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***Perceived Psychosocial Work Environment and Support
among Employed Adults with Autism Spectrum Disorder:
A Cross-sectional Survey Study in Sweden***

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Abstract

Based on previous research regarding employment among individuals with autism spectrum disorder (ASD) and the clinical description of ASD, this study focused on ten work environment factors: emotional demands, variation of work, predictability, role clarity, leadership, social support from colleagues and supervisor, social community, inclusivity, and using strengths. These work environment factors were assessed from the perspective of employed adults with ASD as well as psychologists providing employment support at the Swedish Public Employment Services to adults with ASD. In study 1, seventy employed adults with ASD filled out an online questionnaire to assess the relationships and to identify the best predictors of job satisfaction, life satisfaction, and stress regarding the ten work environment factors. In study 2, thirty-eight psychologists filled out an online questionnaire rating the importance and frequency of the same work environment factors as support areas in their support with a special focus on the best predictors from study 1, while they also provided workplace adjustment recommendations for employers in relation to each area. Study 1 identified the relationships of included variables and indicated that job satisfaction was best predicted by role clarity and using strengths, whereas life satisfaction was best predicted by using strengths, and stress was best predicted by emotional demands, predictability, and using strengths. Study 2 demonstrated that role clarity, using strengths, emotional demands, and predictability were also among the most frequent and most important support areas as perceived by the psychologists. Finally, thematic categories of workplace adjustment recommendations for employers were highlighted in relation to these support areas.

Keywords: autism spectrum disorder, work environment, neurodiversity, job satisfaction, life satisfaction, stress, COPSOQ II, qualitative content analysis

Perceived Psychosocial Work Environment and Support among Employed Adults with Autism Spectrum Disorder: A Cross-sectional Survey Study in Sweden

In the early 1940's, Kanner and Asperger laid down the foundations of autism research (Frith, 1996). Since then, there has been a growing interest in understanding this unique and complex behavioral construct. The concept of autism has been investigated in many frameworks considering its history of changes in clinical description and the variety of etiological explanations ranging from psychodynamic theories, through genetics, to cognitive science. Besides efforts to understand cognitive- and neural mechanisms utilizing the latest advancements in neuroscience, researchers in the last two decades also began to focus on practical and applicable solutions outside the context of a laboratory or a clinical setting, for example, support in education and employment (e.g., Capo, 2001; Keel, Mesibov, & Woods, 1997; Mawhood & Howlin, 1999; Whitaker, Barratt, Joy, Potter, & Thomas, 1998). More recently, there has also been an increase in pragmatic approaches specifically focusing on the context of work among individuals with autism (e.g., Baldwin, Costley, & Warren, 2014; Hill, 2014; Lorenz & Heinitz, 2014; Pfeiffer, Brusilovskiy, Davidson, & Persch, 2018; Robertson, 2010). By assessing the psychosocial work environment, research can inform and support individuals, organizations as well as institutions to provide better work settings for people with autism spectrum disorder (ASD). Ultimately, this knowledge might contribute to overcoming difficulties of entering the labor market for adults with autism and increasing the possibility of competitive work performance and presence in the labor market as autonomous individuals. To support this goal, an increasing number of organizations promote inclusiveness, diversity and the potential in a strengths-based approach, e.g. "Specialisterne in Denmark, Passwerk in Belgium or Auticon in Germany" (Lorenz & Heinitz, 2014, p.1). The strengths-based approach underlines the importance of focusing on the strengths of the

employees to increase motivation and engagement, see Buckingham and Clifton (2001) and Rath (2007).

In addition to disappointing rates of employment in autism (Howlin, Goode, Hutton, & Rutter, 2004; Mahwood & Howlin, 1999), contradicting reports of increasing prevalence (see Arvidsson, Gillberg, Lichtenstein, & Lundström, 2018; Gerhardt & Lainer, 2011) or the indication of an aging population with autism (Pfeiffer, Braun, Kinnealey, Matczak, & Polatajko, 2017), the influence of the neurodiversity claim or movement (see Jaarsma & Welin, 2012) might also have contributed to the strengthening link between autism research and organizational psychology. The neurodiversity claim promotes non-discrimination and equality increasing the significance of the person-environment fit in the work environment in diverse populations - including autism - and appropriate support systems in employment, while in its broadest sense “regards atypical neurological development as a normal human difference” (Jaarsma & Welin, 2012, p.20). Contrary to the neurodiversity approach, Robertson (2010) noted the dominance of the deficit model in academic and professional rhetoric portraying autistic people as “broken humans who are ill and require fixing” (para. 1) ignoring diversity, strengths and talents. The deficit model has also been referred to as the medical model with the primary goal of normalization and the elimination of symptoms identified based on deviations from average behavior (Kapp, Gillespie-Lynch, Sherman, & Hutman, 2013). While the medical model provides a fundamental theoretical framework for research and the clinical description of autism, this study considers the integral role of the neurodiversity approach for a more balanced view of diversity and strengths within the autism spectrum.

Clinical Description of Autism Spectrum Disorder

Although autism has been investigated for almost eighty years, it “has proved remarkably difficult to describe and explain” (Boucher, 1996, p.14). Autism is generally

considered a lifelong, heritable, behaviorally diagnosed neurodevelopmental condition (Pellicano & Burr, 2012). Park et al. (2016, p.2) also noted that that autism is not a single disorder but a “multi-factorial disorder” resulting from the interaction of genetic (e.g. “gene defects, chromosomal anomalies”) and non-genetic risk factors (e.g. “perinatal exposure to teratogens, certain viral infections, maternal anticonvulsants, post-natal autoimmune disease, hypoxia, mercury disease”) potentially resulting in atypical functioning of different brain areas, including the amygdala, prefrontal cortex or nucleus accumbens. In 2013, the latest edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-V) by the American Psychiatric Association (APA) - considered a typical example of the medical model by Jaarsma and Welin (2012) - introduced the diagnostic criteria of autism spectrum disorder. ASD is described as a continuum that includes previous diagnostic categories of autistic disorder, Asperger’s disorder, and pervasive developmental disorder not otherwise specified from DSM-IV. Essential features included deficits in social communication and interaction (e.g. in social-emotional reciprocity, nonverbal communication, developing, maintaining and understanding relationships) and repetitive and restricted behavioral patterns (e.g. in movements, insistence on sameness, interests, hyper- or hyporeactivity to sensory input) (APA, 2013). Furthermore, DSM-V also underlined the variety in which these symptoms can appear, levels of severity (level one - *requiring support*, level three - *requiring very substantial support*) and the rate of comorbidity. Comorbidity refers to other psychiatric disorders occurring together with autism. It is estimated that 70% of people with autism have one additional comorbid condition, while 40% has two or more. Regarding the prevalence of autism, 1% is generally estimated both in adult and child population samples, although increased rates have also been reported, which might be due to diverse levels of awareness, methodology or changes in clinical practices (APA, 2013). In Sweden, based on current population statistics (“Key figures for Sweden,” n.d.), more than a hundred thousand people

could be affected. Idring et al. (2015) reported a 1.44% prevalence of ASD among children aged 0-17 years, and a 1.76% among young adults aged 18-27 years in the year 2011 in Sweden.

Employment and Autism Spectrum Disorder

Behavioral characteristics in autism spectrum disorder might make individuals appear unsuited for employment, which can hinder them from obtaining and sustaining employment resulting in a higher switching rate in between jobs (Hendricks & Wehman, 2009). However, Hendricks (2010, p.126) underlined that “individuals with ASD should have the same rights and entitlements as the rest of the society”, including employment providing the possibility for autonomy. In general, “only a minority of individuals with autism spectrum disorder live and work independently in adulthood...even these individuals may remain socially naive and vulnerable...prone to anxiety and depression” (APA, 2013, p.56). Accordingly, Howlin (2000) reviewed previous research in the outcome of adult life in autism reporting generally low and “disappointing” employment rates regardless of intellectual disability (p.72). Shattuck et al. (2012), focusing on youth with ASD in the US, indicated that around 35% with autism attended college, and an employment rate between 25-50% including any type of paid employment form, which was the lowest compared to other disabilities. Furthermore, in Canada, the employment rate with development disabilities was 22% compared to the 74% without a disability, which was again the lowest employment rate among all disability types (Bizier, Fawcett, Gilbert, & Marshall, 2015). However, Lorenz, Frischling, Cuadros, and Heinitz (2016) highlighted that there is still a need for more studies to establish a comprehensive and a more accurate assessment.

Hendricks (2010) argued that achieving and maintaining employment can be a challenging process to anyone, but it can be especially so for people with ASD considering difficulties in social communication and interaction (for a review, see Lorenz et al., 2016).

However, research and experience demonstrated that individuals with autism can be employed and perform work successfully (Burgstahler & Ladner, 2007; Capovilla, 2001; Howlin et al., 2005; Keel, Mesibov, & Woods, 1997; Müller, Schuler, Burton, & Yates, 2003). Furthermore, Lorenz and Heinitz (2014) reviewed the strengths in ASD compared to individuals without ASD underlining “concentration during long-lasting routine work, identification of logical rules and patterns, processing visual information, remembering facts” (p.1). More specifically, the authors found that among individuals with ASD, attention to detail, logical reasoning, and reliability were the most frequent strengths, while among individuals without ASD, these were reliability, verbal skills, and empathy. Overall, regarding strengths, their results showed that the biggest differences were in empathy, attention to detail, and social skills. However, Baldwin, Costello, and Warren (2014) cautioned against stereotyping the interests and abilities of this group, especially since they are employed in a wide variety of fields, industries and professions, along with the general heterogeneity and comorbidity in ASD. It is crucial to preserve the idea that support should be based on diversity not only within the workplace, but within the autism spectrum as well, as Danmo expressed: “We depend on getting the RIGHT support and adaptations based on our needs. What should we do to make people understand that we, although we have the same diagnosis, are all so different?” (as quoted in Rosquist & Keiso, 2012, p.203).

Theoretical Framework

To provide better work environment conditions for adults with ASD, research has focused on several factors related to work life and the work environment. However, previous research has not yet established an integrated view regarding perceived work environment. In addition, most studies had a subjective approach with narrative descriptions, while standardized assessment tools were not applied (Chen, Leader, Sung, & Leahy, 2015). To overcome these limitations, this study applied an integrative approach based on the

theoretical framework of the Copenhagen Psychosocial Questionnaire II (COPSOQ). COPSOQ II, as a framework, was adequate as it covers all key factors of the psychosocial work environment, while it is not based on one single theory. It is generic and includes different analytical levels (Pejtersen et al., 2010). Furthermore, COPSOQ is a widely used tool with reliable and valid measures, compensating for issues regarding subjectivity in previous research. Therefore, eleven factors from the COPSOQ II framework were chosen to provide the structure for the literature review based on three main criteria: key individual and work environment factor in work life for individuals with ASD, relevant work environment factor related to key behavioral patterns in ASD, and relevant work environment related to support for individuals with ASD. Hence, this literature review also considered the chosen factors' relation to their operationalized construct in COPSOQ II (Pejtersen et al., 2010). Two additional factors – life satisfaction and using strengths – were also included, which are not part of the COPSOQ II framework. This study underlined the importance of three factors based on previous research and their vital role in work life and in quality of life in general: job satisfaction, life satisfaction and stress. Based on the conceptual categorization of COPSOQ II, job satisfaction was considered a person-work interface factor. Life satisfaction and stress were regarded as individual factors not specifically related to the work environment, however crucial factors in relation to work life. Furthermore, ten work environment factors were included: emotional demands, variation of work, predictability, role clarity, quality of leadership, social support from supervisor, social support from colleagues, social community, inclusivity/social responsibility, and using strengths. From these factors, three were regarded as closely related to central behavioral aspects of the autism construct based on DSM-V's description of the diagnostic category of ASD. Emotional demands was considered to be potentially related to deficits in social communication and interactions,

whereas variation of work and predictability were considered to be related to repetitive and restricted behavioral patterns in ASD.

Work Environment and Autism Spectrum Disorder

Job satisfaction. Job satisfaction has been demonstrated to be a key factor in retaining employees with physical, sensory and mental disabilities (Perez, Alcover, & Chambel, 2015) as well as employees without disabilities (Van Saane, 2003). Job satisfaction also has a strong correlation with person-job-fit in typical population (Kristof-Brown, Zimmerman, & Johnson, 2005). Parr and Hunter (2014) highlighted the correlation between authentic leadership and job satisfaction of individuals with ASD concluding that “support and consideration, upholding values and a balanced perspective, and providing some degree of structure may all be important” (p.551). The results of Lorenz et al. (2016) showed the highest correlation between job satisfaction and using personal strengths at the workplace. Furthermore, the study of Pfeiffer et al. (2018) has demonstrated job satisfaction in ASD to be in a significant positive correlation with involvement, peer cohesion, supervisor support, autonomy, task orientation, clarity, innovation and physical comfort. Furthermore, job satisfaction and physical comfort was also influenced by sensory sensitivity, showing decreased job satisfaction and physical comfort in higher levels of sensory sensitivity (Pfeiffer et al., 2018).

Life satisfaction. Specific aspects of the work environment have been suggested to be in connection with life satisfaction of individuals with disabilities, e.g. being accepted at work (Vornholt, Uitdewilligen, & Nijhuis, 2013). Lorenz et al. (2016) found a connection with self-efficacy (both general and occupational), in addition, individuals with ASD who perceived their employment crucial for their quality of life had higher satisfaction with life. Outside the work environment, loneliness has been found to decrease life satisfaction in

ASD, which may indicate the significance of social communities and support at the workplace (Mazurek, 2014).

Stress. It is important to consider that one of the most common co-occurring disorder in ASD are anxiety disorders (APA, 2013), which could contribute to increased levels of stress within and outside the workplace. Howlin (2000) also highlighted that the pressure to integrate and the environment's failure to understand individual needs in ASD might also contribute to heightened stress and anxiety. Hurlbutt and Chalmers (2004) also showed that a lack of understanding social routines, communication and the social environment may lead to increased stress at the workplace in ASD.

Emotional demands. The concept of emotional demands incorporates "the reactions of the individual as much as the demands at work", e.g. dealing with emotionally disturbing situations, other's personal problems, and own emotional involvement in work ("The construction of the scales in COPSOQ II", 2007, p.4). Emotional demands at work can be connected to core features in ASD, e.g. "deficits in social-emotional reciprocity", "reduced sharing of emotions", "deficits in understanding and use of gestures: to a total lack of facial expressions and nonverbal communication", "difficulties in sharing imaginative play or in making friends", "absence of interest in peers" (APA, 2013, p.88). Emotional demands at work can also be associated with emotion regulation (ER) - i.e. modification of emotional states for adaptive behavior - and has been suggested to explain emotional and behavioral patterns in ASD (Mazefsky et al., 2013). Furthermore, Mazefsky et al. (2013) stressed that previous research suggested decreased ER and inefficient ER strategies in adults with ASD (Samson, Huber, & Gross, 2012), including decreased cognitive reappraisal and increased suppression. Clinical descriptions further strengthened this hypothesis underlining a lack of motivational component, limited emotional understanding, self-monitoring and perspective taking (Mazefsky et al., 2013). In addition, Lorenz et al. (2016) demonstrated that individuals

with ASD may also need to deal with additional emotional and physical consequences of stress, e.g. loneliness, rejectedness, headache. In general, there is a lack of empirical research regarding emotion regulation or dealing with emotional demands in ASD, especially in adult population considering ecological validity and virtually non-existent in the context of employment.

Variation and predictability of work. Variation of work refers to the variety of tasks within a position, while predictability refers to being informed ahead of changes and plans and about own job position (“The construction of the scales in COPSOQ II”, 2007). Variation and predictability are both central aspects of the new working life including perceptions of fast tempo, constant changes and insecurity (Allvin, Aronsson, Hagström, Johansson, & Lundberg, 2011). Both can also be connected to core features of ASD, e.g. “repetitive patterns of behavior and interests, insistence on sameness, inflexible adherence to routines, distress at small changes, difficulties with transitions” (APA, p.50). These characteristics imply difficulties for individuals with ASD in work environments where disruptive changes can occur in job tasks and in the work environment, as routines and predictability have a central role in their everyday functioning (Keel et al., 1997). Regarding predictability in cognition in ASD, it has been proposed that the underlying cause of the autism phenotype might be the impairment of predictive ability (Sinha et al., 2014). Parr, Hunter and Ligon (2013) indicated a significant relationship between idealized influence - an aspect of transformational leadership described as providing a clear vision or goal clarity for employees - and decreased anxiety in ASD. In addition, case studies have shown that schedules for work tasks increased predictability among individuals with ASD (Burt, Fuller, & Lewis, 1991). However, variation of work has not yet been specifically assessed among employees with ASD, while predictability has not yet been quantitatively investigated.

Role clarity. Allvin et al. (2011) described the new work life as full changes and uncertainty leading to blurred boundaries of work. However, role clarity may help explicitly formulate expectations towards the employees (Panaccio & Vandenberghe, 2011). It is not only a clear description of the job tasks and goals, it also should include the expected output, the way of arranging job tasks and explicit expectations regarding the position (Boström, Hörnsten, Lundman, Stenlund, & Isaksson, 2013). Boström et al. (2013) found that role clarity among individuals without ASD was positively correlated with support from co-workers and empowering leadership. Boström et al. (2013) underlined that a lack of clarity can lead to role ambiguity or role conflict, which might result in decreased job satisfaction or work performance. Furthermore, in typical population, role clarity was negatively correlated with psychological strain in the study of Bliese and Castro (2000). Thus, role clarity might be a crucial factor in ASD at the workplace, since clear expectations can serve as guidelines in complex social situations or decrease complexity during changes in the environment, which are essential considering insistence on sameness and deficits in social communication and interaction in ASD.

Leadership. The study of Parr and Hunter (2014) aimed to investigate the relationship between leadership behaviors, employee attitudes and performance in ASD. While the authors found that leadership had an impact on employees with ASD as expected, there was no significant difference in terms of influence between different styles of leadership. Since Parr and Hunter (2014) found only insignificant correlations between different leadership styles and outcome variables, e.g. satisfaction, organizational commitment and engagement, they concluded that given the variety of symptoms and individual needs, there is not one dominant leadership approach that is more appropriate in ASD. However, Parr, Hunter and Ligon (2013) found that while some aspects of transformational leadership can be beneficial, others might have adverse effects, e.g.

inspirational motivation enhanced anxiety in ASD, which was related to decreased organizational commitment, individualized consideration, whilst individual consideration decreased anxiety and had “notable direct relationship with organizational performance” (p.618). Since leadership behaviors may not stay consistent over time, COPSOQ II applies the quality of leadership scale using a general evaluation of leadership by employees instead of specific leadership styles (Francioli et al., 2015). In COPSOQ II, the quality of leadership scale focuses on providing development opportunities for employees, prioritizing job satisfaction, efficient work planning, and solving conflicts (Pejtersen, Kristensen, Borg, & Bjorner, 2010). This scale has not yet been applied in the context of work in ASD.

Social support. As interaction and communication difficulties have the biggest effect on employment in ASD, especially challenges in interactions with the supervisor and colleagues often leading to termination, social support is essential (Hendricks, 2010). However, support must be individualized, tailored for each person’s unique needs and abilities (for review, see Hendricks, 2010; Chen et al., 2015). In COPSOQ II, the scale of social support includes social support from the supervisor and social support from colleagues with a focus on the frequency of provided support and the willingness to listen to problems (Pejtersen et al., 2010). Hendricks (2010) underlined the importance of the employees’ and the supervisors’ knowledge and awareness of autism to recognize individuals needs as well as strengths to provide sufficient support, as difficulties were reported by adults with ASD in the workplace due to lack of knowledge. Although supported employment programs include training to employers and colleagues creating a more inclusive work environment including TEACCH (Treatment and Education of Autistic and related Communication Handicapped Children and Adults) (Keel et al., 1997) and Prospects (Howlin et al., 2005), Chen et al. (2015) noted that many vocation interventions are not evidence-based. In addition, the role of

perceived support from the perspective of employees with ASD has not yet been investigated in a quantitative framework in relation to outcomes, such as job satisfaction.

Social community. The feeling of good atmosphere, efficient cooperation with colleagues and being part of a community (Pejtersen et al., 2010) can reflect a variety of core aspects of the work environment in ASD. In general, a positive rating in these dimensions might indicate that barriers have been overcome regarding stress and anxiety at work, difficulties in communication, social interaction and social integration possibly resulting in a higher level of job satisfaction. Furthermore, a sense of community at the work place might also reduce the impact of potential loneliness which was shown to be in a significant positive relationship with increased depression, anxiety, and decreased life satisfaction among adults with ASD (Mazurek, 2014). However, the relationship between perceived social community and these variables among others in ASD have not yet been explored.

Inclusiveness and social responsibility. Pejtersen et al. (2010) underlined the growing interest in the social inclusiveness and responsibility of the employers, therefore they included four aspects in COPSOQ II: gender, ethnicity, age, and health. However, the Swedish version of COPSOQ II focused on gender equality and equality between different ethnic and religious backgrounds (Berthelsen, Westerlund, & Kristensen, 2014). Regarding gender equality, the systematic review of Hayward, McVilly and Stokes (2016) found no differences in work experiences between the sexes in high-functioning autism. As previous research has established the significance of social support and community at work in ASD, inclusiveness and social responsibility might contribute to their impacts in the work experience. Furthermore, inclusiveness and social responsibility of the workplace might also overlap with perceived social support and social community from the employee perspective as they refer to similar aspects of the social environment. No previous research has been

identified in this aspect in ASD in terms of their assessment and other outcome variables, e.g. job- and life satisfaction or stress.

Using strengths. Seligman and Csikszentmihalyi (2000) stressed that psychology has dominantly applied a deficit-focused approach and described positive psychology's primary focus on positive individual traits. In the context of work and organizational psychology, Buckingham and Clifton (2001) and Rath (2007) argued for using and advancing people's strengths as the main approach for optimal performance and well-being at the workplace. Lorenz et al. (2016) suggested that this approach could be used in ASD to overcome challenges and to develop solutions. In their study, they asked if "personal strengths are used in current employment" and their results showed the strongest correlations with life- and job satisfaction. However, it is necessary to see if these results can be replicated.

Employment Support

In general, little is still known about effective support leading to successful employment, which can be considered one of the primary goals when entering adult life after education (Hendricks, 2010). Support programs for successful employment for individuals with ASD have been investigated and demonstrated positive results since the 1980's (Keel et al., 1997). For example, Keel et al. (1997) reported an 89% retention rate as the outcome of the Division TEACCH supported employment program highlighting the role of person-job fit, training and long-term support. Although, further case reports showed significant improvements in overcoming challenges in ASD at work (see Wehman, Revell, & Kregel, 1998), many vocation interventions are not evidence-based (Chen et al., 2015), as well as approaches to optimize person-job fit of individuals with autism (Lorenz & Heinitz, 2014). There are many forms of employment support for individuals with ASD, Müller et al. (2003) grouped vocational support in five categories by interviewing adults with ASD: "job matching, individualized ASD-specific job supports, communication supports, autism

awareness training, and attitudinal supports. In addition to transition services and assistive technologies (e.g. virtual reality), Chen et al. (2015) stated that contrary to the interest in multidisciplinary collaboration as a key element in efficient support, few researchers have investigated its role. However, more recently, Wehman et al. (2013) provided a description of Project SEARCH (Special Education as Requirements in Charter Schools) aiming to help the transition into adult life in ASD that included the idea of collaboration of multiple elements contributing to successful employment in several ways, e.g. “school staff, host business liaisons, rehabilitative services agency staff, developmental and/or IDs agency staff, employment services organization staff, transition students, and their families” (p.146). Although TEACCH and Project SEARCH among others are essential to help the transition from student to adult life and employment as they have a complex and long-term approach for support, there is also a great need to help and inform employers about practical changes they can implement to provide better work conditions for people with ASD.

Focusing on employed individuals with ASD and the impact of the psychosocial work environment, there are still many questions unanswered. Nonetheless, Pfeiffer et al. (2017) concluded by conducting qualitative interviews with employed adults with ASD that environmental adjustments at the workplace supported by supervisors might eliminate challenges even with a small investment. Hendricks (2010) reviewed several studies for workplace modifications: against distracting environment stimuli an environmental assessment can be used to estimate noise level, lighting or other interruptions (see Keel et al., 1997); to increase job predictability a consistent schedule, organizers, activity schedules, structured work systems can be used (see Burt et al., 1991); to decrease unstructured time in the workplace regular activities e.g. taking a walk can be applied (see Hagner & Cooney, 2005). Lorenz et al. (2016) used an online survey to ask individuals with ASD about difficulties and solutions before and during employment. They created two categories for

solutions: self-solutions (e.g. acceptance, communication, providing information about diagnosis) and external help (e.g. non-profit organizations, family, friends and colleagues).

The authors found that the most frequent solution was external help from the work environment in non-autism-specific work, in autism-specific work self-solutions was the most frequent, communication and acceptance (Lorenz et al., 2016). However, the perspective of professional support could add interesting insights to these results. In addition, the support aspect has not yet been assessed in relation to how employees with ASD perceive their work environment. In Sweden, as well as in previous research in general, there are substantial gaps in research regarding employment among individuals with ASD with a focus on what could be the most important work environment factors for employees with ASD, what could be the most important support areas to consider in employment support, and how can employers provide a better work environment for employees with ASD.

Current Study

Therefore, this current study focused on how employed adults with ASD perceive their psychosocial work environment, how psychologists at the Swedish Public Employment Services perceive their employment support for adults with ASD, and how these findings are related. As both perspectives, employed adults with ASD and psychologists' support, provide essential insights from different standpoints, and by the association of their results additional insights could be gained, two studies were performed. In addition, since the two studies essentially revolve around the same focal point, the most important factors to consider when providing better working conditions for employed adults with ASD, they are conceptually linked. The two approaches complement each other as they enable to establish the importance of work environment factors from both perspectives. Based on previous literature and the clinical description of ASD, ten work environment factors were in the center of both studies. The first study aimed to assess the importance of the ten work environment factors based on

how they correlated with and which of them best predicted job satisfaction, life satisfaction and stress among employed adults with ASD. Next, to cross-check the importance of these best predictors from the perspective of support, the second study aimed to assess the perceived frequency and importance of the same work environment factors as well as additional factors as support areas in the support of psychologists at the Swedish Public Employment Services given to job seeking and employed adults with ASD. In addition, the second study also aimed to identify and quantify the thematic categories of psychologists' recommendations in relation to these support areas to provide an overview of workplace adjustment recommendations for employers.

Research Questions

1. To what extent is job satisfaction, life satisfaction and stress in linear correlation with work environment factors among employed adults with ASD?
2. What are the best predictors of job satisfaction, life satisfaction and stress regarding work environment factors among employed adults with ASD?
3. What is the perceived frequency and importance of support areas in the support given to job seeking and employed adults with ASD by psychologists with a special focus on the factors that will be shown as the best predictors of job satisfaction, life satisfaction, and stress among employed adults with ASD?
4. What are the thematic categories of psychologists' workplace adjustment recommendations to employers regarding support areas with a special focus on the factors that will be shown as the best predictors of job satisfaction, life satisfaction, and stress among employed adults with ASD?

Method

Overview

The first step was to define the focus of the study in terms of work environment factors based on previous literature and the clinical description of ASD. Based on current results and the chosen theoretical framework described in the literature review, ten work environment factors were included: emotional demands, variation of work, predictability, role clarity, leadership, social support from colleagues, social support from supervisor, social community, inclusivity, and using strengths. The next step was to examine their importance from the perspective of how employed adults with ASD perceive their work environment and how psychologists at the Swedish Public Employment Services perceive their support given to job seeking and employed adults with ASD. The first study aimed to assess to what extent were they correlated with job satisfaction, life satisfaction and stress among employed adults with ASD. Next, to determine potentially the most important factors from among these ten work environment factors, the aim was to identify the best predictors for job satisfaction, life satisfaction and stress. Based on the ten work environment factors, an online questionnaire was made for employed adults with ASD. Next, to cross-check the importance of the work environment factors assessed from the perspective of employed adults with ASD, the same factors were included to be assessed from the perspective of psychologists' support given to job seeking and employed adults with ASD in the second study. However, life satisfaction was not included as it was not considered relevant to the employment support of psychologists, and additional support areas were included to augment the support activities with areas not included in the first study. Based on these factors, a second questionnaire was made for psychologists at the Swedish Public Employment Services. The aim was to assess these support areas in terms of their perceived frequency and importance and highlight those in relation to the work environment factors identified as the best predictors for job

satisfaction, life satisfaction and stress. An additional aim of assessing the perspective of psychologists was to ask for workplace adjustment recommendations for employers in relation to each of the support areas and highlight the thematic categories of recommendations regarding the support areas in relation to the best predictors for job satisfaction, life satisfaction and stress. Although the two studies were performed simultaneously, the analysis of the first study was performed first, while the analysis of the second study was performed afterwards based on results of the first study. To the knowledge of the author, there is no analytical framework to apply for simultaneous analysis of the results of both studies.

Design

Both study 1 and study 2 applied a cross-sectional design approach, since it is “ideally suited for the descriptive and predictive goals of survey research” (Shaughnessy, Zechmeister, & Zechmeister, 2012, p.155). Two online self-report questionnaires were created, separately for study 1 and study 2. The cross-sectional design was appropriate to answer the main research questions, as study 1 assessed correlational relationships and best predictors, while study 2 focused on descriptive statistics and qualitative content analysis regarding psychologists’ support. As these two perspectives were used to investigate different populations applying distinct procedures, they were described separately in study 1 and 2.

Study 1

Study 1 focused on the relationships of job satisfaction, life satisfaction and stress with ten perceived work environment factors among employed adults with ASD. Furthermore, the study also aimed to identify the best predictors of job satisfaction, life satisfaction and stress from the ten work environment factors.

Participants

The participants were recruited by sharing an online self-report questionnaire in Facebook groups and on Facebook pages related to Swedish associations focusing specifically on autism or other conditions including autism. 70 adults (51 women, 19 men, $M_{age} = 38$, age range: 22-64 years) responded to the questionnaire shared in various Facebook groups and sites and fulfilled the criteria of adult age, having current employment and having an ASD diagnosis. However, these were only stated requirements for participation and have not been confirmed by additional data collection due to ethical considerations for anonymity. The target group of these Facebook groups are usually adults, adolescents, and children with ASD and other conditions (e.g. ADHD), relatives as well as professionals. These groups were established for building an online community for specific geographical parts throughout Sweden. The link to the questionnaire was also shared on public Facebook pages to also reach adults with ASD in Sweden who are not members of these groups. The target population of this study was employed adults with ASD in Sweden, while the limitations due to the online sampling method were acknowledged. Participation rate could not be calculated, as some of these groups were diverse and open to the public - like the Facebook pages - so data was not collected regarding the number potential participants. Four responses were excluded, one due to providing no information about age, three because of repeated submissions of the questionnaire. Regarding participants' levels of education: 32 of them had high school or similar, 25 bachelor or college, 11 master's degree, 1 primary school and 1 no response. Among the respondents, 32 worked full-time, 37 part-time, 1 did not respond, and further 15 reported that they received support from the Swedish Employment Services for their current position.

Material

For the online self-report questionnaire used in study 1, see Appendix A. The questionnaire included 11 scales from COPSOQ II, and a life satisfaction and a using strengths scale. COPSOQ is a widely used tool to measure psychosocial factors of the work environment regardless of profession (Pejtersen et al., 2010). The Swedish version from Berthelsen et al. (2014) was used to increase participation rate as English - as a second language - was not expected to be spoken by every potential participant. Demographic information was collected: age, gender, country of residence, level of education. In addition, information about work time (full-time/part-time) was collected and if they had previously received support from the Swedish Public Employment Services for their current position.

The questionnaire used the original scales of the Swedish version of COPSOQ II, see Appendix A. It included emotional demands (4 item) (e.g. Is your work emotionally demanding?), variation of work (1 item) (Is your work varied?), predictability (2 item) (e.g. At your place of work, are you informed well in advance concerning for example important decisions, changes, or plans for the future?), role clarity (3 item) (e.g. Does your work have clear objectives?), quality of leadership (4 item) (e.g. To what extent would you say that your immediate supervisor gives high priority to job satisfaction?), social support from colleagues (3 item) (e.g. How often do you get help and support from your colleagues?), social support from supervisors (3 item) (e.g. How often do you get help and support from your nearest superior?), social community (3 item) (e.g. Is there a good atmosphere between you and your colleagues?), job satisfaction (4 item) (e.g. Regarding your work in general. How pleased are you with the physical working conditions?), inclusiveness/social responsibility (2 item) (e.g. Are men and women treated equally at your workplace?) and stress (4 item) (e.g. How often have you been irritable?). Furthermore, a one-item life satisfaction scale was adapted from Cheung and Luca (2014) translated to Swedish by the author: "In general, how satisfied are

you with your life?”, see question 44 in Appendix A. Cheung and Luca (2014) assessed the validity of the one-item scale compared to the multi-item scale of Satisfaction with Life Scale (SWLS) and reported high level of validity and almost identical performance. In addition, a four-item scale created by the author - also in Swedish - was added to measure using strengths. This scale combined using strengths, appreciation of strengths from colleagues and supervisor, and support for using strengths at the workplace in one scale, which included: “1. Do you feel that you can use your strengths in your work? 2. Do you feel that your colleagues appreciate your strengths? 3. Do you feel that your direct supervisor appreciates your strengths? 4. Do you feel that you are supported to use your strengths in your work?”, see question 11 to 14 in Appendix A. The goal was to create a scale capturing using strengths in a social context focusing on perceived support and appreciation regarding strengths. All scales were one-to-five Likert scales, except job satisfaction and life satisfaction, which used a one-to-four scale. A high score in a measure indicated high level of that dimension in the perceived work environment.

Procedure

A non-probability, convenience sampling method was applied due to using an Internet survey shared on social media platforms. A brief introduction to the study including a link to the questionnaire was shared in Facebook groups and on Facebook pages and, in some cases, these were shared by other users as well, see appendix A. These were created by Swedish organizations with wide-spread online community presence, including the Autism and Asperger Association, Attention and Misa. Data collection lasted for approximately 5 weeks.

Ethical Considerations

Regarding potential harm, previous research has not applied the Copenhagen Psychosocial Questionnaire II with participants diagnosed with autism spectrum disorder. However, previous studies have applied questionnaires for measuring work-related factors,

which have not raised concerns considering potential harm, for example, Lorenz et al. (2016) and Pillay and Brownlow (2016). Furthermore, also to avoid potential harm, participants were informed on the first page of the questionnaire regarding their right to withdraw from the study even after consenting to participation without asking why. In addition, contact information was provided to enable participants to ask questions or provide feedback.

Regarding appropriate formulation of questions, Weiss, Thomson, and Chan (2014) reviewed studies examining emotional regulation in autism spectrum disorder and found that 38% of studies included self-report measures. In the study of Samson, Gross, and Huber (2012) focusing on emotional regulation, the authors stated that "...although online studies have been shown to be as reliable and valid as paper-pencil based assessments (e.g., Gosling, Vazire, Srivastava, & John, 2004), and previous studies have shown that individuals with AS/HFA are able to respond to self-report questionnaires adequately (e.g., Berthoz & Hill, 2005), the format limited our assessment" (p.5). However, due to the lack of usage of the COPSOQ questionnaire in this population, one of the limitations of the study will be the lack of pretesting the questionnaire regarding the formulations of the questions in the context of emotional states among adults with ASD.

Regarding written informed consent, by clicking the *next* button on the introduction page of the questionnaire, the participants confirmed that they have read and understood the terms of the study and agreed to participate. All information about the questionnaire and participation was included on the first page of the questionnaire, including a description of the author conducting the study, supervisor and university, the motivation and aim of the study, time to fill out the survey, requirements for participation and ethical considerations. The ethical considerations included anonymity of the survey, confidential handling of all collected information, voluntary participation, the right to cancel even if previously agreed to do so without asking why. Regarding confidential handling of collected information, the data

was collected through Google Forms, a password-protected platform where users can create an online survey and send the link to potential participants. Respondents have been informed prior to participation that collected data would be handled confidentially. After data collection was finished, data have been removed from Google and stored in a password protected external memory storage. Only the author of the study had access to collected data. The questionnaire was anonym, as it has not collected data regarding name, position, email-address or IP-address or any other personal or sensitive information that could be used to identify a participant. Information regarding gender, age, country and level of education was collected but was only analyzed and communicated in the study as overall group features. Participants were indicated by numbers based on the order of participation. Participants have been informed about anonymity prior to agreeing to the conditions of the study. As the questionnaire was shared on Facebook, data has not been collected regarding any activity on Facebook. Furthermore, to the author's knowledge, Facebook has not collected data in connection to filling out the questionnaire.

Data Analysis

The R software was used for all statistical analysis. The data analyses included the measures of job satisfaction, life satisfaction, stress, and ten work environment factors: emotional demands, variation of work, predictability, role clarity, quality of leadership, social support from supervisor, social support from colleagues, social community, inclusivity/social responsibility, and using strengths. Based on COPSOQ's standard procedure, the measures with a one-to-five Likert scale have been transformed to a one-to-hundred scales ($1 = 0$, $2 = 25$, $3 = 50$, $4 = 75$, $5 = 100$) and the average was calculated. The measures with a one-to-four Likert scale have also been transformed to one-to-hundred scales ($1 = 0$, $2 = 33$, $3 = 66$, $4 = 100$). The scales for life satisfaction and using strengths have also been transformed to a one-to-hundred scales to be aligned with the COPSOQ measures. The first step was to perform a

reliability analysis for all scales with multiple items. As one of the most important aspects of scales is internal consistency with a suggested minimum of 0.7 (Pallant, 2016), the Cronbach's alpha coefficient was assessed. To answer the first question, to what extent is job satisfaction, life satisfaction, and stress correlated with the work environment factors, the assumptions for linear correlation - normality, linearity, homoscedasticity, and outliers - were checked by visual inspection of a scatterplot matrix including all variable. Next, Person's product-moment correlation was performed. In order to identify the best predictors for job satisfaction, life satisfaction and stress, the first step was to find the best subset of the ten candidate variables for each outcome variable. To compare numerous potential models consisting of the combinations of all included predictors to find the best model, automated model selection for the best multiple linear regression model predicting job satisfaction, life satisfaction and stress separately was performed based on Navarro (n.d.), Zhang (2016) and Calcagno (2015). This procedure is advantageous for variable selection, when there are many potential explanatory variables (Zhang, 2016) and a large number of candidate models (Calcagno, 2015). To reduce the number of predictor variables was also key in addressing generalizability considering the current sample size ($N = 70$). As Pallant (2016) stated, the required sample size using multiple linear regression differs among authors, for example, $N > 50 + 8m$, where m is the number of variables or 15 participants per predictor. Based on these suggestions, it was reasonable to accept up to 3-4 predictors in the final multiple regression models while acknowledging differing levels of limitations regarding generalizability. Step-wise regression with backward elimination was performed separately for job satisfaction, life satisfaction and stress. The criteria determining entry in the model was based on potential relevance in relation to the outcome variable, whereas the criteria for elimination were based on two approaches. In each case, the initial regression model included all ten work environment factors and was performed separately with two different criteria for variable

selection. First, second-order Akaike's information criterion (AICc) was used with the `glmulti` package (Calcagno, 2015) as suggested by Burnham and Anderson (2002) to correct for the small sample size in relation to the number of variables. Then, the Bayesian Information Criterion (BIC) with the `glmulti` package (Calcagno, 2015) was also considered based on Zhang (2016), as the author underlined that using BIC might result in final models including fewer variables. Since these different approaches might result in slightly different models (Zhang, 2016), both were used to confirm that the final model was well-founded. In case there was a difference between the outcomes of the different criteria for variable selection, the variable was included in the model if it was in a significant linear relationship with the outcome variable and its inclusion resulted in a higher R-squared value of the multiple linear regression model. For more information about the included and other variable selection methods in R, visit the R archive network ("Variable Selection Methods," 2018). After identifying the best multiple linear regression model for each outcome variable, the next step was to perform regression diagnostics to address the assumptions of multiple linear regression. First, the `gvlma` package was used for examining all linear regression assumptions. Furthermore, the `qqplot` and the distribution of studentized residuals was checked for normality. As there were moderate and strong correlations between the predictors, the variance inflation factor (VIF) was measured to avoid multicollinearity. Finally, Cook's distance plot was used to identify possibly outliers. If taking out the outliers considerably influenced the regression model, they were excluded. Finally, multiple linear regression was performed with the with the final model.

Results

As almost all scales showed high reliability, all the scales have been included in further analysis, see Table 1.

Table 1

Comparison of Cronbach Alpha Coefficients for Multiple-item COPSOQ II Scales from the Original, Swedish Version and Current Study

COPSOQ Scales	Original Scales	Swedish Version	Current Study
Emotional Demands	0.87	0.80	0.83
Predictability	0.74	0.71	0.63
Role Clarity	0.78	0.72	0.84
Leadership Quality	0.89	0.90	0.90
Support from Colleagues	0.70	0.71	0.81
Support from Supervisor	0.79	0.82	0.91
Social Community	0.85	0.80	0.87
Job Satisfaction	0.82	0.84	0.87
Inclusivity/SR	0.63	-	0.72
Stress	0.81	0.91	0.86

Note. The original scales are from the study of Pejtersen et al. (2010). The Swedish version is based on the study of Berthelsen et al. (2014).

Predictability (a 2-item scale in the Swedish version) showed the lowest internal consistency, however, for small scales with less than 10 variables the inter-item correlation might be more appropriate (Pallant, 2016). With 0.46 r average score, the inter-item correlation was in an acceptable range, as suggested by Briggs and Cheek (as cited in Pallant, 2016). Furthermore, a scale for measuring using strengths was created by the author, which showed a 0.86 Cronbach alpha coefficient (average r for inter-item correlation was 0.59). If the first item was dropped in this scale, it would result in a slightly higher Cronbach alpha. However, as the difference was minimal, this item remained in the scale. Variation of work was measured with a 1-item scale also based on the Swedish version of COPSOQ II.

Next, the correlations of the ten perceived work environment factors with job satisfaction, life satisfaction and stress are presented, see Table 2. Central tendency and dispersion of all included scales are also shown by mean and standard deviation.

Table 2

Correlations of Work Environment Factors with Job Satisfaction, Life Satisfaction, and Stress Among Employed Adults with ASD

Work Environment Factors	<i>M</i>	<i>SD</i>	Job Satisfaction	Life Satisfaction	Stress
Emotional Demands	62.23	25.00	-0.24*	-0.17	0.43***
Variation of Work	65.71	25.24	0.31**	0.24*	-0.14
Predictability	46.25	24.57	0.47***	0.30*	-0.45***
Role Clarity	62.62	24.88	0.59***	0.30*	-0.29*
Quality of Leadership	49.82	28.65	0.55***	0.39***	-0.45***
Support from Supervisor	57.98	30.83	0.47***	0.32**	-0.30*
Support from Colleagues	58.81	25.84	0.48***	0.30*	-0.35**
Social Community	64.05	27.23	0.61***	0.28*	-0.45***
Inclusivity/Social Resp.	73.75	24.55	0.30*	0.13	-0.09
Using Strengths	60.89	27.26	0.64***	0.45***	-0.44***

Note. Significance level: * = $P \leq 0.05$, ** = $P \leq 0.01$, *** = $P \leq 0.001$. Coefficients $> .40$ are indicated in bold.

Job satisfaction ($M = 61.99$, $SD = 24.26$) was shown to be in a significant relationship with all work environment factors. Predictability, role clarity, quality of leadership, support from supervisor, support from colleagues, social community, and using strengths were the highest correlations of job satisfaction. Using strengths had the strongest correlation from all factors. The only negative correlation from the work environment factors was emotional demands. Life satisfaction ($M = 59.05$, $SD = 26.12$) was shown to be in a significant relationship with all work environment factors except emotional demands and inclusivity/social responsibility. However, all relationships with work environment factors were weak beside a moderate relationship with using strengths. Stress ($M = 62.68$, $SD = 22.01$) was also shown to be in significant relationship with almost all work environment factors except variation of work and inclusivity/social responsibility. From the work environment factors, the strongest correlations of stress were emotional demands, predictability, quality of leadership, social community, and using strengths. All significant relationships of stress were negative, except a positive relationship with emotional demands. Finally, job satisfaction, life satisfaction, and stress were significantly intercorrelated, especially stress and life satisfaction. For an overview of all linear relationships, see Appendix B.

In the variable selection according to the prior stated analysis procedures, the final multiple linear regression model predicting job satisfaction included using strengths, role clarity, social community and emotional demands, see Table 3. The regression model significantly predicted job satisfaction and explained a significant portion of the variance in job satisfaction scores, $F(4,62) = 31.58, p < .001, R^2 = .67$. Within the multiple regression model, however, social community and emotional demands did not significantly predict job satisfaction, while role clarity and using strengths positively and significantly predicted job satisfaction.

Table 3

Multiple Regression Analysis Predicting Job Satisfaction from Using Strengths, Role Clarity, Social Community and Emotional Demands (N = 67)

Predictors	<i>B</i>	<i>SE</i>	Beta (β)	<i>t</i>	<i>P</i>
Using Strengths	0.35	0.09	0.40	3.82	< .001***
Role Clarity	0.34	0.09	0.35	3.76	< .001***
Social Community	0.14	0.08	0.17	1.70	.09
Emotional Demands	-0.13	0.07	-0.13	-1.78	.07

Note. Significance level: * = $P \leq 0.05$, ** = $P \leq 0.01$, *** = $P \leq 0.001$.

The final linear regression model with using strengths as a predictor variable significantly predicted life satisfaction as an outcome variable, however, it only explained a limited portion of the variance in life satisfaction scores, $F(1,17) = 22.29, p < .001, R^2 = .20$, see Table 4. Using strengths positively and significantly predicted life satisfaction.

Table 4

Linear Regression Analysis Predicting Life Satisfaction from Using Strengths (N = 70)

Predictor	<i>B</i>	<i>SE</i>	Beta (β)	<i>t</i>	<i>P</i>
Using Strengths	0.43	0.10	0.44	4.15	< .001***

Note. Significance level: * = $P \leq 0.05$, ** = $P \leq 0.01$, *** = $P \leq 0.001$.

The final model including emotional demands, using strengths, and predictability significantly predicted stress and explained a moderate portion of the variance in stress

scores, $F(3,63) = 16.43$, $p < .001$, $R^2 = .43$. Specifically, emotional demands positively and significantly predicted stress, whereas using strengths and predictability were significant negative predictors of stress, see Table 5.

Table 5

Multiple Regression Analysis Predicting Stress from Emotional Demands, Predictability, and Using Strengths (N = 67)

Predictors	<i>B</i>	<i>SE</i>	Beta (β)	<i>t</i>	<i>P</i>
Emotional Demands	0.37	0.08	0.41	4.33	< .001***
Predictability	-0.28	0.10	-0.30	-2.75	.007**
Using Strengths	-0.19	0.09	-0.23	-2.08	.041*

Note. Significance level: * = $P \leq 0.05$, ** = $P \leq 0.01$, *** = $P \leq 0.001$.

Discussion

Study 1 focused on the perceived psychosocial work environment among employed adults with ASD in Sweden. More specifically, the study aimed to identify to what extent is job satisfaction, life satisfaction, and stress correlated with perceived work environment factors, and also to identify the best predictors of job satisfaction, life satisfaction, and stress from these work environment factors. Regarding the target population, the study aimed to represent currently employed adults with ASD in Sweden. However, ecological validity is limited, since there was no data collected regarding the participants diagnosis, and based on the complexity and length of the questionnaire, the online self-report design requiring some level of activity on social media platforms, and the requirement for current employment, the sample might be biased towards high-functioning adults with ASD, only a subgroup of all employed adults with ASD. Generalizability was also influenced by the small sample size in relation to the number of variables. Regarding ecological validity, as the study only measured perceived work environment and did not collect data regarding participants work environment, real-life applicability might be partially limited.

Job satisfaction. Predictability, role clarity, quality of leadership, support from supervisor, support from colleagues, social community and using strengths had the strongest relationship with job satisfaction from the included work environment factors. From among all factors, using strengths and social community had the highest correlation with job satisfaction. Current results, although using different operationalization of similar concepts, are aligned with previous research focusing on job satisfaction of individuals with ASD demonstrating positive correlations with authentic leadership (Parr & Hunter, 2014), using strengths (Lorenz et al., 2016), clarity, supervisor support, and peer cohesion (Pfeiffer et al., 2018). However, this is the first study to show significant negative correlation with emotional demands, and positive correlation with variation of work, predictability, role clarity, support from colleagues, inclusivity/social responsibility. Although emotional demands are closely related to core features within the clinical description of ASD as described by APA (2013), the negative correlation with job satisfaction was only weak. On the other hand, predictability - also closely related to core behavioral patterns in ASD - had a stronger significant positive correlation with job satisfaction, strengthening the description by Keel et al. (1997) underlining the difficulties resulting from unexpected changes in ASD. However, as this study did not apply a reference group, this result might not be specific to employed adults with ASD. Furthermore, variation of work had a positive relationship with job satisfaction in contrast with APA's description of "insistence of sameness, inflexible adherence to routines, distress at small changes, difficulties with transitions" regarding ASD (2013). This demonstrated that variation of work can be a positive feature of work life depending on individual needs, which underlines the importance of individual assessment at work and reflects the diversity within the autism spectrum. The positive correlation of job satisfaction with predictability as well as role clarity in general is in line with the statement of Panaccio and Vandenberghe (2011) describing the reduction of uncertainty by role clarity. In addition,

Boström et al. (2013) also underlined that a lack of role clarity might decrease job satisfaction, although the authors referred to typical population, not employed adults with ASD. Considering leadership, Parr and Hunter (2014) did not find correlations between specific leadership behaviors styles and job satisfaction, results have shown a moderate positive relationship based on COPSQ's quality of leadership concept underlining development opportunities, prioritizing job satisfaction, efficient work planning, and solving conflicts (Pejtersen et al., 2010). The positive relationship between job satisfaction and support from supervisor and colleagues is in line with the review of Hendricks (2010) regarding the importance of social support as communication difficulties might have the biggest effect on employment in ASD. Furthermore, social community had the second highest positive correlation with job satisfaction, which showed that despite potential deficits in social interaction and communication, perceived community might have a key role in job satisfaction. Inclusivity/social responsibility had the lowest positive correlation with job satisfaction, which showed that social community itself might be more central in terms of work experience than inclusivity of the workplace regarding gender, ethnicity and religion. Finally, results are in line with previous assumptions regarding the vital role of using strengths at work, as stated by Buckingham and Clifton (2001), Rath (2007) and Lorenz et al. (2016). Using strengths had the highest positive correlation with job satisfaction from all psychosocial variables of the work environment. This is in line with the result of Lorenz et al. (2016) in which the using strengths item had the highest correlation with job satisfaction. However, in this study, the measure for using strengths at work, created by the author of the study, included using strengths and additional three aspects: appreciation of strengths by colleagues, appreciation of strengths by supervisor, and support for using strengths. Thus, further research is needed to establish validity and reliability of this measure and confirm its importance among employed adults with ASD.

Life satisfaction. Life satisfaction had almost only weak correlations from all work environment factors, except for a moderate positive relationship with using strengths. This result underlined the importance of using strengths at work and was in line with the results of Lorenz et al. (2016), showing a positive correlation with using strengths and life satisfaction. In addition, this result demonstrated that using strengths at work may have the strongest relationship with life satisfaction among all psychosocial variables in the work environment, although life satisfaction was not a work-specific variable. From all included factors, stress had the highest correlation with life satisfaction.

Stress. Results showed stress to be positively correlated with emotional demands, and negatively correlated with predictability, role clarity, quality of leadership, support from supervisor, support from colleagues, social community, inclusivity/social responsibility, and using strengths. However, stress had only moderate relationships with emotional demands, predictability, quality of leadership, social community and using strengths, and only weak correlations with role clarity, support from supervisor, and support from colleagues. In addition, stress did not have a significant relationship with variation of work and inclusivity/social responsibility. Furthermore, stress was not positively correlated with variation of work. The highest correlations among the work environment factors were predictability, quality of leadership and social community. The results could be related to Howlin's (2000) assumption regarding the pressure to integrate and increased stress, since there was a negative moderate relationship between social community and stress. The only positive correlated variable with stress was emotional demands at work, however, the relationship was only moderate. Considering social interaction and emotional deficits based on APA's description of ASD, emotional demands were expected to have a stronger negative relationship with stress and job satisfaction, however, diversity in ASD and differences in answering questions about emotional states in this population could potentially affect the

results. This was the first study to show that stress had a positive relationship with emotional demands, and a negative relationship with predictability, quality of leadership, social community, and using strengths among adults with ASD.

Best predictors. Using strengths and role clarity were the best predictors of job satisfaction, which underlined the importance of providing detailed information about the position, tasks and expectations, as well as providing opportunities to apply strengths in work and providing support and appreciation as regards to individual strengths both from colleagues and direct supervisor. This is again in line with the results of Lorenz et al. (2016), that showed the highest correlation between job satisfaction and using personal strengths at the workplace, while it is also in line with the results of Boström et al. (2013) that underlined that a lack of clarity might result in decreased job satisfaction. Life satisfaction was significantly predicted only by using strengths from all work environment factors, which is again in line with the results of Lorenz et al. (2016). Regarding stress, the best predictors were emotional demands, predictability, and using strengths. While emotional demands positively predicted stress, predictability as well as using strengths were negative predictors. This is in line with the APA's (2013) description of ASD, as emotional demands and predictability can be connected to central behavioral features in ASD. To the knowledge of the author, using strengths was not mentioned in previous research in relation to stress among adults with and without ASD, thus it was unexpected as a significant negative predictor. However, it was the weakest predictor from these three significant predictors, while the strongest was emotional demands. Future research is needed to examine the relationship of using strengths and decreased stress among employed adults with ASD. Finally, this was the first study to show that using strengths was a significant predictor for job satisfaction, life satisfaction and stress among employees with ASD underlining the importance of support, appreciation and opportunities for using strengths at work for employed adults with ASD.

Limitations

When assessing the strengths of conclusions regarding study 1, the following limitations have been considered given the study design and the statistical analysis applied. Due to the lack of data collection regarding specific clinical diagnosis, the diversity within the autism spectrum - heterogeneity and comorbidity - could not be considered. In addition, there could be a selection bias in favor of high-functioning individuals with ASD due to the requirements for participation, formulation of the questions and the length of the study. In addition, data regarding how long they have been working there and in what position, which could potentially affect the relationship between these measures, were not collected. Furthermore, using an online self-report approach and having the criteria for current employment affected the strength of the selection procedure and potentially resulted in response and sample bias, as it narrowed down the sample size to people who are already employed, have access to computers, are at least minimally active on the chosen social media platforms and are also motivated to participate in the study. There was also a gender bias in the sample: 51 women, 19 men, which significantly differs from the true male-to-female gender ratio in ASD reported to be 3:1 by Loomes, Hull, and Mandy (2017). In addition, considering the clinical description of ASD, the validity and reliability of the question formulations related to emotional states have not been previously tested. In addition, the small sample size also restricted the strength of conclusions and generalizability given the used statistical analysis and the number of variables included. Finally, the translation of the questions from English to Swedish for measuring using strengths at work and life satisfaction have not been previously tested.

Study 2

The second study focused on the support provided by psychologists at the Swedish Public Employment Services to job seeking and employed adults with ASD and their

employers. Psychologists rated the perceived frequency and importance of the same work environment factors as in study 1 as support areas in their provided support, as well as additional support areas. Study 2 focused on the results of study 1, specifically the best predictors of job satisfaction, life satisfaction and stress, which included role clarity, predictability, emotional demands and using strengths. Thus, these support areas were highlighted in the results. Furthermore, qualitative content analysis was used to identify thematic categories of workplace adjustment recommendations for employers in relation to these support areas.

Participants

Thirty-eight psychologists employed at the Swedish Public Employment Services (24 women, 14 men, $M_{age} = 47,8$, age range: 32-64 years) responded to the questionnaire and fulfilled the requirement for participation. Requirements for participation included working as a psychologists at the Swedish Public Employment Services and having experience in providing employment support for adults with ASD and/or their employers. Participants were recruited by sharing an online self-report questionnaire through internal communication with the support of a contact person at the organization. Two of the participants had PhD level education, while all other participants had MA/MSc level education. All participants had experience supporting individuals with autism and/or their employers. Regarding this experience, 12 participants supported approximately 25-50 individuals with autism, 8 respondents supported around 1-10, 7 participants supported between 10-25, 6 supported more than a 100, 5 respondents supported around 50-100 individuals with ASD.

As the Swedish Public Employment Services does not register or apply diagnostic information when providing support, the recommendations for workplace adjustments for adults with autism or their employers were not related to specific diagnostic features, thus the heterogeneity and comorbidity in autism could not be considered. Furthermore, psychologists

working in administrative positions, management or recruitment were excluded by the contact person. Target population consisted of all psychologists at the Swedish Public Employment Services with experience in supporting adults with ASD and their employers. As confirmed by the contact person, all psychologists at Swedish Public Employment Services (approximately 320) received the link to the questionnaire, however, new employees without any experience were excluded by the contact person and previous employees might have received it as well. Thus, the response rate was approximately 11.8%.

Although there was no data collected through the online survey regarding the participants' position in more detail, general information about the psychologists in the organization was collected through personal communication with contact persons and the Swedish Public Employment Services' website ("About Arbetsförmedlingen," 2018). Areas of work activities include individuals (e.g. assessing interests, needs, job satisfaction), groups (e.g. workgroup dynamics, leadership), work (e.g. work environments, individual-task fit), and organizational development. General work assignments include guidance, investigation, and support efforts. Guidance primarily refers to conversations with individuals to help reach decisions on work-related issues and increase self-confidence and motivation. Investigation aims to prepare jobseekers for work and to help formulate realistic work goals by performing assessment (e.g. cognitive abilities, personality, interests, talents, and learning ability), structured interviews, assessing the need for psychological adaptation of a workplace and/or other support. Support efforts involve supportive dialogues for jobseekers, psychosocial support both for the employee and employer, and assessing work environment implications based on medical documents. Psychologists come in contact with individuals with ASD through the employment officer, when a person with documentation of reduced working capacity (including ASD) wishes to be considered for a placement. Psychologists consult employment officers with the main goal of clarifying abilities, resources, interests, special

needs to optimize workplace choice and the work environment and to provide possible continued support. The durations of the contacts can last from 1 to 10 sessions or for a whole year depending on individual needs, which might be repeated based on the success of employment and recommendation of adjustments.

Material

For the online questionnaire used in study 2, see Appendix C. The psychologists were asked about their support experience regarding the work environment factors included in study 1 as support areas: emotional demands, variation of work, predictability, role clarity, quality of leadership, social support from colleagues, social support from supervisors, social community, inclusivity/social responsibility, using strengths. Furthermore, to provide a more detailed picture of work life and employment support for adults with ASD, six additional areas were adopted from the study of Lorenz et al. (2016) (interaction with colleagues, interaction with supervisors, interaction with customers, general communication, work setting and sensory influences, and other social situations) as well as job satisfaction and stress. Life satisfaction was not considered relevant to the employment support of psychologists; thus, it was not included.

Three questions were asked regarding each support area: (a) frequency of provided support in a specific aspect (e.g. how often have you provided support regarding role clarity at the workplace?), (b) the importance of work adjustment in that aspect (e.g. based on your experience, is it important to adjust the work environment in this aspect?), and (c) recommended work environment adjustments to employers in that aspect (e.g. if applicable, what adjustments to the workplace have you recommended for employers?). A one-to-five Likert scale was applied for frequency (1 = never/hardly ever, 5 = always) and importance (1 = no, not at all, 5 = yes, absolutely). For recommendations for workplace adjustments for employers, the participants answered the same open-ended question.

Procedure

A contact person at the Employment Services forwarded the link to the questionnaire by internal communication to all psychologist employees working as practicing psychologists as it was confirmed by personal communication.

Ethical Considerations

Issues regarding potential harm based on the formulation of questions were considered but could not be identified. However, participants were informed as regards to their right to withdraw from the study even after consenting to participation without asking why. Participants provided informed consent by clicking the *next* button on the introduction page of the questionnaire, thus confirming that they have read and understood the terms of the study and agreed to participate. All information about the questionnaire and participation was included on the first page of the questionnaire, including a description of the author conducting the study, supervisor and university, the motivation and aim of the study, time to fill out the survey, requirements for participation, ethical considerations and personal contact information, see Appendix C.

Ethical considerations included: anonymity of the survey, confidential handling of all collected information, voluntary participation, the right to cancel even if previously agreed to do so without asking why. All information collected was handled confidentially. Data was collected through the password-protected Google platform, then has been removed and transferred to a password-protected external memory device. To ensure anonymity, further data was not collected regarding the participants' position but data regarding age and gender was collected. Sensitive data or any data that could lead to the identification of participants have not been collected or communicated in the study. Participants were informed about anonymity. Participants were represented by numbers based on the order of participation. Only the author had access to collected data.

Analyses

First, to calculate the mean and the standard deviation of the frequency and the importance of included support areas with a special focus on role clarity, predictability, emotional demands, and using strengths, descriptive statistics was used in R with the *pastecs* package. Next, a category system was established based on the qualitative analysis of the workplace adjustment recommendations. For an example of how the categories were derived, based on Bengtsson (2016), see appendix D. The qualitative analysis included four stages: “decontextualization (identifying meaning units), recontextualization (including content, excluding dross), categorization (identifying homogenous groups), compilation (drawing realistic conclusions)” following Bengtsson (2016, p.9). The choice of analysis method regarding the content analysis was manifest analysis, in contrast with latent analysis described by Bengtsson (2016), as the aim was not to identify the underlying meaning but to create thematic categories based on specific recommendations of work environment adjustments. As the questionnaire was in English, eight answers written in Swedish were excluded from the qualitative analysis. Each answer to a question from an individual participant was analyzed separately to preserve original train of thought and later to link back the identified thematic categories to the question which referred to a specific support area.

Following the description of Bengtsson (2016, p.11), the first step was the decontextualization phase, where each answer was broken down into smaller meaning units, which were all given a code, called as the “open coding process”. From these, a coding list was created, which was then used to identify the sub-categories, which are the most specific work environment adjustment recommendations in the final category system. The analysis method was inductive, as the coding list was created inductively and was performed repeatedly to increase reliability following the recommendation of Bengtsson (2016). In the second stage, the coding list was used to check if they covered all key aspects in the content,

while in third stage, sub-categories were organized into thematic categories, which were then sorted into general categories. In the final stage, the meaning units were linked with the established categories using manifest analysis. Furthermore, addressing trustworthiness throughout the process of qualitative analysis was key. Three crucial aspects were considered - credibility, dependability, and transferability - to achieve trustworthiness, while acknowledging the limits of generalization. As Bengtsson (2016) also underlined, the main aim of this method was not to arrive at a definite truth but to gain a deeper understanding and providing multiple perspectives in a subject. Credibility was important to make sure that all relevant data has been included, to reduce personal bias as much as possible, and to ensure that the process of analysis was adequate. Dependability refers to the changes throughout the coding procedure, while transferability could be referred as generalizability, considering the applicability of results to different contexts or populations (Bengtsson, 2016). Regarding credibility and dependability, due to ethical considerations, a co-investigator was not applied, and the inter-observer reliability was not measured. To increase credibility, examples for each thematic category was included. To increase dependability, changes in the coding decisions were recorded in case of relabeling. Representativity of the sample was considered based on sample size, collected demographical data, experience and position. The thematic categories were quantified in relation to each support area, since the psychologists' recommendations were provided as an answer to an open-ended question aimed at a specific area. Finally, the thematic categories of workplace adjustment recommendations in relation to support areas of role clarity, predictability, emotional demands and using strengths were highlighted.

Results

First, the frequency of support areas is presented as perceived by psychologists in their provided support rated on a Likert-scale from 1 to 5. The most frequent support area

provided by psychologists was stress, then predictability, work setting/sensory influences, role clarity, variation of work, using strengths, and emotional demands, see Table 6.

Table 6

Frequency of Support Areas Perceived by Psychologists

Support Areas	Min	1 st Quartile	Mean	3 rd Quartile	Max	SD
1. Stress	1.00	4.00	4.26	5.00	5.00	0.92
2. Predictability	2.00	3.25	4.08	5.00	5.00	0.91
3. Work Setting/Sensory Influences	1.00	4.00	4.00	5.00	5.00	1.04
4. Role Clarity	1.00	3.25	3.97	5.00	5.00	1.05
5. Variation of Work	1.00	3.00	3.68	4.00	5.00	1.02
6. Using Strengths	1.00	3.00	3.60	5.00	5.00	1.24
7. Emotional Demands	1.00	3.00	3.57	4.00	5.00	1.11
8. General Communication	1.00	3.00	3.60	5.00	5.00	1.31
9. Interaction with Supervisor	1.00	3.00	3.52	4.00	5.00	1.20
10. Support from Supervisor	1.00	2.00	3.47	5.00	5.00	1.33
11. Interaction with Colleagues	1.00	2.00	3.47	5.00	5.00	1.29
12. Quality of Leadership	1.00	2.00	3.21	4.00	5.00	1.30
13. Support from Colleagues	1.00	2.25	3.15	4.00	5.00	1.15
14. Job Satisfaction	1.00	2.00	3.13	4.00	5.00	1.28
15. Social Community	1.00	2.00	3.02	4.00	5.00	1.32
16. Inclusivity/Social Responsibility	1.00	1.25	2.78	3.75	5.00	1.34
17. Other Social Situations	1.00	2.00	2.71	4.00	5.00	1.34
18. Interaction with Customers	1.00	1.00	2.55	4.00	5.00	1.39

Note. Support areas compared to the best predictors of job satisfaction, life satisfaction and stress from study 1 were indicated in bold. Support areas were organized by mean in a descending order ($N=38$).

The support areas highlighted based on the best predictors from study 1 – predictability, role clarity, using strengths and emotional demands – were among the top seven most frequent. Among all the included support areas, only stress, work setting/sensory influences and variation of work preceded the support areas highlighted based on the best predictors from study 1. The psychologists also rated the importance of the support areas when adjusting the working environment, see Table 7.

Table 7

Importance of Support Areas Perceived by Psychologists

Support Areas	Min	1 st Quartile	Mean	3 rd Quartile	Max	SD
1. Predictability	3.00	4.00	4.68	5.00	5.00	0.53
2. Stress	4.00	4.00	4.63	5.00	5.00	0.49
3. Emotional Demands	2.00	4.00	4.50	5.00	5.00	0.76
4. Role Clarity	3.00	4.00	4.52	5.00	5.00	0.73
5. Work Setting/Sensory Influences	3.00	4.00	4.44	5.00	5.00	0.65
6. Using Strengths	1.00	4.00	4.34	5.00	5.00	0.97
7. Support from Supervisor	2.00	4.00	4.32	5.00	5.00	0.88
8. Quality of Leadership	2.00	4.00	4.29	5.00	5.00	0.91
9. Variation of Work	2.00	4.00	4.26	5.00	5.00	0.83
10. Interaction with Colleagues	2.00	3.00	4.15	5.00	5.00	1.00
11. General Communication	2.00	4.00	4.15	5.00	5.00	0.93
12. Interaction with Supervisor	2.00	4.00	4.15	5.00	5.00	0.92
13. Social Community	2.00	3.00	4.02	5.00	5.00	0.83
14. Support from Colleagues	2.00	3.00	3.97	5.00	5.00	0.97
15. Job Satisfaction	1.00	4.00	3.92	4.75	5.00	0.94
16. Interaction with Customers	2.00	3.00	3.89	5.00	5.00	1.02
17. Other Social Situations	1.00	3.00	3.70	4.00	5.00	1.05
18. Inclusivity/Social Responsibility	1.00	3.00	3.62	4.00	5.00	1.16

Note. Support areas compared to the best predictors of job satisfaction, life satisfaction and stress from study 1 were indicated in bold. Support areas were organized by mean in a descending order ($N=38$).

The psychologists perceived predictability as the most important support area, which was followed by stress, emotional demands, role clarity, work setting/sensor influences, and using strengths. Regarding the best predictors from study 1 as support areas, they were among the top six most important in support. Only two areas preceded some of them, which were again stress and work setting/sensory influences. Overall, apart from stress, work setting/sensory influences and variation of work, the best predictors from study 1 – predictability, role clarity, using strengths and emotional demands – were also the most frequent and most important support areas perceived by psychologists in their support.

Next, the results from the qualitative analysis are presented. Six general categories, eleven thematic categories, and sixty-four subcategories were identified in the recommended workplace adjustments with qualitative content analysis. For an overview of the established category system, see appendix E. The general categories included work environment, work processes, work demands, social environment, individual coping tools, and theoretical tools/AF (Arbetsförmedlingen). The general category of work environment included the two

thematic categories of sensory environment fit (e.g. “If the employee has a need for a workplace that is isolated from some of the stimuli in the work surroundings, it’s good to arrange a workstation (perhaps seal of sounds, sight impressions etc.”) and workplace/task fit (e.g. “The primary adjustment is to choose a workplace that fits the individuals interests and resources”). While the sensory environment fit focused on the sensory influences in the work environment, the workplace/task fit focused on the work environment in relation to the employees’ needs, interest or resources. The general category of work processes included communication/instruction (e.g. “Providing information/feedback in written and non-verbal form”) and structured processes/schedules (e.g. “Weekly planning/feedback sessions with supervisor”). While communication/instruction was related to communication with the employee with ASD and the way he/she was given information and instructions, structured processes/schedules was related to activities that increase predictability and structure at work. Next, work demands included two thematic categories, individual assessment (e.g. “Regarding to the persons need adjusting type and amount of work tasks as well as degree of variation”) and not recommended work demands (e.g. “Avoiding unexpected changes and pressure to participate socially”). Individual assessment was related to recommendations for assessing the employee regarding a specific need or preference, while not recommended work demands focused on demands at work that in some cases might lead to potential difficulties based on individual needs and abilities. The general category of social environment included knowledge about diagnosis (e.g. “To inform the team about the basics about autism and in specific of what is important to consider in work life. With the persons’ consent”) and general support/supportive attitude (e.g. “Clearly designated supervisor that is always available for questions”). Knowledge about diagnosis refers to the awareness of the employer, colleagues or supervisor about the fact that the employee has been diagnosed with ASD as well as the description or details of the diagnosis itself. Furthermore, general

support/supportive attitude refers to the social environment of the workplace in relation to the employee with ASD. The category of individual coping tools included handling change (e.g. “To help the employee to be prepared for what to be expected during the day, the week or upcoming special events”) and social/emotional coping tools (e.g. “To have agreed on a concrete plan for the employee with ASD that allows him/her to withdraw from critical situations”). Individual coping tools refer to the potential tools of the employer that can be used to deal with difficulties at the workplace, which includes preparing the individual with ASD for change at work or solving complex social/emotional situations. Finally, some theoretical tools and specific support options from the Swedish Public Employment Services were mentioned, e.g. role model concept and financial support for the employer to provide a supervisor for people with ASD.

To answer the fourth question, what are the thematic categories of workplace adjustment recommendations regarding the support areas compared to the best predictors from study 1, the thematic categories were identified and counted in relation to the support areas. Thus, the support areas of predictability, role clarity, emotional demands, and using strengths were highlighted, and the related thematic categories of recommendations are described in a descending order starting from the most frequent. Regarding predictability, the thematic categories of workplace adjustment recommendations from psychologists included structured processes/schedules, handling change, workplace/task fit, communication/instructions, sensory environment fit, knowledge about diagnosis, social/emotional coping tools, and individual assessment. In connection with role clarity, the thematic categories included communication/instructions, structured processes/schedules, theoretical/AF tools, workplace/task fit, knowledge about diagnosis, and general support/supportive attitude. In relation to emotional demands, the thematic categories included not recommended work demands, structured processes/schedules,

communication/instructions, knowledge about diagnosis, general support/supportive attitude, workplace/task fit, handling change, social/emotional coping tools, theoretical AF/tools, and sensory environment fit. As regards to using strengths, the thematic categories included communication/instructions, individual assessment, workplace/task fit, knowledge about diagnosis, general support/supportive attitude, and theoretical/AF tools. For an overview of all included support areas and related thematic categories of workplace adjustment recommendations, see appendix F.

Discussion

The results of study 2 demonstrated that predictability, emotional demands, role clarity, and using strengths – the best predictors identified in study 1 for job satisfaction, life satisfaction and stress – were also among the most frequent and most important support areas in the support of psychologists provided to job seeking and employed adults with ASD. However, from all included support areas, stress, work setting/sensory influences, and variation of work were the three areas that preceded some of highlighted support areas regarding frequency and importance. It is important to note that the work environment factors from study 1 cannot be equated with the support areas in study 2. The factors in study 1 were based on the participants' perception of their work environment, while the support areas in study 2 were measured focusing on the psychologists' perception of their provided support. Nonetheless, they were associated and compared, which provided new insights into the relationship between how employed adults with ASD perceive their work environment and how psychologists perceive their provided support for adults with ASD. Overall, these results indicated that predictability, emotional demands, role clarity, and using strengths might be especially important factors for providing better work environment for employed adults with ASD both from the perspective of employees and support. In addition, stress, work setting/sensory influences, and variation of work must also be considered in relation to these

results and also for future research based on their top position in frequency and importance in support. These results are in line with previous literature, since variation of work and stress are closely related to the clinical description of ASD (APA, 2013). Whereas work setting/sensory influences are closely related to sensory sensitivity, which was shown to be in a negative correlation with job satisfaction (Pfeiffer et al., 2018). To the knowledge of the author, previous research has not yet focused on the frequency and importance of these areas in the provided support of psychologists. It was also interesting to note that the two most frequent and two most important factors in the psychologists' support were the same, although in alternating order, stress and predictability. This is in line with the clinical description of ASD. Considering stress, APA (2013) described proneness to anxiety and stated that the most common co-occurring disorder in ASD are anxiety disorders. Furthermore, predictability can be linked to one of the main behavioral characteristics of ASD, which is repetitive and restricted behavioral patterns, e.g. insistence on sameness (APA, 2013).

Furthermore, this was the first study to establish a category system for workplace adjustment recommendations for employers from the perspective of psychologist support for job seeking and employed adults with ASD, which complements the category system of Lorenz et al. (2016) whose category system was based on the perspective of the employees. While the authors found that the most frequent solution was external help received from the work in non-autism-specific work, while in autism-specific work, self-solutions was the most frequent in connection with communication and acceptance (Lorenz et al., 2016). To complement these results from the support perspective, study 2 demonstrated communication/instructions and workplace/task fit as the most frequent thematic category of workplace adjustment recommendations.

Regarding the support areas compared to the best predictors from study 1, predictability, emotional demands, role clarity, and using strengths were highlighted. The most frequent thematic categories of work environment adjustments for predictability were structured processes/schedules and handling change, which indicated that it may be key for employees with ASD to increase structure at work as well as to prepare individuals to handle future changes. This is in line with case studies demonstrating that schedules for work tasks increased predictability among individuals with ASD (Burt, Fuller, & Lewis, 1991). However, the occurred thematic categories also included sensory environment fit, workplace/task fit, communication/instructions, individual assessment, knowledge about diagnosis, and social/emotional coping tools. Furthermore, for emotional demands, not recommended work demands had the highest number of occurrences, which indicated the importance of the employer's flexibility as regards to expectations about emotionally demanding tasks. This can be related to a core feature in ASD: "deficits in social-emotional reciprocity" (APA, 2013, p.88) and/or inefficient emotion regulation strategies based on the suggestion of Mazefsky et al. (2013). Additional thematic categories included sensory environment fit, workplace/task fit, communication/instructions, structured processes/schedules, knowledge about diagnosis, general support/supportive attitude, handling change, social/emotional coping tools, and theoretical/AF tools. For role clarity, communication/instructions and structured processes/schedules were the most frequent underlining the significance of clear communication and providing instructions and structured processes in relation to understanding responsibilities, goals and tasks. This is line with Boström et al. (2013), who underlined that a lack of clarity can lead to role ambiguity or role conflict, which might result in decreased job satisfaction. For using strengths, the most frequent thematic categories were communication/instructions and individual assessment. This indicated that individual assessment and clear communication and ways of providing

instructions may be key for using strengths in work. Additional thematic categories included workplace/task fit, knowledge about diagnosis, not recommended work demands, general support/supportive attitude, and theoretical/AF tools. Overall, the results of study 2 demonstrated that regarding most support areas, there are several solutions that can be applied showing a variety of approaches to work environment adjustments. This indicated that workplace adjustments need to be based on individual needs considering diversity and individual differences and may need to be based on a multifaceted approach as there is not one solution in relation to one support area.

Limitations

To maintain anonymity and personal data, data was not collected regarding the psychologists' position and the selection process could not be confirmed by data collection, only by personal communication. Regarding the content analysis, interobserver reliability was not considered due to ethical considerations. Furthermore, generalizability was affected due to the low participation rate. Furthermore, since data was not collected regarding how many psychologists at the Swedish Employment Services had experience in supporting individuals with ASD, generalizability was limited. Furthermore, individuals with ASD who receive support from psychologists at the Swedish Public Employment Services could be only a fragment of the population of adults with ASD, thus representing certain needs of the adult population with ASD and limiting generalizability from the provided support. Furthermore, the support in the second study was also given to job seeking adults with ASD who were not employed in contrast to already employed adults with ASD in study 1. This difference limited the generalization of conclusions drawn from the results of both studies.

General Discussion

Study 1. The results of the first study indicated that job satisfaction was in a relationship with all included work environment factors underlining the importance of the

included factors and previous findings. Furthermore, the results indicated that those employed adults with ASD who perceive their work environments predictable, perceive their roles clear, perceive their leaders competent in prioritizing job satisfaction, providing development opportunities, solving conflicts, and work planning, perceive that they receive support from their supervisor and colleagues, perceive a good atmosphere and efficient cooperation with colleagues, perceive opportunities to use their strengths, and perceive that their colleagues and supervisor appreciates and supports those strengths, might have higher levels of job satisfaction. Overall, from these work environment factors, role clarity and using strengths may be the most important, as they together were the significant best predictors in the final multiple regression model predicting job satisfaction. These results are in line with recent findings among individuals with ASD, for example the results of Pfeiffer et al. (2018), that showed job satisfaction to be in a significant positive correlation with involvement, peer cohesion, supervisor support, autonomy, task orientation, and clarity. In addition, using strengths had the strongest relationship with job satisfaction from all the work environment factors, which is in line with the results of Lorenz et al. (2016) that also showed the highest correlation between job satisfaction and using personal strengths. Furthermore, life satisfaction's strongest correlation was using strengths, which indicated that using strengths might be a unique work environment factor that may have an impact outside the work life as well. Regarding stress, those who perceive their work environment emotionally demanding, lacking predictability, quality of leadership and social community, and perceive no opportunities, support or appreciation for using their strengths at work, might have higher levels of stress. This result indicated that these may be important factors when aiming to achieve well-being and a stress-free environment at work and outside work for adults with ASD. The most important work environment factors regarding stress may be emotional demands, predictability and using strengths as they together were the best predictors for stress

scores among the participants. This is in line with the results of Howlin (2000) that highlighted that the environment's failure to understand individual needs in ASD might also contribute to heightened stress. In addition, Hurlbutt and Chalmers (2004) also showed that a lack of understanding social routines, communication and the social environment may lead to increased stress at work. Interestingly, using strengths was shown to be a unique factor as it was significantly correlated with job satisfaction, life satisfaction, and stress and was also among the best predictors for all three. This result highlighted the importance of providing opportunities, support and appreciation for using strengths at work as it may be the only work environment factor that might impact job satisfaction as well as individual factors outside work, e.g. life satisfaction and stress. To the author's knowledge, this study was the first to show how these work environment factors predicted job satisfaction, life satisfaction and stress pointing out potentially key factors in the work life of employed adults with ASD. Further studies are needed to strengthen these results and to identify how these results can be generalized.

Study 2. The second study focused on the frequency and importance of support areas compared to the best predictors of job satisfaction, life satisfaction and stress from study 1. Results demonstrated that predictability, role clarity, emotional demands, and using strengths as support areas were among the most frequent and most important areas as perceived by the psychologists at the Swedish Public Employment Services. This result showed that the work environment factors highlighted as potentially the most important factors among employed adults with ASD in study 1, were also seen as the most frequent and important support areas by psychologists. This indicated that these four work environment factors were underlined from both the perspectives of employed adults with ASD and support for adults with ASD, thus may have a key role. Therefore, it may be especially important for employers and researchers to focus on these support areas. Interestingly, predictability and emotional

demands can be closely linked to core behavioral features in the clinical description of ASD. Based on the perceived frequency and importance of support areas, further research is needed to better understand the role of additional support areas, e.g. stress, work setting/sensory influences, and variation of work. Further research is needed to confirm these results and to focus on the quantitative assessment of support areas and the relationship between how employed adults with ASD perceive their work environment and how psychologists perceive their support. Thus, the second study also focused on psychologists' recommendations for employers. By performing a qualitative content analysis on recommendations to work environment adjustments to open questions in relation to support areas, a category system was established. Results have demonstrated that in relation to most areas, there are several types of solutions that can be applied showing a variety of approaches to work environment adjustments. Regarding predictability, the most frequent thematic categories of recommendations were structured processes/schedules and handling change. As regards to role clarity, the most frequent thematic category was communication/instructions. In connection with emotional demands, the most frequent category was not recommended work demands. Whereas for using strengths, the most frequent categories were communication/instructions, and individual assessment. However, numerous types of workplace adjustment recommendations were provided in relation to these support areas, which may serve as a guideline and/or inspiration for employers when providing better work environments for employed adults with ASD.

Internal and external validity. The original purpose of the study was achieved as all questions was reflected upon based on the results, however, limitations to internal and external validity need to be considered, which might impact generalizability of the results. In study 1, due to the requirements for participation, only individuals with high-functioning ASD might have filled out the questionnaire, thus the results might be more representative for

high-functioning employed adults with ASD. This could also be influenced by personal interest in the study. In addition, participants who are members of the Facebook groups specifically aimed at people with ASD or similar conditions might not be representative of employed adults with ASD in Sweden. In study 2, sample bias could also have occurred due to the language of the questionnaire or personal interest in the study in addition to the lack of control when sending out the questionnaire through the contact person. Furthermore, the psychologists at the Swedish Public Employment Services might come in contact with only a subset of job seeking and employed adults with ASD that might also involve focusing on specific support areas. Regarding overall conclusions, questionnaires both in study 1 and study 2, the validity of the items and scales was not tested prior to data collection. Pretesting would have been important since the question formulations might not be appropriate for the sample. Furthermore, due to general disadvantages of the internet survey in both studies, there was a lack of control regarding the participants, although the requirements were clearly stated on the first page of the questionnaire. Thus, there was a potential for response bias and selection bias in both studies. There is also a possibility that the participants in the first study might be different from the individuals whom the psychologists support in the Employment Services, which could influence overall conclusions drawn from the results of both studies. In addition, a low response rate could also have influenced validity for both studies.

Overall conclusions and future research. In conclusion, by combining the perspectives and results of both studies, predictability, emotional demands, role clarity, and using strengths were highlighted indicating that they may be key factors both in connection with how employees with ASD experience their work environment and how psychologists perceive their provided support for adults with ASD. Regarding future studies, using strengths and role clarity may be especially important in relation to job satisfaction among employed adults with ASD. Regarding stress, emotional demands, using strengths and

predictability might be key for future research. Furthermore, examining the relationship between life satisfaction and using strengths at work could also show interesting results. Regarding the second study, further research is needed to strengthen the categorization of professional support and potential work environment adjustment recommendations for employers of adults with ASD. In addition, further research should investigate the importance of stress and predictability in support and in the work life of adults with ASD and further assess possible work environment adjustments potentially not included in the present framework. Further research could also strengthen the results of the two studies, especially focusing on the using strengths scale created by the author, which included the support and appreciation of strengths and was the only significant variable in the best multiple regression models that significantly predicted job satisfaction, life satisfaction, and stress. Based on the recommendations in employment support, future research should apply an integrated approach focusing on a variety of potentially important factors in the work environment and a set of possible work environment adjustments addressing the multifaceted nature of interactions between personal needs and perceived psychosocial work environment.

Regarding methodology, longitudinal studies could also identify causal relationships beside correlation and predictive relationships. Further research is needed to examine the validity of the COPSOQ II scales in the adult population with ASD. Future research might also provide a more detailed and integrated picture of work life among employed adults with ASD by using statistical methods that can analyze variables with different domains, like Haslbeck and Waldorp (2015) using mixed graphical models with the *mgm* function in R. Further methods, for example path analysis and structural equation models can also benefit research in creating more specific models using several variables (Everitt & Hothorn, 2011). Future statistical methods might also enable researchers to apply a simultaneous analysis framework for assessing results from both quantitative and qualitative research in relation to

individuals with ASD. In addition, a bigger sample can increase generalizability, as well as including data collection of specific diagnostic features or additional medical data to address diversity within adults with ASD. Based on these results, future research could also benefit from using a reference group to identify potential differences between adults with and without ASD or between subgroups of individuals with ASD or other conditions.

In general, by performing psychological research at the encounter of clinical and organizational psychology, we can gain a deeper understanding of clinical constructs in the context of work. It could contribute to further empirical research providing a more evidence-based foundation for increasing job- and life satisfaction and for decreasing stress among individuals with ASD. From a clinical perspective, further results could contribute to more informed clinical practices augmented with a perspective of achieving successful employment as it is a key factor in adult life. From an organizational perspective, research can inform employers, as companies began to realize the potential in hiring people with autism with unique combination of strengths and skill-sets increasing their competitive advantage in the labor market. Research can also inform vocational support services and organizations about successful employment and evidence-based support.

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APPENDIX A

Study 1. Questionnaire

Autism på arbetsplatsen

Välkommen till frågeformuläret "Autism på arbetsplatsen"!

Du är inbjuden att delta i en studie om autism på arbetsplatsen. Detta forskningsprojekt bedrivs av Benjamin Kállai - MSc Psykologstudent vid Lunds Universitet - som en del av masterprojektet med Birgitta Wanek - Biträdande universitetslektor vid Institutionen för psykologi - som handledare. Syftet med detta forskningsprojekt är att förstå bättre viktiga sociala och organisatoriska faktorer när det gäller autism på arbetsplatsen för att lyfta fram styrkan hos individer med autism och dessutom skapa mer inkluderande arbetsmiljöer.

Frågeformuläret tar cirka 5-10 minuter att fylla i.

Krav på deltagande:

För att fylla i detta frågeformulär är det ett krav att du för närvarande är anställd och har diagnostiserats med autism. Detta inkluderar följande diagnostikkategorier: autismspektrumstörning, autistisk syndrom, Aspergers syndrom eller genomgripande utvecklingsstörning som inte annars anges.

Om frågeformuläret:

Denna enkät är anonym och informationen från dig kommer att hanteras konfidentiellt. Ditt deltagande i denna studie är frivilligt. Du har rätt att avbryta ditt deltagande även om du tidigare har samtyckt till det. Inga frågor kommer att ställas till varför du har avbrutit ditt deltagande om du väljer att göra det. Genom att klicka på nästa knapp nedan bekräftar du att du har läst och förstått villkoren i studien och godkänner att delta.

Om du har några frågor eller vill veta mer om den här studien, kan du kontakta mig på benjamin.kallai.854@student.lu.se

*Obligatorisk

Demografiska frågor

1. Hur gammal är du? *

2. Vad är ditt kön? *

Kvinna

Man

3. Vilket land bor du för närvarande i? *

Sverige

Övrigt:

4. Vad är den högsta utbildningsnivå du har genomfört? *

Gymnasie eller liknande

Kandidatexamen

Magisterexamen

Doktorsexamen

Övrigt:

5. Vad är dina arbetstider? *

Heltid

Deltid

6. Fick du något stöd från Arbetsförmedlingens Avdelningen Rehabilitering till arbete för att få ditt nuvarande jobb? *

Ja

Nej

Arbetsmiljö och jobbkrav

7. Hamnar du genom ditt arbete i känslomässigt påfrestande situationer?

1 2 3 4 5

Aldrig/nästan aldrig Alltid

8. Måste du förhålla dig till andra människors personliga problem i ditt arbete?

1 2 3 4 5

Aldrig/nästan aldrig Alltid

9. Är ditt arbete känslomässigt krävande?

1 2 3 4 5

I mycket liten grad I mycket hög grad

10. Blir du känslomässigt berörd av ditt arbete?

1 2 3 4 5

I mycket liten grad I mycket hög grad

11. Känner du att du kan använda dina styrkor i ditt arbete?

1 2 3 4 5

I mycket liten grad I mycket hög grad

12. Känner du att dina kollegor uppskattar dina styrkor?

1 2 3 4 5

I mycket liten grad I mycket hög grad

13. Känner du att din direkta handledare uppskattar dina styrkor?

1 2 3 4 5

I mycket liten grad I mycket hög grad

14. Känner du att du får stöd för att använda dina styrkor i ditt arbete?

1 2 3 4 5

I mycket liten grad I mycket hög grad

Arbetsmiljö och ledarskap

15. Är ditt arbete varierat?

1 2 3 4 5

Aldrig/nästan aldrig Alltid

16. Får du information i god tid på din arbetsplats t.ex. när det gäller viktiga beslut, förändringar och framtidsplaner?

1 2 3 4 5

I mycket liten grad I mycket hög grad

17. Får du veta allt du behöver för att klara ditt arbete på ett bra sätt?

1 2 3 4 5
I mycket liten grad I mycket hög grad

18. Finns det klara mål för ditt arbete?

1 2 3 4 5
I mycket liten grad I mycket hög grad

19. Vet du exakt vilka som är dina ansvarsområden?

1 2 3 4 5
I mycket liten grad I mycket hög grad

20. Vet du precis vad som förväntas av dig i ditt arbete?

1 2 3 4 5
I mycket liten grad I mycket hög grad

21. I vilken utsträckning anser du att din närmaste chef ser till att samtliga medarbetare har bra utvecklingsmöjligheter?

1 2 3 4 5
I mycket liten grad I mycket hög grad

22. I vilken utsträckning anser du att din närmaste chef prioriterar trivseln på arbetsplatsen högt?

1 2 3 4 5
I mycket liten grad I mycket hög grad

23. I vilken utsträckning anser du att din närmaste chef är bra på att planera arbetet?

1 2 3 4 5
I mycket liten grad I mycket hög grad

24. I vilken utsträckning anser du att din närmaste chef är bra på att hantera konflikter?

1 2 3 4 5
I mycket liten grad I mycket hög grad

Arbetsmiljö och stöd

25. Om du behöver, får du hjälp och stöd från dina kollegor?

1 2 3 4 5
Aldrig/nästan aldrig Alltid

26. Om du behöver, är dina kollegor beredda att lyssna till dina problem med arbetet?

1 2 3 4 5
Aldrig/nästan aldrig Alltid

27. Hur ofta talar dina kollegor med dig om hur du utför ditt arbete?

1 2 3 4 5
Aldrig/nästan aldrig Alltid

28. Om du behöver, är din närmaste chef beredd att lyssna på problem som rör ditt arbete?

1 2 3 4 5
Aldrig/nästan aldrig Alltid

29. Om du behöver, får du stöd och hjälp med ditt arbete från din närmaste chef?

1 2 3 4 5
Aldrig/nästan aldrig Alltid

30. Hur ofta talar din närmaste chef med dig om hur du utför ditt arbete?

1 2 3 4 5
Aldrig/nästan aldrig Alltid

31. Är stämningen bra mellan dig och dina arbetskamrater?

1 2 3 4 5
Aldrig/nästan aldrig Alltid

32. Är samarbetet bra mellan arbetskamraterna på din arbetsplats?

1 2 3 4 5
Aldrig/nästan aldrig Alltid

33. Känner du dig delaktig i en gemenskap på din arbetsplats?

1 2 3 4 5
Aldrig/nästan aldrig Alltid

Arbetsmiljö och tillfredsställelse

34. Angående ditt arbete i allmänhet. Hur tillfredsställd är du med dina framtidsutsikter i jobbet?

Mycket tillfredsställd
Tillfredsställd
Varken eller
Otillfredsställd
Mycket otillfredsställd

35. Angående ditt arbete i allmänhet. Hur tillfredsställd är du med fysiska arbetsförhållanden?

Mycket tillfredsställd
Tillfredsställd
Varken eller
Otillfredsställd
Mycket otillfredsställd

36. Angående ditt arbete i allmänhet. Hur tillfredsställd är du med det sätt dina kunskaper används på?

Mycket tillfredsställd
Tillfredsställd
Varken eller
Otillfredsställd
Mycket otillfredsställd

37. Angående ditt arbete i allmänhet. Hur tillfredsställd är du med ditt arbete som helhet, allt inräknat?

Mycket tillfredsställd
Tillfredsställd
Varken eller
Otillfredsställd
Mycket otillfredsställd

38. Behandlas män och kvinnor som jämställda på din arbetsplats?

1 2 3 4 5
I mycket liten grad I mycket hög grad

39. Finns det utrymme för anställda av olika etnisk bakgrund och med olika religion?

1 2 3 4 5
I mycket liten grad I mycket hög grad

Arbetsmiljö och stress

40. Hur ofta har du haft svårt att koppla av?

1 2 3 4 5
Inte alls Hela tiden

41. Hur ofta har du varit lättretlig?

1 2 3 4 5
Inte alls Hela tiden

42. Hur ofta har du varit anspänd?

1 2 3 4 5
Inte alls Hela tiden

43. Hur ofta har du varit stressad?

1 2 3 4 5
Inte alls Hela tiden

44. I allmänhet, hur nöjd är du med ditt liv?

1 2 3 4
Mycket otillfredsställd Mycket tillfredsställd

APPENDIX B

Correlations of All Included Variables Among Employed Adults with ASD in Study 1

	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Job Satisfaction	-												
2. Life Satisfaction	0.49***	-											
3. Stress	-0.59***	-0.60***	-										
4. Emotional Demands	-0.24*	-0.17	0.43***	-									
5. Variation of Work	0.31**	0.24*	-0.14	0.21*	-								
6. Predictability	0.47***	0.30*	-0.45***	-0.07	0.40***	-							
7. Role Clarity	0.59***	0.30*	-0.29*	0.04	0.41***	0.59***	-						
8. Quality of Leadership	0.55***	0.39***	-0.45***	-0.15	0.40***	0.71***	0.58***	-					
9. Support from Supervisor	0.47***	0.32**	-0.30*	-0.12	0.41***	0.64***	0.47***	0.75***	-				
10. Support from Colleagues	0.48***	0.30*	-0.35**	-0.12	0.26*	0.46***	0.47***	0.44***	0.56***	-			
11. Social Community	0.61***	0.28*	-0.45***	-0.28*	0.32**	0.46***	0.46***	0.54***	0.56***	0.80***	-		
12. Inclusivity/Social Resp.	0.30*	0.13	-0.09	0.02	0.39***	0.53***	0.31**	0.55***	0.63***	0.29*	0.33**	-	
13. Using Strengths	0.64***	0.45***	-0.44***	-0.06	0.39***	0.56***	0.62***	0.62***	0.59***	0.57***	0.57***	0.40***	-

Note. Significance level: * = $P \leq 0.05$, ** = $P \leq 0.01$, *** = $P \leq 0.001$. Coefficients $> .40$ are indicated in bold.

APPENDIX C

Study 2. Questionnaire

Supporting Autism at the Workplace

Welcome to the "Supporting Autism at the Workplace" master thesis questionnaire!

You are invited to participate in a research study about autism at the workplace. This research project is being conducted by Benjamin Kállai - MSc Psychology student at Lund University - as part of the master thesis project with Birgitta Wanek - Associate Senior Lecturer at the Department of Psychology - as supervisor. The aim of this research project is to better understand important social and organizational factors regarding autism at the workplace both to highlight the strengths of individuals with autism and also to create more inclusive work environments.

The questionnaire will take about 10-15 minutes to fill out.

Requirements for participation:

To fill out this questionnaire, it is a requirement that you have experience with supporting people with autism and/or their employer as part of your position at Arbetsförmedlingen.

About the questionnaire:

This survey is anonymous and the information provided by you will be handled confidentially. Your participation in this study is voluntary. You have the right to interrupt your participation even if you have consented to it previously, and no questions will be asked as to why you have interrupted your participation if you choose to do so. By clicking the next button below, you confirm that you have read and understood the terms of the study and agree to participate.

If you have any questions or would like to know more about this study, you may contact me at benjamin.kallai.854@student.lu.se

*Obligatory

Demographic Questions

1. What is your age? *

2. What is your gender? *

Female

Male

3. What is the highest level of education you have completed? *

High school or equivalent

BA/BSc

MA/MSc

PhD/Doctorate

Other:

Supporting people with Autism

The following questions concern your experience supporting people with autism regarding work.

4. Have you supported individuals diagnosed with autism?

Yes

No

5. If yes, how many? (approximately)

1-10

10-25

25-50

50-100

100+

6. Have you supported individuals not diagnosed but suspected to have autism?

Yes

No

7. If yes, how many? (approximately)

1-10

10-25

25-50

50-100

100+

Supporting People with Autism

The following questions concern your experience supporting people with autism and/or their employers regarding the working environment.

8. How often have you provided support regarding emotional demands at the workplace? I.e. emotionally demanding work situations, emotional involvement at work, emotionally disturbing situations at work, relating to other people's personal problems as part of work. It includes the reactions of the individual as much as the demands at work.

1 2 3 4 5

Never/Hardly ever Always

9. Based on your experience, is it important to adjust the work environment in this aspect?

1 2 3 4 5

No, not at all Yes, absolutely

10. If applicable, what adjustments to the workplace have you recommended for employers?

11. How often have you provided support regarding the variation of work? I.e. repetitiveness/variation of work tasks.

1 2 3 4 5

Never/Hardly ever Always

12. Based on your experience, is it important to adjust the work environment in this aspect?

1 2 3 4 5

No, not at all Yes, absolutely

13. If applicable, what adjustments to the workplace have you recommended for employers?

14. How often have you provided support regarding predictability at the workplace?
I.e. information provided for the employee about work tasks, important decisions, future plans and changes.

1 2 3 4 5
Never/Hardly ever Always

15. Based on your experience, is it important to adjust the work environment in this aspect?

1 2 3 4 5
No, not at all Yes, absolutely

16. If applicable, what adjustments to the workplace have you recommended for employers?

Supporting People with Autism (2)

The following questions concern your experience supporting people with autism regarding work.

17. How often have you provided support regarding role clarity at the workplace? I.e. clear objectives of work, responsibilities and expectations.

1 2 3 4 5
Never/Hardly ever Always

18. Based on your experience, is it important to adjust the work environment in this aspect?

1 2 3 4 5
No, not at all Yes, absolutely

19. If applicable, what adjustments to the workplace have you recommended for employers?

20. How often have you provided support regarding quality of leadership at the workplace?
I.e. leadership behavior concerning appreciation of staff, providing development opportunities, giving priority to further training and job satisfaction, work planning, allocating the work, solving conflicts, and communicating with the staff.

1 2 3 4 5
Never/Hardly ever Always

21. Based on your experience, is it important to adjust the work environment in this aspect?

1 2 3 4 5
No, not at all Yes, absolutely

22. If applicable, what adjustments to the workplace have you recommended for employers?

23. How often have you provided support regarding social support from colleagues at the workplace?

I.e. support from the colleagues to people with autism.

1 2 3 4 5
Never/Hardly ever Always

24. Based on your experience, is it important to adjust the work environment in this aspect?

1 2 3 4 5
No, not at all Yes, absolutely

25. If applicable, what adjustments to the workplace have you recommended for employers?

26. How often have you provided support regarding social support from supervisors at the workplace?

I.e. support from the supervisor to people with autism.

1 2 3 4 5

- Never/Hardly ever Always
27. Based on your experience, is it important to adjust the work environment in this aspect?
 1 2 3 4 5
 No, not at all Yes, absolutely
28. If applicable, what adjustments to the workplace have you recommended for employers?
29. How often have you provided support regarding social community at the workplace? I.e. social community refers to the atmosphere, co-operation and sense of community between colleagues at work.
 1 2 3 4 5
 Never/Hardly ever Always
30. Based on your experience, is it important to adjust the work environment in this aspect?
 1 2 3 4 5
 No, not at all Yes, absolutely
31. If applicable, what adjustments to the workplace have you recommended for employers?
32. How often have you provided support regarding the job satisfaction of people with autism?
 I.e. satisfaction with working conditions, the way abilities are used, work prospects, the way the department is run, interest and skills involved in work, or the job as a whole.
 1 2 3 4 5
 Never/Hardly ever Always
33. Based on your experience, is it important to adjust the work environment in this aspect?
 1 2 3 4 5
 No, not at all Yes, absolutely
34. If applicable, what adjustments to the workplace have you recommended for employers?
35. How often have you provided support regarding inclusiveness/social responsibility at the workplace?
 I.e. inclusiveness of the workplace regarding disabilities, gender, ethnicity and age.
 1 2 3 4 5
 Never/Hardly ever Always
36. Based on your experience, is it important to adjust the work environment in this aspect?
 1 2 3 4 5
 No, not at all Yes, absolutely
37. If applicable, what adjustments to the workplace have you recommended for employers?
38. How often have you provided support regarding stress at the workplace?
 1 2 3 4 5
 Never/Hardly ever Always
39. Based on your experience, is it important to adjust the work environment in this aspect?
 1 2 3 4 5
 No, not at all Yes, absolutely
40. If applicable, what adjustments to the workplace have you recommended for employers?
41. How often have you provided support regarding interaction with colleagues at the workplace?
 I.e. working in a team.
 1 2 3 4 5

- Never/Hardly ever Always
42. Based on your experience, is it important to adjust the work environment in this aspect?
 1 2 3 4 5
 No, not at all Yes, absolutely
43. If applicable, what adjustments to the workplace have you recommended for employers?
44. How often have you provided support regarding general communication at the workplace? I.e. communication with colleagues or supervisor.
 1 2 3 4 5
 Never/Hardly ever Always
45. Based on your experience, is it important to adjust the work environment in this aspect?
 1 2 3 4 5
 No, not at all Yes, absolutely
46. If applicable, what adjustments to the workplace have you recommended for employers?
47. How often have you provided support regarding interaction with customers?
 1 2 3 4 5
 Never/Hardly ever Always
48. Based on your experience, is it important to adjust the work environment in this aspect?
 1 2 3 4 5
 No, not at all Yes, absolutely
49. If applicable, what adjustments to the workplace have you recommended for employers?
50. How often have you provided support regarding interaction with supervisors at the workplace?
 1 2 3 4 5
 Never/Hardly ever Always
51. Based on your experience, is it important to adjust the work environment in this aspect?
 1 2 3 4 5
 No, not at all Yes, absolutely
52. If applicable, what adjustments to the workplace have you recommended for employers?
53. How often have you provided support regarding other social situations at the workplace? I.e. parties, birthdays, etc.
 1 2 3 4 5
 Never/Hardly ever Always
54. Based on your experience, is it important to adjust the work environment in this aspect?
 1 2 3 4 5
 No, not at all Yes, absolutely
55. If applicable, what adjustments to the workplace have you recommended for employers?
56. How often have you provided support regarding work setting and sensory influences? I.e. placement into an open office.
 1 2 3 4 5
 Never/Hardly ever Always
57. Based on your experience, is it important to adjust the work environment in this aspect?
 1 2 3 4 5
 No, not at all Yes, absolutely

58. If applicable, what adjustments to the workplace have you recommended for employers?

59. How often have you provided support regarding using the strengths of people with autism at the workplace?

I.e. concentration during long-lasting routine work, identification of logical rules and patterns, processing visual information, the ability to remember facts.

1 2 3 4 5
Never/Hardly ever Always

60. Based on your experience, is it important to adjust the work environment in this aspect?

1 2 3 4 5
No, not at all Yes, absolutely

61. If applicable, what adjustments to the workplace have you recommended for employers?

APPENDIX D

Qualitative Content Analysis Schedule of Psychologists' Recommendations in Study 2

Meaning unit	Condensed meaning unit	Code	Sub-category	Thematic category	General category
Having a mentor at work through whom all important information, instructions etc, can be run including correcting any errors made - social as well as task related.	Mentor at work for communication and support.	Mentor	Mentor/Communication through Mentor	Communication/Instruction	Work Processes
It can be very helpful, often a must, that the other employees are aware of the difficulties and what they can expect - for instance that withdrawal should not be interpreted as an act against anyone.	Employees awareness about difficulties and expectations.	Awareness about diagnosis	General/All Employees	Knowledge About Diagnosis	Social Environment
As for relating to other peoples personal problems as a part of the work tasks i can not in any way recommend that.	Avoid relating to other people's personal problems.	Avoid emotional demand	Emotional Demand	Not Recommended Work Demands	Work Demands

Note. The meaning units were condensed into smaller meaning units, which were then coded with the established coding list. These codes were then organized into sub-categories and then thematic and general categories.

APPENDIX E*Category System from the Qualitative Content Analysis of Psychologists' Recommendations*

General Categories	Thematic Categories	Sub-categories	N
Work Environment	Sensory Environment Fit	Avoid Distracting Audio Stimuli	6
		Avoid Distracting Visual Stimuli	1
		General Sensory Fit	3
		Private Workspace	3
		Workplace/Task Fit	12
	Workplace/Task Fit	Workplace-Interests Fit	12
		Workplace-Resources Fit	10
		General Workplace-Person Fit	5
		Task-Education Fit	1
		Workplace-Personal Needs fit: predictability/number of co-workers/specific task focus/deadline flexibility	7
Work Processes	Communication/Instruction	Mentor/Communication through Mentor	5
		Clear	17
		Communication/Instructions/Expectations	1
		Instructions for New Processes	9
		Verbal/Text/Multimodal Instructions	1
		Always Available Instructions	2
		Only One Supervisor	7
		Employee Training	4
		Follow-ups	1
		Efficient Onboarding Process	4
	Recognize/Appreciate Strengths	2	
	Structured Processes/Schedules	Explicit Social Routines	10
		Structure/Routines (general)	4
		Clear Priorities	6
		Schedule for Tasks	3
Clear/Detailed Instructions		3	
Work Demands	Individual Assessment	Role Clarity	3
		Clear Organizational Structure	3
		Task Fit	2
		Variation	3
		Predictability	1
	Not Recommended Work Demands	Number of Tasks	1
		Individual Needs (general)	2
		Work Time	1
		Job Satisfaction	1
		Strengths	3
Not Recommended Work Demands	Emotional Demand	2	
	Multitasking	5	
	Flexibility	4	
	Socializing	4	
	Variation/Complexity	4	
	Customer Interaction	1	

APPENDIX E (continued)

General Categories	Thematic Categories	Sub-categories	N	
Social Environment	Knowledge About Diagnosis	Leader	2	
		Colleagues	8	
Individual Coping Tools	General Support/Supportive Attitude	General/All Employees	11	
		Enough Time	2	
		Socializing	2	
		Tasks/Processes	1	
		Stress	1	
		Inclusion/Colleagues' Open Mind	4	
		Supervision	3	
		Intervention (if needed)	2	
		Employer's Openness for Feedback and Adjustments	6	
		Handling Change	Prepare for Change with Specific Time Frame (day/week/special events)	4
			Prepare by Informing	4
			Emotional	2
			General	5
		Social/Emotional Coping Tools		Provide Explanation for Situations
Provide Coping Tools (general)	1			
Supportive Dialogue	4			
Emotional Support from Mentor	2			
Mediation	1			
Theoretical Tools/AF Support				Role-Model Concept
		Three-Party Conversation	5	
		AF's Psychosocial Adjustment Support	11	
		AF's Financial Support for Employer to Provide Supervisor	3	

Note. The sub-categories were sorted into thematic categories, which were organized into general categories. N indicates how many times a specific sub-category occurred overall.

APPENDIX F

Support Areas and Frequency of Thematic Categories of Psychologists' Recommendations for Employers

Support Areas	Thematic Categories of Psychologists' Recommendations										
	Sensory Environment Fit	Workplace/Task Fit	Communication/Instructions	Structured Processes/Schedules	Individual Assessment	Not Recommended Work Demands	Knowledge About Diagnosis	General Support/Support Attitude	Handling Change	Social/Emotional Coping Tools	Theoretical/AF Tools
Predictability	2	5	3	9	1	-	2	-	9	2	-
Stress	3	4	4	4	1	2	-	-	1	-	3
Emotional Demands	1	3	4	5	-	6	4	4	2	2	2
Role Clarity	-	3	10	9	-	1	2	2	-	-	5
Work Setting/Sensory Infl.	7	-	-	-	-	-	-	-	-	-	-
Using Strengths	-	3	4	-	4	-	1	1	-	-	1
Support from Supervisor	-	-	3	-	-	-	-	-	-	2	3
Quality of Leadership	-	4	7	3	-	-	2	7	-	-	3
Variation of Work	-	3	2	1	6	7	1	-	2	-	-
Interaction with Colleagues	-	-	4	-	-	2	3	1	1	2	-
General Communication	-	-	3	-	1	-	-	-	-	-	-
Interaction with Supervisor	-	-	-	-	-	-	-	-	-	-	2
Social Community	-	3	3	-	-	1	1	2	-	-	-
Support from Colleagues	-	2	1	-	-	-	5	2	-	1	-
Job Satisfaction	-	5	-	-	1	-	-	-	-	-	2
Interaction with Customers	-	-	3	-	-	1	-	-	-	-	1
Other Social Situations	-	-	-	-	-	-	-	-	-	-	-
Inclusivity/Social R.	-	-	-	-	-	-	-	2	-	-	2
SUM	13	35	51	31	14	20	21	21	15	9	22

Note. The included support areas can be seen on the left side of the table ordered based on their mean of importance in support perceived by psychologists. Regarding each area, an open-ended question was asked to the psychologists to provide their recommended workplace adjustments. For each question, these recommendations were assessed by qualitative content analysis and thematic categories were identified, see thematic categories of psychologists' recommendations on the top of the table. The number of occurred thematic categories of the workplace adjustment recommendations is presented in relation to each area.