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Links Between Mental Health and Employment Outcomes among Adults with Autism Spectrum Disorder

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by
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ABSTRACT

EMMA PAYNE ATKINSON: Adult Autism Spectrum Disorder Study

(Under the direction of Dr. Hannah Allen)

Problem

Mental health outcomes related to Autism Spectrum Disorder (ASD) have been extensively researched, although most research in the area is on children with ASD. Studies on adults with ASD are scarcer. More specifically, studies that analyze the association between mental health and work-life balance (WLB) as well as mental health and job satisfaction (JS) among employed adults with ASD is limited. The purpose of this study was to analyze the association between mental health and WLB among adults with ASD, the association between mental health and perceived JS among adults with ASD, and whether or not ASD severity moderates these associations.

Methods

A Qualtrics survey was distributed via online platforms and communication with organizations with a focus on ASD. A 3-item measure for work-life balance (Haar et al., 2014) and a 5-item measure for job satisfaction (Judge et al., 2005) were used. Anxiety and depression were assessed using sum scores of the General Anxiety Disorder-7 and the Patient Health Questionnaire-9, respectively. Additionally, the Autism Spectrum Quotient (AQ) was used to assess the severity of ASD in participants (Baron-Cohen et al., 2001). Data cleaning and analysis were performed using SPSS Statistics.

Results

Linear regression models were used to analyze the associations between the predictor variables (i.e., anxiety and depression) and the outcome variables (i.e., work/life balance and job

satisfaction). All analyses controlled for age, sex, race, education, income, and number of hours worked weekly. There was a significant, negative association between depression and job satisfaction. No other significant associations were found.

Linear regression models were run again after stratifying the sample by ASD severity. About 13% met the threshold for clinically significant ASD traits based on AQ score. A significant, negative association was found between depression and WLB among adults with clinically significant ASD traits. No other significant associations were found in the stratified sample.

Implications/Conclusions

The results of this study suggest a negative link between depression and employment outcomes among adults living with Autism Spectrum Disorder. While depression was associated with decreased job satisfaction among adults with ASD, depression was associated with decreased work/life balance among adults with clinically significant ASD. Efforts to support mental health, employment opportunities, and job success among adults with ASD remain an important area of focus.

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LIST OF ABBREVIATIONS

ASD……Autism Spectrum Disorder

AQ……..…….Autism Quotient

CDC……..Centers for Disease Control and Prevention

DSM-5……....Diagnostic and Statistical Manual of Mental Disorders

JS……...Job satisfaction

PHQ-9……..Patient Health Questionnaire

WLB……..Work-life balance

INTRODUCTION

Autism Spectrum Disorder

The Centers for Disease Control and Prevention (CDC) defines ASD as a developmental disability that impacts an individual's social, communication, and behavioral skills (CDC, 2022). Diagnostic criteria for ASD include deficits in three areas of social communication and interaction: social-emotional reciprocity, non-verbal communicative behaviors, and the development/maintenance of relationships as outlined by the American Psychiatric Association's Diagnostic and Statistical Manual (DSM-5). Based on these criteria, there are three levels of severity. Level 1 severity is associated with individuals requiring some level of support, level 2 is associated with the individual requiring considerable support, and level 3 entails the individual receiving incredibly considerable support. These levels are diagnosed based on communication deficit(s) and/or restrictive and repetitive behaviors. For example, repetitive motor movements such as lining up toys, persistence regarding homogeneity in routines and patterns, heavily fixated interests, and sensory issues are behaviors associated with ASD. Severity is also diagnosed based on the prevalence of symptoms. Symptoms of ASD must be present in the early developmental stages and impair various aspects of functioning (American Psychiatric Association, 2013).

Work-Life Balance and Job Satisfaction

Employment outcomes of individuals with Autism Spectrum Disorder (ASD) are fueled by social challenges and scarcely researched. An international study (Bury et al., 2021) was conducted to better understand the types of social challenges that prevent an equitable workplace environment for individuals with ASD. The results of the study indicated that the nature of social challenges resided in internal conflicts and external conflicts. Internal conflicts, for example,

could be the individual's perception of themselves in the work environment; external factors such as social events or time and work-life balance were also identified (Bury et al., 2021). Many studies have been conducted analyzing the experiences of adults with Autism in a higher-education setting (Accardo et al., 2019; Anderson et al., 2019; Bolourian et al., 2018; Brown et al., 2016; Scott et al., 2017; McLeod et al., 2021; White et al., 2017) and experiences of parents of college students with ASD (Dymond et al., 2017). Studies on the costs and benefits of employing adults with ASD have also been conducted (Jacob et al., 2015), but there is a gap in the literature on the experiences of adults with ASD in the workplace. Studies on the predictors of employment status among adults with ASD have been conducted (Ohl et al., 2016), but there is a lack of understanding of the differences in employment outcomes based on ASD severity. Although an increasingly prevalent topic in today's society, work-life balance (WLB) is still an emerging research topic. This may be partly attributed to the lack of consensus on the definition of WLB (Greenhaus et al., 2011). For this study, we will define WLB as a holistic concept that is unique to each individual taking into consideration their life values, priorities, and goals (Kossek et al., 2014). As the world evolves into a more inclusive environment taking into consideration the employee's needs beyond the workplace, a stable WLB is an important topic for both employees and employers (Thornthwaite, 2004). Studies show that there is a positive correlation between WLB and employee performance (Harrington and Ladge, 2009; Parkes and Langford, 2008), and psychological health and a well-rounded life promote success in the workplace (Kim, 2014). A study on job stress, customer service employee performance, and customer purchase intention indicated that conflict between work and family harms an individual's various roles (Netemeyer et al., 2005).

For those with families, an appropriate WLB is important to both successes in the workplace and at home. Finding a balance between family, hobbies, and other commitments seems far-fetched in such a fast-paced, capitalistic society. Neurotypical individuals, however, are at an advantage for a successful work-life compared to neurodivergent individuals. Research analyzing the employment outcomes of adults with ASD indicates that autistic adults face lower employment rates, lower salaries, and limited occupation choices in comparison to the rest of society, including individuals with other disabilities (Beenstock et al., 2020; Roux et al., 2013; Wilczynski et al., 2013). Both internal and external motives were noted by participants in this study; the greatest external factor being money. In today's world, it is incredibly difficult to keep up with the demands of being self-sufficient which can be daunting to someone with ASD. However, the expressed motivation for financial independence was prevalent among most individuals in the study.

The undesirable mental health outcomes caused by the consequences of unemployment (Paul & Moser, 2009) suggest that there is a general aspiration among the ASD community to have a job with a steady, reliable, and consistent routine. In a study conducted by Goldfarb et al., (2021) dissatisfaction with work was expressed across participants, with many stating that their jobs lacked meaning. Employees with ASD seek purpose and fulfillment in their careers, stating they would rather work a job they considered interesting (Goldfarb et al., 2021). Although neurotypical individuals face day-to-day challenges, these challenges are heightened for neurodivergent individuals. The need for further research on the experiences of employed adults with ASD is substantial and calls for attention. Because WLB and JS can affect one's mental state, analyzing the mental health outcomes of employed adults with ASD should be taken into consideration as well.

Mental Health Outcomes and ASD Severity

Mental health among adults has been extensively researched, and the mental health of adults with ASD deserves increased research attention. Supplementary mental health diagnoses are common in nearly 80% of young adults diagnosed with ASD, including depression, anxiety, and bipolar disorder (Eaves and Ho, 2008). Autism acceptance is a concept that has a significant impact on the mental health outcomes of adults with ASD. One definition of autism acceptance is an individual's experience of being accepted in a positive light (Cage et al., 2017). Studies show that adults with autism are negatively perceived. Adults with ASD stated that the general public's knowledge gap of ASD was a contributing factor to their mental health issues, including social isolation (Griffith et al., 2012). Social support is crucial to any individual's well-being and this does not differ from that of autistic adults. A study conducted by Lang and Lee (2005) reported that work environments are less stressful when there is a support system that firmly upholds who an individual strives to be (Cage et al., 2017). For individuals with ASD, stress can be heightened by the severity of their diagnosis. A study conducted by Ho et al. (2019) was the first of its kind to assess distress, quality of life, disability, functioning, and mental health symptoms in young adults with autism, further emphasizing the need for further research in this area. The results of the study indicated that adults with autism expressed notable levels of distress, hindered quality of life, and disability; reports of those with established primary mental health disorders were similar if not more severe. Results also implied that stress was the strongest indicator of disability, cognition, and participation (Ho et al., 2019). Similarly, another study conducted in 2015 revealed that heightened stress levels were contributors to social disability and impeded social functioning in adults with ASD (Bishop-Fitzpatrick et al., 2015).

Current Study

Most research related to ASD involves the experiences of parents with a child diagnosed with ASD, other family members with an autistic relative, working parents with autistic children, and mental health in college students with autism. Adults with ASD are an important part of the workforce, calling for research on the experiences of employed, adults with ASD. The obstacles presented by a developmental disability can impact a person's day-to-day life and ultimately, their mental health. The purpose of this study is to address this gap and analyze the association between mental health and WLB among adults with ASD, the association between mental health and perceived JS among adults with ASD, and whether or not ASD severity moderates the associations between WLB and perceived JS. Consequently, we designed this study to answer the following questions:

1. Is there an association between mental health and WLB among adults with ASD?

   H1. Mental health and WLB exhibit a positive relationship among adults with ASD.

2. Is there an association between mental health and JS among adults with ASD?

   H2. Mental health and job satisfaction have a positive relationship among adults with ASD.

3. Is ASD severity a moderator of the associations between mental health, WLB, and JS?

   H3a. The associations between mental health and WLB are stronger among adults with clinically significant ASD.

   H3b. The associations between mental health and JB are stronger among adults with clinically significant ASD.

METHODS

Procedure

After receiving IRB approval, an online survey was distributed on social media and via email. I contacted various organizations via email explaining the purposes of my study with IRB approval documentation, a recruitment flyer, and a copy of the survey questions, asking if they would be willing to distribute my survey. Most organizations I contacted were centered around support for adults with ASD. The following organizations agreed to distribute my survey: Organization for Autism Research; Beverly at Spectrum Works; Ed Hunter at Career and Executive Coaching, Life in Progress; LifeWorks@WKU; Autism Resources of the Mid-South (Memphis Area); and The Learning Academy Employment Services at USF. A second round of recruitment was completed by posting a study advertisement on Craiglist.

Data was collected in Qualtrics from 8/9/22 to 9/29/22. Participants completed an informed consent form regarding the goals of the study, the time required to complete the survey, and risks (e.g., discomfort answering personal questions about mental health) and benefits associated with study participation. If desired, participants were given the option to participate in an incentive survey upon completion of the primary survey to enter themselves into a drawing to receive an Amazon gift card.

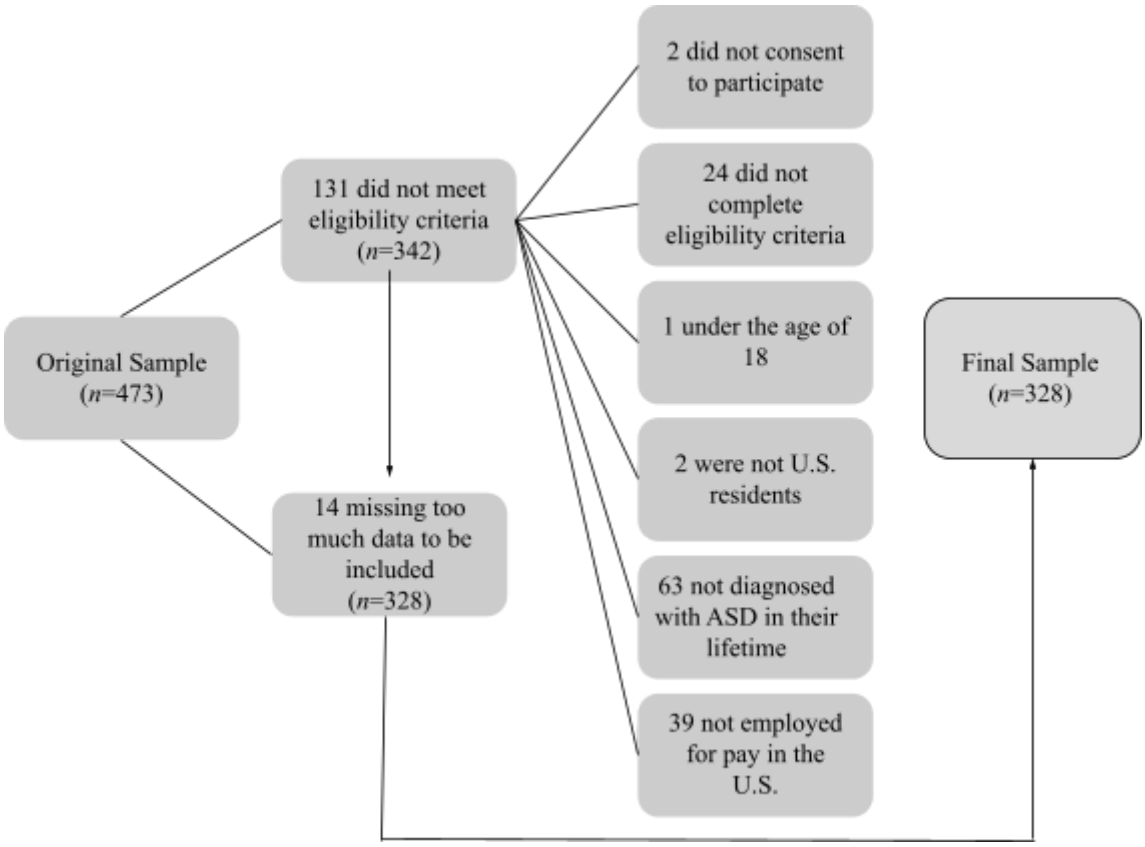
Participants

A total of n=473 participants initially completed the survey. Inclusion in the final sample was contingent on the following eligibility criteria:

1. Consented to participate in the study
2. 18+ years of age
3. Current U.S. resident

4. Diagnosed with ASD by a health professional in their lifetime
5. Currently employed for pay in the U.S.

FIGURE 1. Participant flow diagram



Measures

Demographic information. Participants indicated their age, birth sex, race/ethnicity, highest level of completed education, income, and average number of hours worked per week.

Mental health. The General Anxiety Disorder Questionnaire (GAD-7) was used to assess anxiety over the last two weeks (Williams, 2014). Participants were asked to rank their responses

to seven items on a scale of 0-3 of how often they experienced certain symptoms (0=not at all; 3=nearly every day). A sum score from 0-21 was computed to represent anxiety symptoms. The Patient Health Questionnaire [PHQ-9; (Kroenke, et al., 2002)], a 9-item measure, was used to assess depression over the last two weeks. Participants were asked to rank items on a scale of 0-3 (0=not at all; 3=nearly every day). A sum score from 0-27 was computed to represent depression symptoms.

Employment outcomes. For job satisfaction, the 5-item short form of the Brayfield and Rothe Job Satisfaction scale was used (Judge et al., 2005). Participants were asked to rank items from 1-5 (1=strongly disagree; 5=strongly agree). A mean job satisfaction score was computed. The 3-item Work-Life Balance Questionnaire (Haar et al., 2014) was used to assess work-life balance. Participants were asked to rank items on a scale of 1-5 (1=strongly disagree; 5=strongly agree). A mean work-life balance score was computed.

ASD severity. The final portion of the survey assessed participants' experience living with ASD using the 50-item Autism Spectrum Quotient (AQ) Adult Version (Baron-Cohen et al., 2001). Participants were asked to rank items on a scale of 1 (definitely disagree) to 4 (definitely agree). After reverse coding indicated items, a response of "definitely agree" or "slightly agree" to any question was given a point. Final scores ranged from 0 to 50. Based on measurement guidance (Broadbent et al., 2013), a dichotomous variable was created by splitting the sample into those with an ASD severity score of less than 29 (no clinically significant ASD traits) and those with an ASD severity score of 29 or higher (clinically significant ASD traits).

Data Analysis

Descriptive statistics (i.e., frequency, mean, standard deviation) were calculated for all study variables. Linear regression models were used to test associations between mental health

(i.e., anxiety and depression) and 1) work-life balance and 2) job satisfaction. All analyses controlled for age, sex, race, education, income, and number of hours worked weekly. Linear regression models were run again after stratifying the sample by ASD severity to test for differential associations between those with and without clinically significant ASD traits. All data was analyzed using SPSS Statistics, and the alpha level was set at 0.05.

RESULTS

The sample had a mean age of 29 years old (see Table 1) and was 60% male. The sample was racially diverse, with 39% identifying as white, 19% identifying as African American/Black, and 16% identifying as multiple race/ethnicities. Most participants had completed a college degree. While income varied, the most prevalent annual income was between $35,000 and $49,999 (33%). On average, participants worked 35 hours per week.

TABLE 1. Sample characteristics (*n*=328)

	***n* (%) or Mean ± SD**
Age (18-56)	28.5 ± 6.9
Sex	
Male	196 (59.8)
Female	132 (40.2)
Race/Ethnicity	
African American/Black	61 (18.6)
American Indian or Alaskan Native	35 (10.7)
Asian American/Asian	25 (7.6)
Hispanic/Latin(x)	15 (4.6)
Native Hawaiian or Pacific Islander	11 (3.4)
Middle Eastern, Arab, or Arab American	2 (0.6)
White	127 (38.7)
Multiple race/ethnicities	52 (15.9)
Education Status (Degree Completed)	
No Academic Degree Completed	11 (3.4)
Associate's Degree	128 (39.0)
Bachelor's Degree	140 (42.7)

Master's Degree	45 (13.7)
Doctoral Degree (e.g., J.D., M.D., Ph.D.)	4 (1.2)
Income	
Less than $10,000	3 (0.9)
$10,000 to $14,999	16 (4.9)
$15,000 to $24,999	18 (5.5)
$25,000 to $34,999	58 (17.7)
$35,000 to $49,999	108 (32.9)
$50,000 to $74,999	49 (14.9)
$75,000 to $99,999	50 (14.2)
$100,000 to $149,000	17 (5.2)
$150,000 to $199,000	7 (2.1)
$200,000 or more	2 (0.6)
Hours Worked per Week	34.65 ± 11.62

Note. SD=standard deviation

Variables of interest (see Table 2) for the study included anxiety, depression, job satisfaction, work-life balance, and ASD severity.

TABLE 2. Variables of interest (*n*=328)

	Mean ± SD
GAD-7 Score (0-21)	10.0 ± 4.4
PHQ-9 Score (0-27)	12.46 ± 5.54
Job Satisfaction Score (1-5)	3.17 ± 0.43
Work-Life Balance Score (1-5)	3.51 ± 0.81
Autism Spectrum Disorder Severity Score (0-50)	25.24 ± 3.54

Note. SD=standard deviation; GAD-7=Generalized Anxiety Disorder 7-item; PHQ-9=Patient Health Questionnaire 9-item

Aims #1 and #2 of the study were to assess the association(s) between mental health, work-life balance, and job satisfaction among employed adults with ASD. Results of linear regression models are presented in Table 3. There was not a statistically significant relationship between anxiety and WLB, depression and WLB, or depression and JS. There was a significant, negative association found between depression and job satisfaction such that as depression symptoms increased, job satisfaction decreased.

TABLE 3. Associations between mental health and employment outcomes among adults with Autism Spectrum Disorder (*n*=328)

	Work-Life Balance	**Job Satisfaction**
	β	β
Anxiety	0.014	-0.006
Depression	0.003	-0.009*

*Indicates statistical significance ($p<0.05$)
Note. All analyses controlled for age, sex, race, education, income, and number of hours worked weekly.

The third and final aim of the study was to assess whether ASD severity moderated the associations between mental health and employment outcomes among employed adults with ASD. The majority of the sample (*n*=283) did not have clinically significant traits of ASD. Table 4 shows the results of the linear regression models after the sample was stratified by presence of clinically significant ASD traits. Associations between anxiety and work-life balance, anxiety and job satisfaction, and depression and job satisfaction were not statistically significant in either group. The association between depression and work-life balance was statistically significant only among those with clinically significant ASD traits such that as depression symptoms got worse, work-life balance decreased.

TABLE 4. Differential associations between mental health and employment outcomes among adults with Autism Spectrum Disorder (ASD) by ASD severity

	Work-Life Balance		**Job Satisfaction**	
	Not Clinically Significant ASD (*n*=283)	**Clinically Significant ASD** (*n*=41)	**Not Clinically Significant ASD** (*n*=283)	**Clinically Significant ASD** (*n*=41)
Anxiety	0.17	-0.034	-0.002	-0.019
Depression	0.005	-0.063*	-0.004	-0.034

*Indicates statistical significance ($p<0.05$)

Note. ASD=Autism Spectrum Disorder. All analyses controlled for age, sex, race, education, income, and number of hours worked weekly.

DISCUSSION

Summary of Findings

The objective of this study was to assess the relationships between mental health (i.e., anxiety, depression) and employment experiences (i.e., work-life balance, job satisfaction) among employed adults with Autism Spectrum Disorder, while factoring in ASD severity. Results showed that depression was negatively associated with job satisfaction among employed adults with ASD, and depression was negatively associated with work-life balance only among adults with clinically significant ASD traits.

The frequency of individuals with clinically significant traits of ASD was low, with only 13% of the sample classified as having traits of clinically significant ASD. Notably, the significant association between depression and job satisfaction found in the whole sample was no longer significant when the sample was stratified by ASD severity.

Mental Health, Job Satisfaction, and Work-Life Balance

Prior research indicated that adults with ASD are limited in their work capabilities (Beenstock et al., 2020; Roux et al., 2013; Wilczynski et al., 2013). However, our study indicated that, on average, participants worked nearly 40 hours per week, which is the standard work week in the U.S. A large portion of the study sample made between $35,000 to $49,999 a year, with the national median income being approximately $44,000 (“Average Family Income by State 2023”, 2023). The mean score for job satisfaction on a scale of 1-5 was about 3 in this study sample, which does not necessarily contradict earlier findings that indicate there is a general dissatisfaction with work among employed adults with ASD (Goldfarb et al., 2021) considering the mean score is in the middle of the scale. However, the study which provided us with the job satisfaction scale reported a mean score of 3.86 for participants (Judge et al., 2005). Participants

in this study (Judge et al., 2005) were employees across the United States with no known diagnoses. Mean score for work-life balance on a scale of 1-5 was approximately 3.5, which is consistent with preliminary research. In a study conducted by Haar et al. (2014) that assessed work-life balance across several different populations in New Zealand, the mean score for work-life balance for participants was 3.4.

Previous research found that a majority of adults with ASD are also diagnosed with a mental health disorder (Eaves et al., 2008). Further, a study conducted by Ho et al. (2019) found that adults with ASD expressed notable levels of distress and hindered the quality of life. Distress and quality of life were noted to be similar if not worse in individuals with primary mental health disorders. In the validation of the GAD-7 questionnaire, Williams (2014) stated that the recommended cut-off point for further assessment is 10 or greater. In our study, the mean score for participants was 10 suggesting that most participants express either mild or moderate anxiety (Williams, 2014). The prevalence of generalized anxiety disorder in our sample could be correlated with the presence of ASD characteristics. Ruiz et al. (2011) reported that more severe GAD-7 levels correlated with higher disability states. Kroenke et al. (2001) stated that PHQ-9 scores of 10, 15, and 20 represented moderate, moderately severe and severe depression, respectively. In our study particpants expressed a mean score of about 12, indicating the general sample may suffer from at least moderate depression. These findings are consistent with other research (Lever et al., 2016) that found that 79% of adults with ASD met criteria for a psychiatric disorder at least once in their lives, the most common being anxiety and depression.

We hypothesized that anxiety and depression would be negatively correlated with work-life balance and job satisfaction. However, only the association between depression and job satisfaction was statistically significant. A study referenced in our preliminary research by

Goldfarb et al. (2021) suggested that participants expressed a general dissatisfaction with work due to a lack of meaning in their jobs. Additionally, employees with ASD search for purpose and fulfillment in their careers by finding jobs that interest them (Goldfarb et al., 2021). The association between depression and job satisfaction could be explained by this. If adults with ASD generally want a fulfilling career, discontent with work could lead to higher levels of depression in these individuals. Our findings for job satisfaction contradict earlier findings (Haar et al., 2014). Our data suggest that there is a positive relationship between work-life balance and anxiety and well as work-life balance and depression, however, in the study conducted by Haar et al., (2014) these relationships were both negative and statistically significant. Likewise, in a study conducted by Netemeyer et al. (2005), results indicated a link between job stress and conflict between work and family. As previously stated, individuals with ASD are more satisfied with fulfilling careers. Consequently, this could be a possible explanation as to why depression and job satisfaction are linked. A possible explanation for why depression and job satisfaction are linked but not depression and work-life balance in these individuals could be that adults with ASD do not typically have their own families that could interfere with their work-life balance. According to Spectrumnews.org, only 5% of adults with ASD have been married (Furfaro, 2018). Therefore, the anxiety caused by balancing a family outside of work is not always present in these individuals and may be a contributing factor as to why our findings did not indicate depression is linked to work-life balance.

Differential Effects by ASD Severity

Very limited research has been done on how ASD severity impacts the experience of adults with ASD in the workforce. Considering that previous research found that adults with

ASD face lower employment rates than the general population (Beenstock et al., 2020; Roux et al., 2013; Wilczynski et al., 2013), the lack of research in this area could be due to the generally low employment rate of individuals with ASD and the limitations that a severe diagnosis might have. In the current study, anxiety and depression exhibited a positive relationship yet statistically insignificant with WLB in the overall sample, as well as in the group without clinically significant traits of ASD. A possible explanation for this is that mental health does not generally have an impact on WLB. When the sample was stratified by ASD severity, the only statistically significant relationship was between depression and WLB in individuals with clinically significant traits of ASD. This association was not significant in the overall sample. The differences in the experiences of those with or without clinically significant traits of ASD could be a possible explanation for why depression is linked to WLB for people with severe ASD. Previous research conducted by Bishop-Fitzpatrick et al., (2015) indicated that heightened stress levels were contributors to social disability and impeded social functioning in adults with ASD. Reserach on adult outcomes in ASD indicates there is little social integration for these individuals (Howlin et al., 2017). Because ASD impairs social functioning which in turn causes stress for individuals with ASD, in conjunction with the lack of social acceptance for those with ASD, those with more severe symptoms of ASD may be more heavily impacted mentally. Thus, depression could be linked to WLB in adults with ASD due to distress caused by heightened symptoms that may affect their social life.

Strengths and Limitations

A considerable strength of this study was the size of the sample. Because this topic of research is specific to a small subgroup of the population, it was beneficial to have high study participation. A limitation of this study is that self-response surveys are subject to recall and

social desirability bias. Additionally, our sample had a high majority of adults that did not express clinically significant traits of ASD. A sample with mostly high-functioning adults with ASD may impact study findings. Future research should focus on inclusion of adults with ASD at all levels of severity.

Implications for Future Research and Programming

Based on our research, ASD severity had an impact on the association between mental health and work-life balance, specifically the association between depression and work-life balance in those with clinically significant traits of ASD. Future research should further analyze the association between depression and work-life balance in individuals with significant traits of ASD by examining which factors contributing to work-life balance may impact this association. The sample should focus on adults at all levels of ASD severity and surveys should assess which specific factors of work-life balance are most difficult for these individuals to participate in. These factors should include work-family balance and consider broader aspects such as community, leisure, church, sports, etc. as referenced in Haar et al. (2014).

Earlier findings stated that adults with ASD reported the primary characteristics of autistic burnout as chronic exhaustion, loss of skills, and reduced tolerance to stimulus (Raymaker et al., 2020). Raymaker et al. (2020) defined autistic burnout as a result from chronic life stress combined with a mismatch of expectations and abilities without adequate support. Clinical depression and autistic burnout share characteristics such as suicidal ideations. Additionally, participants in that study mentioned neutroypticals have a lack of empathy towards neurodivergent individuals (Raymaker et al., 2020). With this in mind and the findings from our study, future programming in the workplace should aim to assist individuals with ASD by creating an environment which will limit factors contributing to depression such as lack of

support. There should be more specific programming implemented for those with clinically significant traits of ASD, considering our study indicated a significant association between work-life balance and depression. Individuals with ASD that have an interest in social interaction may not have the skills necessary to make a social encounter successful (Schriber et al., 2014). Programming and counseling for individuals with more severe traits of ASD should help to facilitate successful social interactions for these individuals both within and outside the workplace.

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APPENDICES

APPENDIX A. IRB APPLICATION

The University of Mississippi
Office of Research and Sponsored Programs
Division of Research Integrity and Compliance – Institutional Review Board
100 Barr Hall – University, MS 38677
irb@olemiss.edu 662-915-7482

APPLICATION FOR EXEMPTION

Purpose: Many studies qualify for an abbreviated review, according to the federal regulations and university policy.

- **Part I of this form screens for a brief review.**
- **Part II of this form completes the abbreviated IRB application.**
- **Part III of this form gives instructions for obtaining the required assurances.**
- **The IRB makes the final determination on whether you must fill out a full application.**

Always download the most recent version of this form: http://www.research.olemiss.edu/irb/protocol/forms.

Prepare and send application form as a **Word** document. **E-mail the completed form and attachments (and forwarded email assurance if PI is a student)** to irb@olemiss.edu.

Note: Some class project studies may qualify for a classroom waiver of IRB Application. Instructors: see form here.

PART I — Screening

1. Do any of the following apply to your study?

Research Methods:

Clinical Treatment study	☐ Yes	☒ No
Exercise	☐ Yes	☒ No
X-rays	☐ Yes	☒ No
Collection of blood, urine, other bodily fluids, or tissues	☐ Yes	☒ No
Use of blood, urine, other bodily fluids, or tissues with identifiers	☐ Yes	☒ No
Use of drugs, biological products, or medical devices	☐ Yes	☒ No
Use of drugs, biological products, or medical devices	☐ Yes	☒ No
Use of data collected in the European Economic Area (EEA)*	☐ Yes	☒ No

Targeted Subjects:

Prisoners	☐ Yes	☒ No

Elements of Deception:

The study uses surreptitious videotaping	☐ Yes	☒ No
The study gives subjects deceptive feedback, whether positive or negative	☐ Yes	☒ No
The study uses a research confederate (i.e., an actor playing the part of subject)	☐ Yes	☒ No

If you checked Yes to any of the above, STOP HERE and fill out the FULL IRB APPLICATION FORM.

***Anonymous or Confidential?** Anonymous means (1) the recorded data cannot associate a subject with his/her data, and (2) the data cannot identify a subject. *Examples:* surveys with no names but with demographic data that can identify a subject (e.g., the only African-American in a class) are not anonymous.

***Sensitive Information?** Sensitive information includes but is not limited to (1) information that risks damage to a subject's reputation; (2) information that involves criminal or civil liability; (3) information that can affect a subject's employability; and (4) information involving a person's financial standing. *Examples:* Surveys that ask about porn use, illegal drug or alcohol use, religion, use of alcohol while driving, AIDS, cancer, etc. contain sensitive information.

***European Economic Area** - Collection of data in the European Economic Area (the 28 states of the European Union and Iceland, Liechtenstein, Norway, and Switzerland). Special considerations apply -if data are not 100% anonymous. See GDRP Guidance for more information

If using Qualtrics for anonymous surveys, see guidance here.

2. The ONLY involvement of human subjects will be in the following categories (check all that apply)
PLEASE READ CAREFULLY: MUCH CHANGED WITH NEW REGULATIONS, JANUARY 2019

☐ 1) **Educational Research:** Research conducted in established or commonly accepted educational settings, involving normal educational practices. Research is not likely to adversely impact students' opportunity to learn required educational content or the assessment of educators who provide instruction. This includes most research on regular and special education strategies, and research on the effectiveness of or the comparison among instructional techniques, curricula, or classroom management methods.

☒ 2) **Surveys, Interviews, Educational Tests (cognitive, diagnostic, aptitude, achievement), Observation of Public Behavior (including video or auditory recording).** ***AT LEAST ONE OF THE FOLLOWING MUST BE CHECKED***

☒ (i) Information recorded by the investigator cannot readily identify the subject (either directly or indirectly)

☐ (ii) Disclosure of subjects' responses outside the research could **NOT** reasonably place the subjects at risk of criminal or civil liability or be damaging to the subjects' financial standing, educational advancement, employability, or reputation

☐ (iii) Information recorded by the investigator includes identifiers and the investigator specifies strong security measures to protect the data (e.g., encryption for electronic data; multiple locks for paper data). Minors are **NOT** permitted under this sub-category

☐ 3) **Benign Behavioral Interventions (BBI):** Research involving interventions in conjunction with collection of information from an adult subject through verbal or written responses (including data entry) or audiovisual recording, if the subject prospectively agrees to the intervention and information collection.

- BBI is limited to communication or interpersonal contact; cognitive, intellectual, educational, or behavioral tasks; manipulation of the physical, sensory, social or emotional environment
- Intervention Requirements:
  - brief duration (maximum intervention = 3 hours within one day; data collection may extend more hours & over days)
  - painless/harmless (transient performance task-related stress, anxiety, or boredom are acceptable)
  - not physically invasive (no activity tracker, blood pressure, pulse, etc.)
  - unlikely to have a significant adverse lasting impact on subjects
  - unlikely that subjects will find interventions offensive or embarrassing
  - no deception / omission of information, such as study purpose, unless subject prospectively agrees

AT LEAST ONE OF THE FOLLOWING MUST BE CHECKED

☐ (A) Recorded information cannot readily identify the subject (either directly or indirectly)

☐ (B) Any disclosure of subjects' responses outside the research could **NOT** reasonably place the subjects at risk of criminal or civil liability or be damaging to the subjects' financial standing, employability, educational advancement, or reputation

☐ (C) Information is recorded with identifiers and the investigator specifies strong security measures to protect the data (e.g., encryption for electronic data; multiple locks for paper data)

☐ 4) **Biospecimen Secondary Research**: Secondary Research for which consent is not required: use of identifiable information or identifiable biospecimens that have been or will be collected for some other 'primary' or 'initial' activity, if **ONE** of the following is met: (i) biospecimens or information is publicly available; (ii) information recorded by the investigator cannot readily, directly or indirectly identify the subject, and the investigator does not contact the subject or re-identify the subject; (iii) collection and analysis involving investigator's use of identifiable health information when use is regulated by HIPAA; or (iv) research information collected by or on behalf of the federal government using government-generated or -collected information obtained for non-research activities.

☐ 5) **Research and Demonstration Projects on Federal Programs**: The study is conducted pursuant to specific federal statutory authority and examines certain federal programs that deliver a public benefit [call IRB for details if you think your study may fit].

☐ 6) **Food Tasting/Evaluation**: Taste and food quality evaluation and consumer acceptance studies, (i) if wholesome foods without additives are consumed or (ii) if a food is consumed that contains a food ingredient at or below the level and for a use found to be safe, or agricultural chemical or environmental contaminant at or below the level found to be safe, by the Food and Drug Administration or approved by the Environmental Protection Agency or the Food Safety and Inspection Service of the U.S. Department of Agriculture.

PART II — Abbreviated Application

3. Project Title: Adult Autism Spectrum Disorder Study

4. Principal Investigator: ☐ **Dr.** ☒ **Ms.** ☐ **Mr.** **Emma Atkinson**

Department: **Biology** **Department Chair's email (for cc of approval):** **bnoonan@olemiss.edu**

Work Phone: **(662) 610-3700** **Home or Mobile Phone: (662) 610-3700**

E-Mail Address: epatkins@go.olemiss.edu

If Principal Investigator is a student:

Graduate student:

☐ Dissertation ☐ Master's thesis

☐ Other graduate project

Undergraduate student:

☐ Senior thesis: ☒ SMBHC

☐ Croft Institute ☐ Other undergraduate project

Research Advisor:HANNAH ALLEN (required for student researchers)

Department: **HEALTH, EXERCISE SCIENCE, & RECREATION MANAGEMENT**

E-Mail Address: **HKALLEN1@OLEMISS.EDU**

Work Phone: **662-915-1630**

Home or Cell Phone: 484-753-1612

5. Funding Source:

Is this project funded? ☒ Yes

⇨

☐ No

If Yes, is the funding:

Internal: ☒ **Source: Dr. Allen (Research Advisor) Research Start Up Funding (Account #250222598A)**

External: ☐ **Pending/Agency:** Click to enter

☐ **Awarded/Agency:** Click to enter

PI(s) on external funding: Click to enter

6. List ALL personnel involved with this research who will have contact with human subjects or with their identifiable data. All personnel listed here must complete CITI training OR the Alternative to CITI (ATC) training before this application will be processed*.

NAME	POSITION/TITLE	ROLE ON PROJECT	Training completed: CITI or ATC
PI Emma Atkinson	Undergraduate Student	Principal Investigator	☒ ☐
Advisor Hannah Allen	Faculty/Staff	Co-Investigator	☒ ☐
Click to enter	Select	Click to enter	☐ ☐
Click to enter	Select	Click to enter	☐ ☐

If space is needed to list additional project personnel, submit Appendix A.
***See Exempt Human Research Policy for training exceptions**

Research Methodology/Procedures

7. Check all procedures below that apply to your study:

☐ Pre-existing data or biological samples

⇨

- **Source of data:** Click to enter
- **Do data/samples have identifiers?** ☐ Yes* ☐ No
- **Describe how data will be secured** (e.g., encryption for electronic data; multiple locks for paper data). Click to enter

*Minors are **NOT** permitted under this sub-category

☐ Observation

☐ Oral history

☐ Interview ⇨ ⇨ ⇨ Attach interview questions.

☐ Focus group ⇨ ⇨ ⇨ Attach topic and questions.

☒ Questionnaire or survey ⇨ ⇨ ⇨	Attach questionnaire or survey. **If online, describe platform (e.g., Qualtrics):** **Qualtrics**
☐ Audio recording or videotaping ⇨ ⇨	Use and attach a release form if you plan to disseminate **quoted** comments or taped content. (This covers you and UM legally – Not for IRB purposes)
☐ The study has misleading or deceptive: ⇨ (1) study descriptions; (2) procedure explanations; and/or (3) survey instructions/rationales.	In the abstract, provide complete details and a rationale for employing misleading/deception information. Include **Appendix D** in your attachments.
8. Consent Procedures:	
☐ Oral ⇨ ⇨ ⇨	Attach script.
☒ Information Sheet/Cover Letter ⇨ ⇨	Attach. (**No subject signatures required**, see example here: Go to Examples and Templates, then 'Sample Information Sheet')
☐ **Not applicable, Explain:** Click to enter	

9. Project Summary

Briefly summarize your project using non-technical, jargon-free language that can be understood by non-scientists.

See http://www.research.olemiss.edu/irb-forms for abstract examples.

Give a brief statement of the research question supporting the reasons for, and importance of, the research: The aim of this study is to assess the relationships between mental health, work-life balance, and job satisfaction among employed U.S. adults living with Autism Spectrum Disorder (ASD). We hypothesize that mental health will be positively associated with both work/life balance and job satisfaction among adults with ASD. We will also explore whether ASD severity moderates these associations.

Describe the ages and characteristics of your proposed subjects and how you will *recruit* them (attach recruitment script or materials to the application): Participants must be 18 years old or older, currently employed for pay in the U.S., and have been diagnosed with Autism Spectrum Disorder by a health professional in their lifetime. We will recruit participants using a flyer (submitted with IRB application materials) that includes a brief description of the project, participant eligibility criteria, the survey link, and contact information for the research team. We will distribute the flyer to organizations with links to ASD research, treatment, and outreach. If an organization would like to see the survey questions, a copy of the

survey will be provided to them. The research team will also distribute the flyer through a UM Today announcement, direct email, and professional social media platforms.

For studies using only adult subjects, state how you will ensure they are 18+:	☒ First question on survey/interview ☐ **Other:** Click to enter ☐ Not applicable

***Briefly* describe the research design AND carefully explain how your study will meet each of the requirements of the category criteria you checked on Page 2:** We are conducting an anonymous online survey using Qualtrics of employed U.S. adults living with Autism Spectrum Disorder. A flyer with project information and the survey link will be distributed broadly by the research team and with the help of organizations with links to ASD research, treatment, and outreach. The survey will ideally launch in July 2022 and will remain open until we have reached an adequate number of participants. Information regarding consent will be provided online prior to the beginning of the survey. Participants will have the opportunity to review the informed consent information and then indicate that they voluntarily consent to participate. They will be informed that they may print the consent form or contact the Principal Investigator for a copy. All data will be stored using password-protected files and computers. No one but the research team will have access to collected data, and once all survey responses have been downloaded to a computer, all online responses will be deleted. Participants have the option to opt in to providing contact information to be entered into a raffle to receive an incentive. Contact information will only be collected for incentive purposes and will be permanently deleted after incentives are distributed.

Give a *detailed* description of the procedure(s) subjects will undergo (from their perspective): As a participant in this study, you will be asked to complete a brief, anonymous online survey on the following domains of interest: demographic information, job satisfaction, work/life balance, mental health, and ASD severity. The survey should take about 10-15 minutes to complete. You will receive information about the study and a link to participate through a study flyer. Contact information for the primary researchers will be provided, and the first page of the survey will be an informed consent form. All survey responses will be anonymous. At the end of the survey, you will have the option to take an additional survey where you will enter your full name and email address to enter into a raffle to win one of 10 $15 Amazon gift cards.

10. Appendix Checklist:

A. Additional Personnel not listed on first page of application?
☒ **No** ☐ **Yes – complete Appendix A**

B. Will the research be conducted in schools or child care facilities?
☒ **No** ☐ **Yes – complete Appendix B**

C. Does your research involve deception or omission of elements of consent?
☒ **No** ☐ **Yes – complete Appendix D**

D. Will your research be conducted outside of the United States?
☒ **No** ☐ **Yes – complete Appendix E**

E. Will your research involve protected health information (PHI)?
☒ **No** ☐ **Yes – complete Appendix F if applicable**

11. Attachments Checklist:

Did you submit:

a. survey or questionnaires?

☒ **Yes** ☐ **Not Applicable**

b. interview questions?

☐ **Yes** ☒ **Not Applicable**

c. focus group topics?

☐ **Yes** ☒ **Not Applicable**

d. recruitment email, announcement, or script?

☒ **Yes** ☐ **Not Applicable: No subject contact**

e. informed consent information letter or script?

☒ **Yes** ☐ **Not Applicable: No subject contact**

f. permissions for locations outside the University?*

☐ **Yes** ☒ **Not Applicable**

***if giving a survey, whether on or off campus, please ensure the person giving permission (e.g., the teacher of a class) has an explicit opportunity to see the survey before they give their permission for its distribution**

12. If using class points as incentives, are there alternative assignments available for earning points that involve comparable time and effort?

☐ **Yes** ☒ **Not Applicable**

13. If using an anonymous survey through Qualtrics and giving incentives in a separate survey, have you read and conducted the testing of the surveys according to the procedures here?

☒ **Yes** ☐ **Not Applicable**

PART III: ASSURANCES
Conflict Of Interest And Fiscal Responsibility

Do you or any person responsible for the design, conduct, or reporting of this study have an economic interest in, or act as an officer or a director of any outside entity whose financial interests may reasonably appear to be affected by this research?

☐ YES ⇨ ⇨ If Yes, please describe any potential conflict of interest. Click to enter

☒ NO

Do you or any person responsible for this study have existing financial holdings or relationships with the sponsor of this study?

☐ YES ⇨ ⇨ If Yes, please describe any potential conflict of interest. Click to enter

☒ NO

☐ N/A

Principal Investigator Assurance

Principal Investigator's Assurance

I certify that the information provided in the application is complete and correct. As Principal Investigator, I have the ultimate responsibility for the protection of the rights and welfare of the human participants, conduct of the research, and the ethical performance of the project. I will comply with all UM policies and procedures, as well as with all applicable federal, state, and local laws regarding the protection of participants in human research, including, but not limited to the following:

- Informed consent will be obtained from the participants, if applicable and appropriate;
- Any proposed modifications to the research protocol that may affect its designation as an exempt (brief) protocol application will be reported to the IRB for approval prior to being implemented.
- Adverse events and/or unanticipated problems will be reported to the IRB as required.

I certify that I, and all key personnel, have completed the required initial and/or refresher CITI or CITI Alternative courses in the ethical principles and regulatory requirements for the protection of human research participants.

Emma Atkinson

7/5/22

Typed signature/name of Principal Investigator **Date**

Research Advisor's* Assurance (required for student projects)

Email your Advisor with the following:

1. Email subject line: "IRB Advisor Approval Request from (your name)"
2. Your IRB submission materials as attachments
3. Copy and paste the statements below into the body of the email
4. Forward the reply email from your Advisor to irb@olemiss.edu along with your IRB submission materials attached.

***The research advisor must be a UM faculty member. The faculty member is considered the responsible party for the ethical performance and regulatory compliance of the research project.**

Please review my attached protocol submission. Your reply email to me will constitute your acknowledgement of the assurances below.

Thank you,
[type your name here]

As the Research Advisor, I certify that the student investigator is knowledgeable about the regulations and policies governing research with human participants and has sufficient training and experience to conduct this particular research in accordance with the approved protocol.

I agree to meet with the investigator on a regular basis to monitor research progress.

Should problems arise during the course of research, I agree to be available, personally, to supervise the investigator in solving them.

I will ensure that the investigator will promptly report incidents (including adverse events and unanticipated problems) to the IRB.

If I will be unavailable, for example, on sabbatical leave or vacation, I will arrange for an alternate faculty member to assume responsibility during my absence, and I will advise the IRB by email of such arrangements.

I have completed the required CITI course(s) in the ethical principles and regulatory requirements for the protection of human research participants.

APPENDIX B. SURVEY

Adult Autism Spectrum Disorder Study

Survey

Thank you for taking the time to participate in this study on mental health, job satisfaction, and work-life balance among adults with Autism Spectrum Disorder (ASD). Please take a moment to review the informed consent information below. If you would like to keep a copy of this information, please print the informed consent form directly from this webpage or request a copy from the Principal Investigator.

[INSERT INFORMED CONSENT INFORMATION]

Your consent indicates that you are at least 18 years of age, you have read this consent form or have had it read to you, your questions have been answered to your satisfaction, and you voluntarily agree to participate in this research study. If you agree to participate, please indicate so by answering the question below.

1. I have reviewed the informed consent information and consent to participate in this study.
    - Yes, I agree/consent to participate
    - No, I do NOT agree/consent to participate (if no, end survey)

Eligibility Screener

2. What is your current age (in years)? _____ (if less than 18, end survey)

3. Do you currently live in the United States?
    - Yes
    - No (if selected, end survey)

4. Autism Spectrum Disorder (ASD) is a neurological and developmental disorder that affects how people interact with others, communicate, learn, and behave. In your lifetime, have you ever been diagnosed by a health professional for ASD?
    - Yes, I have been diagnosed with Autism Spectrum Disorder in my lifetime
    - No (if selected, end survey)

5. Are you currently employed for pay in the United States?
    - Not currently employed (if selected, end survey)
    - Employed part-time for pay
    - Employed full-time for pay

Demographic Information

The following section will ask you to provide basic information about yourself. Remember that your responses are anonymous.

6. What sex were you assigned at birth, such as on an original birth certificate?
    - Male
    - Female

7. What is your gender identity?
    - Male
    - Female
    - Trans male/Trans man
    - Trans female/Trans woman
    - Gender non-binary/Gender non-conforming
    - Self-identify (please specify): _____

8. What is your race/ethnicity? Select all that apply.
    - African American/Black
    - American Indian or Alaskan Native
    - Asian American/Asian
    - Hispanic/Latin(x)
    - Native Hawaiian or Pacific Islander
    - Middle Eastern, Arab, or Arab American
    - White
    - Self-identify (please specify): _____

9. What is the highest academic degree that you have completed?
    - No academic degree completed
    - Associate's degree
    - Bachelor's degree
    - Master's degree
    - Doctoral degree (e.g., J.D., M.D., Ph.D.)
    - Other degree, please specify: _____

10. What type of degree are you currently seeking?
    - Not currently seeking any academic degree
    - Associate's degree
    - Bachelor's degree
    - Master's degree
    - Doctoral degree (e.g., J.D., M.D., Ph.D.)

- Other degree, please specify: _____

11. Approximately how much money are you earning per year in your current job(s)?
    - Less than $10,000
    - $10,000 to $14,999
    - $15,000 to $24,999
    - $25,000 to $34,999
    - $35,000 to $49,999
    - $50,000 to $74,999
    - $75,000 to $99,999
    - $100,000 to $149,999
    - $150,000 to $199,999
    - $200,000 or more

12. What is your job title? If you have more than one paid job, please list all job titles. _____

13. What is the average number of hours you work per week at your current job(s)? If you work multiple jobs for pay, please combine into one total number of hours worked weekly. _____

Job Satisfaction

The following section will ask about your satisfaction with your current job(s). Remember that your responses are anonymous.

14. Please rate the following statements about your current job(s).

	Strongly disagree	**Disagree**	**Neither agree nor disagree**	**Agree**	**Strongly agree**
Most days I am enthusiastic about my work.					
I feel fairly satisfied with my present job(s).					
Each day at work seems like it will never end.					
I find real enjoyment in my work.					
I consider my job(s)					

rather unpleasant.					

Work-Life Balance

The following section will ask about your work-life balance. Remember that your responses are anonymous.

15. Please rate the following statements about your current job(s).

	Strongly disagree	**Disagree**	**Neither agree nor disagree**	**Agree**	**Strongly agree**
I am satisfied with my work-life balance, enjoying both roles.					
Nowadays, I seem to enjoy every part of my life equally well.					
I manage to balance the demands of my work and personal/family life well.					

Mental Health

The following section will ask about your mental health. Remember that your responses are anonymous.

16. Over the last two weeks, how often have you been bothered by the following problems?

	Not at all	**Several days**	**More than half the days**	**Nearly every day**
Feeling nervous, anxious, or on edge				
Not being able to stop or control worrying				
Worrying too much about different things				

Trouble relaxing				
Being so restless that it is hard to sit still				
Becoming easily annoyed or irritable				
Feeling afraid as if something awful might happen				

17. If you checked off *any* problems above, how <u>difficult</u> have these problems made it for you to do your work, take care of things at home, or get along with other people?
    - Not difficult at all
    - Somewhat difficult
    - Very difficult
    - Extremely difficult

18. Over the <u>last two weeks</u>, how often have you been bothered by any of the following problems?

	Not at all	**Several days**	**More than half the days**	**Nearly every day**
Little interest or pleasure in doing things				
Feeling down, depressed, or hopeless				
Trouble falling asleep or staying asleep, or sleeping too much				
Feeling tired or having little energy				
Poor appetite or overeating				
Feeling bad about yourself- or that you are a failure or have let yourself or your family down				
Trouble concentrating on things, such as reading the newspaper or watching TV				
Moving or speaking so slowly that other people could have noticed, or the opposite- being so fidgety or restless that you have been moving around a lot more than usual				
Thoughts that you would be better off dead or of hurting yourself in some way				

19. If you checked off *any* problems above, how <u>difficult</u> have these problems made it for you to do your work, take care of things at home, or get along with other people?
    - Not difficult at all
    - Somewhat difficult
    - Very difficult
    - Extremely difficult

<u>Autism Spectrum Disorder Severity</u>

The following section will ask about your experiences living with Autism Spectrum Disorder. Remember that your responses are anonymous.

20. Please rank the following statements.

	Definitely disagree	**Slightly disagree**	**Slightly agree**	**Definitely agree**
I prefer to do things with others rather than on my own.				
I prefer to do things the same way over and over again.				
If I try to imagine something, I find it very easy to create a picture in my mind.				
I frequently get so strongly absorbed in one thing that I lose sight of other things.				
I often notice small sounds when others do not.				
I usually notice car number plates or similar strings of information.				
Other people frequently tell me that what I've said is impolite, even though I think it is polite.				
When I'm reading a story, I can easily imagine what the characters might look like.				

I am fascinated by dates.				
In a social group, I can easily keep track of several different people's conversations.				
I find social situations easy.				
I tend to notice details that others do not.				
I would rather go to a library than to a party.				
I find making up stories easy.				
I find myself drawn more strongly to people than to things.				
I tend to have very strong interests, which I get upset about if I can't pursue.				
I enjoy social chitchat.				
When I talk, it isn't always easy for others to get a word in edgewise.				
I am fascinated by numbers.				
When I'm reading a story, I find it difficult to work out the characters' intentions.				
I don't particularly enjoy reading fiction.				
I find it hard to make new friends.				
I notice patterns in things all the time.				
I would rather go to the theater than to a museum.				
It does not upset me if my daily routine is disturbed.				

I frequently find that I don't know how to keep a conversation going.				
I find it easy to "read between the lines" when someone is talking to me.				
I usually concentrate more on the whole picture, rather than on the small details.				
I am not very good at remembering phone numbers.				
I don't usually notice small changes in a situation or a person's appearance.				
I know how to tell if someone listening to me is getting bored.				
I find it easy to do more than one thing at once.				
When I talk on the phone, I'm not sure when it's my turn to speak.				
I enjoy doing things spontaneously.				
I am often the last to understand the point of a joke.				
I find it easy to work out what someone is thinking or feeling just by looking at their face.				
If there is an interruption, I can switch back to what I was doing very quickly.				
I am good at social chitchat.				
People often tell me that I keep going on and on about the same thing.				

When I was young, I used to enjoy playing games involving pretending with other children.				
I like to collect information about categories of things (e.g., types of cars, birds, trains, plants).				
I find it difficult to imagine what it would be like to be someone else.				
I like to carefully plan any activities I participate in.				
I enjoy social occasions.				
I find it difficult to work out people's intentions.				
New situations make me anxious.				
I enjoy meeting new people.				
I am a good diplomat.				
I am not very good at remembering people's date of birth.				
I find it very easy to play games with children that involve pretending.				

Thank you for taking the time to participate in this survey! Please click the link below to enter yourself into a raffle to win one of 10 $15 Amazon gift cards.

[LINK TO SECOND SURVEY]

Incentive Survey

1. As a thank you for participation, 10 participants will be randomly selected to receive a $15 Amazon gift card. Would you like to enter yourself into this raffle?
    - Yes (if yes, go to #2)
    - No

2. Please enter your full name and email address. This information will be kept confidential.
   First Name: _____
   Last Name: _____
   Email Address: _____

APPENDIX C. CONSENT FORM

CONSENT TO PARTICIPATE IN RESEARCH

Title: Adult Autism Spectrum Disorder Study

Principal Investigator
Emma Atkinson
Department of Biology
214 Shoemaker Hall
University of Mississippi
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Co-Investigator
Hannah K. Allen, PhD
Department of Health, Exercise Science, &
Recreation Management
236 Turner Center
University of Mississippi
hkallen1@olemiss.edu

Description
We are inviting you to participate in this research project because you are currently an employed adult who has been diagnosed with Autism Spectrum Disorder (ASD) in their lifetime. The purpose of this research is to understand the health and employment experiences of adults with ASD. You will be asked to complete an anonymous online survey that asks about individual characteristics, health status, employment experiences, and experiences living with ASD.

Cost and Payments
The survey should take about 10-15 minutes to complete. You may choose to provide your name and email address to be entered into a raffle to win a $15 gift card for participating in this study. Ten participants will be selected to receive an incentive. You will be responsible for any taxes assessed on this compensation.

Risks and Benefits
We do not anticipate any major risks or discomforts involved in participating in this research study, however there may be some discomfort when answering questions about your mental health and experiences living with ASD. It is important to know that all responses will not be linked to any identifying information, and you may choose to skip any question you are not comfortable answering. There are no direct benefits to participating in this study. However, we hope that this research will inform future programming and allocation of resources for adults living with ASD.

Confidentiality
Your responses will be anonymous. You will be assigned a unique ID number, and all data will be stored using password-protected files on a password-protected computer. No one but the research team will have access to collected data, and once all survey responses have been collected and downloaded to a computer, all online responses will be deleted. If we write reports or articles about the findings from this project, your identity will be protected to the maximum extent possible. Your contact information will be collected from you if you choose to enter a raffle to receive an incentive. This information will not be linked in any way to the responses you provide on the survey.

Right to Withdraw
Your participation in this research is completely voluntary. You may choose not to take part at all. If you decide to participate in this research, you may stop participating at any time. If you decide not to participate in this study or if you stop participating at any time, you will not be penalized or lose any benefits to which you otherwise qualify.

If you decide to stop taking part in the study, if you have questions, concerns, or complaints, or if you need to report an injury related to the research, please contact the principal investigator:

Emma Atkinson
Department of Biology
214 Shoemaker Hall
University of Mississippi
epatkins@go.olemiss.edu

IRB Approval
This study has been reviewed by The University of Mississippi's Institutional Review Board (IRB). If you have any questions, concerns, or reports regarding your rights as a participant of research, please contact the IRB at (662) 915-7482 or irb@olemiss.edu.

Statement of Consent
Your consent indicates that you are at least 18 years of age, you have read this consent form or have had it read to you, your questions have been answered to your satisfaction, and you voluntarily agree to participate in this research study. You may print a copy of this consent information for your records.

If you agree to participate, please indicate so by answering the question below.

I have reviewed the informed consent information and consent to participate in this study.
- **Yes, I agree/consent to participate**
- **No, I do NOT agree/consent to participate**

APPENDIX D. RECRUITMENT FLYER

THE UNIVERSITY of MISSISSIPPI

PARTICIPANTS NEEDED

Adult Autism Spectrum Disorder Study

Eligibility Criteria:
18+ years of age
Living and working in the U.S.
Diagnosed with Autism Spectrum Disorder
Employed for pay

Study Information:
This is a one-time, anonymous, online survey that should take about 10-15 minutes to complete. The study aims to understand the health and employment experiences of adults with Autism Spectrum Disorder.

10 people will receive a $15 gift card for participating!

Questions?
Contact the Principal Investigator:
Emma Atkinson
epatkins@go.olemiss.edu

Complete Survey at:
https://tinyurl.com/UMASDStudy

OR Scan QR Code