum disorder may not play with toys the way they are intended.
8. Most individuals with autism spectrum disorder will never learn to speak.
9. If a teacher believes a student has autism spectrum disorder, they can make a diagnosis.
10. All individuals with autism spectrum disorder have low intellectual quotients (i.e., IQs).
11. Some individuals with autism spectrum disorder may be uncoordinated or clumsy.
12. There are no beneficial treatments available for individuals with autism spectrum disorder.
13. Autism spectrum disorder only affects children.
14. Symptoms of autism spectrum disorder do not change throughout an individual's life.
15. Vaccines can cause autism spectrum disorder.
16. Diagnosis of autism spectrum disorder is primarily based on behavioral observations and parent interviews.

17. Up to 70% of individuals with autism spectrum disorder also have an additional mental health diagnosis (e.g., anxiety).
18. Many individuals with autism spectrum disorder have difficulties living and working independently in adulthood.
19. Boys are four times as likely than girls to have autism spectrum disorder.
20. Less than 2% of people in the US have autism spectrum disorder.
21. Intellectual quotient (i.e., IQ) and age affect treatment success for children with autism spectrum disorder.
22. Symptoms of autism spectrum disorder do not appear before the age of two years.
23. Autism spectrum disorder can only be diagnosed after the age of four years.
24. Restricting certain foods (e.g., gluten) is an effective treatment for autism spectrum disorder.
25. It is possible for autism spectrum disorder to develop into adulthood.
26. Children who have a brother or sister with autism spectrum disorder are more likely to develop the disorder.
27. Autism spectrum disorder can be diagnosed with brain imaging.
28. For a diagnosis of autism spectrum disorder, symptoms must be present from early childhood.
29. Advanced paternal (father) age is a risk factor for autism spectrum disorder.
30. There are no differences in the identification rates of autism spectrum disorder across racial and ethnic groups.
31. A diagnosis of autism spectrum disorder can only be made by a medical doctor.

Appendix D

ASD Stereotype Scale (ASD-SS)

Items rated on Likert 5-point scale: Strongly Disagree, Disagree, Neutral, Agree, Strongly Agree

Detachment from others

1. People with autism can't communicate their feelings.
2. People with autism are socially awkward.
3. People with autism can't show empathy.
4. People with autism are introverted.
5. People with autism don't make friends.
6. People with autism don't like people.
7. People with autism don't notice social rejection.
8. People with autism are emotionless.
9. People with autism do not like to be touched.

Obsession with repetitive behaviors

1. People with autism are obsessive.
2. People with autism have to do things their way.
3. People with autism can't change their routines.
4. People with autism have to work with repetitive tasks.

Transgression of norms

1. People with autism live in their own world.
2. People with autism don't care about rules.
3. People with autism don't behave in age-appropriate ways.

4. People with autism disregard societal norms.

Lacking independence

1. People with autism need someone to care for them (ex: family member or care worker).
2. People with autism cannot live independently.
3. People with autism need assistance to do basic tasks.
4. People with autism will need to be placed in special needs group homes or institutions.

Alignment with the savant media portrayal

1. People with autism usually have a natural gift such as photo memory.
2. People with autism have high IQs.
3. People with autism have technical or analytical minds.
4. People with autism are geniuses.
5. People with autism are talented.