

Gender Differences in Spending Habits in Young Adults with ADHD:

A Pilot Study

An Undergraduate Honor's Thesis

East Carolina University

In Partial Fulfillment of the Requirements for the Degree

BA, Psychology

By

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Abstract

This study was conducted to determine whether there is a significant relationship between ADHD symptoms and impulsive spending habits between men and women. The *Adult ADHD Self-Report Scale* was used to evaluate participants' ADHD symptoms and the *Buying Impulsiveness Scale* was used to evaluate spending impulsivity. Participants were also asked demographic questions, including whether they are currently diagnosed with and/or medicated for ADHD. The results showed that participants with self-reported ADHD diagnoses showed significantly higher spending impulsivity than those without self-reported ADHD. However, participants who scored higher on the ASRS showed higher, but not significantly higher, scores on the BIS. There were no significant gender differences detected in this sample. Future research should leave data collection open for a longer time frame to collect more responses and should advertise to more diverse populations.

Chapter 1: Introduction

Attention deficit hyperactivity disorder (ADHD) is a common and familiar neurodevelopmental disorder. Most of the research on this disorder, however, has been performed with the male brain in mind. Most of this research focuses on cisgender male presentation of ADHD, with more recent research starting to include and explore the cisgender female presentations. This study begins to answer the question of whether there is a relationship between gender identity and ADHD presentation, specifically in impulsivity when it comes to spending habits. Participants will be students at ECU over the age of 18 and will be eligible whether they have a current diagnosis of ADHD or not. We will recruit participants via flyers and emails, to be posted around campus and sent to campus departments, like the Psychology department and the Honors College. Our survey will include questions from the Adult ADHD Self-Report Scale (ASRS) and the Buying Impulsiveness Scale (BIS), in addition to general demographic information. Participants will simply be asked to complete the survey anonymously and then, in a separate form, put in their name and email for a chance at a \$25 Amazon gift card. The research team will analyze the results after about one week of data collection and compile those results into a final thesis.

Sex Differences in ADHD

Attention deficit hyperactivity disorder (ADHD) is a relatively common neurodevelopmental disorder characterized by symptoms of inattention, hyperactivity, and impulsivity, as stated in the *Diagnostic and Statistical Manual of Mental Disorders* (American Psychiatric Association, 2022). ADHD affects both men and women, but more men are diagnosed with ADHD each year than are women (Stibbe, 2020). ADHD is diagnosed as one of three presentations: inattentive,

hyperactive, or combined. The predominantly inattentive presentation is characterized by the client having difficulty maintaining attention to details and tasks, having trouble listening to others, having difficulty organizing tasks, is often forgetful or distracted, and often loses things. The predominantly hyperactive or impulsive type is characterized by the client fidgeting with their hands and feet often, leaving their seat when being seated is the expectation, feeling restless, talking excessively, answering questions before they've been fully asked, having difficulty waiting their turn, and interrupting others often. The combined presentation is characterized by the client exhibiting symptoms of both the inattentive and hyperactive types for at least the last six months (American Psychological Association, 2022).

It has become clearer over the last few years that ADHD is more prevalent than originally thought. An umbrella study from October 2023 consisting of five meta-analyses found a prevalence of approximately 3.10% in adults, with a Confidence Interval from 2.60% to 3.60% (Ayano et al., 2023). Another umbrella study, published in 2021, which used 40 articles for their analysis, found the prevalence of persistent adult ADHD to be 2.58% (95% CI = 1.51 to 4.45) and that of symptomatic adult ADHD to be 6.76% (95% CI = 4.31 - 10.61) (Song et al., 2021). It's been acknowledged in clinical and academic settings that there is a gap in understanding of the presentation of ADHD in women and girls in many recent studies. In one of such studies, it is said that "the prevalence of ADHD in boys is 2-2.5 times higher than its prevalence in girls," and that by adulthood, this ratio evens out to be closer to equal (Hinshaw et al., 2021).

Diagnostic rates may not tell the full story because biological men and women experience some symptoms of ADHD differently. Studies show that males are more often diagnosed and treated for ADHD than females, which contributes to the gap in accurate information about female presentation of ADHD (Skogli et al., 2013; Klefsjo et al., 2021). Adult men and women

in one study scored similarly on current symptomology and general wakefulness but scored differently on the test of attentional performance (TAP) Go/NoGo paradigm and working memory (Stibbe et al., 2020), with men outperforming women. The current studies analyzing the differences between expression of ADHD in men and women only consider cisgender men and women. Thus, there are many gender identities that have not yet been considered in relation to expression of ADHD symptoms. This study begins to analyze the possibility that there may be a gender difference, not just sex difference, in expression of ADHD in young adults.

For the purposes of this study, both sex and gender are to be considered. The World Health Organization (WHO) defines “gender” as “the characteristics of women, men, girls, and boys that are socially constructed. This includes norms, behaviors and roles associated with being a woman, man, girl or boy, as well as relationships with each other” (World Health Organization, 2023). The WHO defines “sex” as “the different biological physiological characteristics of females, males and intersex persons, such as chromosomes, hormones and reproductive organs,” (World Health Organization, 2023). This study uses the above definitions for the terms, “gender” and “sex.”

ADHD & Impulsive Risk Taking

It is known that college students are more prone to engage in impulsive behavior than other age groups (Cyders et al., 2007). Impulsivity is a known symptom of ADHD. Thus, it makes sense that college students with ADHD show more impulsive behaviors than those without ADHD (Oguchi et al., 2019). It is also a common belief that in general, individuals with ADHD have more issues with their money (Bangma et al., 2019) than those who do not have ADHD. Some studies have shown a correlation between poor financial decision-making and adults with ADHD (Beauchaine et al., 2020; Liao, 2021; Bangma et al., 2019; Bangma et al., 2020).

Individuals with ADHD have been shown to struggle more with paying bills on time, are less likely to have a savings account, and are more likely to have less money at the end of a month (Liao, 2021). “Impulse buying” is defined as the sudden urge and intense emotional desire to buy something immediately (Dias de Aquino et al, 2020). This is the definition that will be used for “impulse buying” in the rest of this study.

Direction of the Study

There have been several studies related to impulsivity as a symptom in ADHD, presentation of ADHD symptoms in biological men and women with ADHD, and spending habits of those adults with ADHD, but there haven’t been many studies that combine all these factors. This study begins to examine methods which can be used to answer the complex question of whether there is a relationship between ADHD in college-aged men and women and their spending habits. Ultimately, the research team is interested in answering the following questions:

1. Do college students with self-reported ADHD exhibit more impulsive spending habits than those without ADHD?
2. Do college aged cisgender women with self-reported ADHD exhibit more impulsive spending habits than college aged cisgender men with ADHD?
3. Does gender identity play a role in the spending habits of young adults with and without ADHD?

The purpose of this pilot study is to conduct a small-scale survey to test the quality of the *ASRS* as a screener for ADHD. We will also examine whether the *BIS* scale has sufficient variability in ratings among the respondents.

Chapter 2: Methods

Participants

The participants for this study were recruited from the East Carolina University (ECU) student population. Participants were eligible to participate whether they had been professionally diagnosed with ADHD or not. Exclusionary criteria included if they were younger than 18 years old or were not students of ECU. The research team collected survey data from 61 participants for this pilot study. Five participant responses were excluded from final analysis due to the following reasons: One survey was completed too quickly to be deemed reliable (<1 min). Three self-reported being less than 18-years-old, and one survey had nonsensical responses that suggested unreliable data. Thus, the final sample was 56 college students. Participant demographics are reported in the Results section.

Participants were asked to complete an anonymous online survey on Qualtrics that included the *Adult ADHD Self Report Scale*, *Buying Impulsivity Scale*, one question to ask if they have a current diagnosis of ADHD from a medical or psychological professional, one question to determine if they are currently taking prescription medications for their ADHD (if they are already diagnosed by a professional), a question asking if they have any comorbid psychological disorders, and questions regarding demographic information.

Measures

The *Adult ADHD Self Report (ASRS)* scale is used as a tool to assess ADHD symptoms in adults but is not meant to be the only tool used to make a diagnosis. There are two versions of this scale: the shortened, six-question version and the full, 18 question version. The full version covers questions regarding the main symptoms of adult ADHD as stated in the DSM-5, including

hyperactivity, inattentiveness, and impulsivity. This scale is the official screening instrument of the World Health Organization (WHO) and is the most used survey to measure current ADHD symptoms in adults (Kessler, 2005). As the WHO found the six-question screener to out-perform the full version, this study will use the shortened form to gather data. An article from 2019 uses the same scale we will use, the six-question version of the ASRS screener. This study utilizes the scoring technique used by a New York University version of the ASRS six-question screener, in which selecting four or more options indicates symptoms consistent with Adult ADHD (see Appendix C).

The other scale used in this study, the *Buying Impulsiveness Scale* (see Appendix D) is a scale with only nine items (Rook and Fisher, 1995). It was created to measure buying impulsiveness and was curated from a review on prior research of impulse buying and literature on general impulsivity. Rook and Fisher's 1995 study confirmed the scale has a Cronbach's alpha of .88 and all t-values exceed 9.0 ($p < .001$). The scale's nine items are scored on a Likert scale, with each question being rated from one (strongly disagree) to five (strongly agree). The total possible range for the scale is 9 to 45, and the original study observed a range of 9 to 43 when tested with 212 college students (Rook and Fisher, 1995). Higher scores on the scale indicate a higher likelihood of spending money impulsively.

Procedure

Once IRB approval was attained (see appendix A), participants were recruited through flyers designed by the research lab group and posted around campus and on social media (see appendix B). These flyers were also sent to several courses in the Psychology department at ECU. These flyers had a QR code on them that directed the participant to the Qualtrics survey. The survey included the ASRS and *Buying Impulsiveness Scale*, a question about whether the participant has

a current diagnosis of ADHD from a medical professional, a question about whether the participant is currently taking prescription medication for their ADHD, and questions regarding demographic information (this included biological sex, gender identity, race, age, and sexual orientation) (see Appendix E). To maintain their anonymity, participants were not asked for any identifying information in the first survey.

For recruitment purposes, participants were put into a raffle drawing for an Amazon gift card of \$25. There will be ten total drawings of gift cards, equaling \$250 total to be raffled away. To be put into the drawing, they were redirected to a Microsoft Form after they completed the survey to put in their name and email, thus ensuring they could receive their gift card if their name was randomly chosen in the drawing.

Data Analysis

We examined the correspondence (percent agreement) between self-reported ADHD diagnosis and one's ratings on the ASRS v1.1. The second purpose of the pilot is to determine if the BIS has sufficient variability to detect different levels of spending habits. This was examined via descriptive statistics (mean & standard deviation). Given there were enough ADHD and non-ADHD participants (including both cisgender men & women), preliminary analyses of the main research questions were done.

To answer the first research question, "Do college students with self-reported ADHD exhibit more impulsive spending habits than those without ADHD?" A t-test was done with self-reported ADHD diagnosis as the grouping variable and *Buying Impulsiveness Scale* scores as the dependent variable. The question was also examined using one's ratings on the ASRS v1.1 to determine ADHD status, and again using the BIS as the outcome variable. To answer the second

research question, “Do college aged cisgender women with self-reported ADHD exhibit more impulsive spending habits than college aged cisgender men with ADHD?” a t-test was done with the self-reported ADHD, in addition to participants’ sex responses, as the grouping variable and *Buying Impulsiveness Scale* scores as the dependent variable.

Chapter 3: Results

Descriptive Statistics

After almost one week of data collection, the research team collected a total of 61 responses. As previously mentioned, the research team excluded responses that took less than one minute to take, responses from survey participants who were younger than 18-years-old, and one response which was obviously fake. A total of five responses were removed, leaving the research team with 56 total responses to evaluate.

The mean age of 53 of the respondents (three didn't include their age in the survey) was 20.7 years old, with a standard deviation of 1.8 years. The youngest participant was 18 years old and the oldest was 29 years old. On the ASRS, the average score was a 3.9 (out of 6.0) with a standard deviation of 1.9. The minimum score was 0.0 and the highest was 6.0. The average score on the BIS scale was 30.3 with a standard deviation of 9.5. The minimum score was 9.0 and the highest score was 45.0 (see Table 1).

Table 2, below, outlines the frequencies for the demographic questions. When asked their race, 66.1% of participants responded "White," while 10.7% responded "Black or African American," 7.1% responded "American Indian or Alaska Native," 3.6% responded "Asian," 7.1% responded "Latinx," 5.4% responded "Other," and two responded "Mixed." When asked about their gender expression, 14.5% chose "cis-Male," 78.2% chose "cis-Female," 1.8% chose "Trans male," 3.6% chose "Nonbinary," and 1.8% chose "Other." When asked whether participants had a current medical or psychological diagnosis of ADHD, 37.5% responded "Yes," and 62.5% responded, "No." From the ASRS scores, 33.9% of participants scored above a four on the scale, while 66.1% scored lower than a four. When asked whether participants were

currently medicated for ADHD, 19.6% responded “Yes,” 44.6% responded “No,” and 35.7% responded they did not have a diagnosis of ADHD (see Table 2).

Table 1: Descriptive Statistics

	Your current age	ASRSscore	Score
Valid	53	56	56
Missing	3	0	0
Mean	20.698	3.893	30.250
Std. Deviation	1.835	1.875	9.543
Minimum	18.000	0.000	9.000
Maximum	29.000	6.000	45.000

Table 2: Demographic Frequencies

Variable	Level	Counts	Total	Proportion	p
Please select your race. - Selected Choice	1	37	56	0.661	0.022
	2	6	56	0.107	< .001
	3	4	56	0.071	< .001
	4	2	56	0.036	< .001
	6	4	56	0.071	< .001
	7	3	56	0.054	< .001
	Please select your race. - Other - Text	Mixed	1	2	0.500
Mixed Afro-Latino		1	2	0.500	1.000
Please select your sex.	1	8	56	0.143	< .001
	2	48	56	0.857	< .001
Please select the gender expression that best describes you.	1	8	55	0.145	< .001
	2	43	55	0.782	< .001
	3	1	55	0.018	< .001
	6	2	55	0.036	< .001
	7	1	55	0.018	< .001
Do you currently have an ADHD diagnosis from a professional?	1	21	56	0.375	0.081
	2	35	56	0.625	0.081
ADHD_ASRS	0	19	56	0.339	0.022
	1	37	56	0.661	0.022
Are you currently medicated for ADHD?	1	11	56	0.196	< .001
	2	25	56	0.446	0.504
	3	20	56	0.357	0.044

Note. Proportions tested against value: 0.5.

Hypothesis Testing

To address the first research question, which was “Do college students with self-reported ADHD exhibit more impulsive spending habits than those without ADHD?” a t-test was conducted with a diagnosis of ADHD used as the grouping variable and BIS scores being the dependent variable. Participants who self-reported a diagnosis of ADHD ($M = 33.7, SD = 9.2$) compared to the participants who did not self-report a diagnosis of ADHD ($M = 28.2, SD = 9.3$) demonstrated significantly higher mean scores on the BIS, $t(54) = 2.174, p = .034$ (see Table 3).

Another t-test was run with the same dependent variable, but with participants scoring above a four on the ASRS as the grouping variable. There was no significant effect for ASRS scores, $t(54) = -1.771, p = 0.082$, even though those with lower ASRS scores ($M = 27.158, SD = 9.353$) had slightly lower BIS scores than those with higher ASRS scores ($M = 31.838, SD = 9.368$) (see Table 4).

To address the second research question, which was “Do college aged cisgender women with self-reported ADHD exhibit more impulsive spending habits than college aged cisgender men with ADHD?” a t-test was conducted. There was no significant effect for sex, $t(54) = -0.159, p = 0.87$, despite women ($M = 30.3, SD = 9.5$) scoring slightly higher on the BIS than men ($M = 29.8, SD = 10.7$) (see Table 5).

Table 3. T-Test Results, “Do college students with self-reported ADHD exhibit more impulsive spending habits than those without ADHD?” (Self-Report ADHD Diagnosis)

Independent Samples T-Test: DX of ADHD on BIS scores

Independent Samples T-Test

	t	df	p	Cohen's d	SE Cohen's d
Score	2.174	54	0.034	0.600	0.291

Note. Student's t-test.

Descriptives

Group Descriptives

	Group	N	Mean	SD	SE	Coefficient of variation
Score	1	21	33.714	9.193	2.006	0.273
	2	35	28.171	9.259	1.565	0.329

Table 4. T-Test Results, “Do college students with self-reported ADHD exhibit more impulsive spending habits than those without ADHD?” (ASRS Scores)

Independent Samples T-Test: ASRS Y/N ADHD on BIS scores

Independent Samples T-Test

	t	df	p	Cohen's d	SE Cohen's d
Score	-1.771	54	0.082	-0.500	0.294

Note. Student's t-test.

Descriptives

Group Descriptives

	Group	N	Mean	SD	SE	Coefficient of variation
Score	0	19	27.158	9.353	2.146	0.344
	1	37	31.838	9.368	1.540	0.294

Table 5. T-Test Results, “Do college aged cisgender women with self-reported ADHD exhibit more impulsive spending habits than college aged cisgender men with ADHD?”

Independent Samples T-Test: Sex differences on BIS scores

Independent Samples T-Test

	t	df	p	Cohen's d	SE Cohen's d
Score	-0.159	54	0.875	-0.061	0.382

Note. Student's t-test.

Descriptives

Group Descriptives

	Group	N	Mean	SD	SE	Coefficient of variation
Score	1	8	29.750	10.687	3.778	0.359
	2	48	30.333	9.461	1.366	0.312

Chapter 4: Discussion

Review of the Findings

The survey responses were almost what the research team expected to see. There was a higher average ASRS score than we anticipated and less men and individuals with gender expressions which weren't their assigned sex than expected. There was a higher average score on the BIS in the participants with self-reported ADHD than in those without self-reported ADHD, which was expected. There were more women who took the survey than men, and participants were predominantly White, both of which scenarios were expected. There was not an obvious difference in BIS scores due to sex differences, which was not expected by the research team.

There hasn't been much previous research with all the variables used in this study, but there has been research for the BIS in college populations. In Rook and Fisher's article (1995), 212 college students were surveyed, and the results showed a similar range in scores (their range was 9 to 43, this study's range was from 9 to 45) and a slightly lower mean score and standard deviation ($M = 25.1$, $SD = 7.4$) than this study ($M = 30.3$, $SD = 9.5$). There is one possible reason for the difference between these results that stands out to the research team. In the original study by Rook and Fisher, only undergraduate business students were surveyed. However, in this study, it was open to all East Carolina University students over the age of 18. Students in the business major must take more economic and finance classes, which may have decreased their scores on the BIS. With this study being open to all students, regardless of their undergraduate major, there was availability for students who aren't interested in finances to be part of this research.

This study did not detect any significant sex differences on the BIS. This could be for many reasons, one of which being that the survey participants were predominantly female. In the

study, only eight respondents identified their sex as male, leaving the other 48 to be female. Another possible reason could be that there simply aren't significant differences in financial impulsivity, regardless of ADHD diagnosis or presence of symptoms, between biological men and women.

In Qualtrics, through which the survey was created for this study, the scoring for the ASRS questions was not correct when we ran the survey and we had to re-code them during our data analysis phase. Qualtrics automatically scored each point on a Likert scale, which is what the scale is, but the scoring is different. The scale used in this study is in Appendix C, and in this scale, only certain responses are scored. In data analysis, the research team reassigned "0" or "1" for responses, where "0" was a response that was not shaded in the scale from Appendix C, and "1" is a shaded response in Appendix C. Future research should ensure that the scoring is done properly in the original software to avoid inadvertent coding errors during data analysis.

Limitations

The major limitations of this study are a lack of participants with non-cisgender gender expressions and too few participants in general. The original goal of this study was to incorporate gender identity into psychological research due to a lack of information about gender identity effects in this field, but there were only two respondents out of 56 total who did not identify as either cisgender male or cisgender female. There were very few responses in general for a few reasons: The survey was only open for data collection for a week before needing to submit this thesis for graduation requirements, and the survey was not supposed to be sent to listservs of certain ECU departments, per the Institutional Review Board, without extra layers of approval that were time prohibitive for this study timeline. If those issues had been resolved in time, this

study would have had more responses of greater diversity in gender identity because we could have specifically targeted recruitment to the university's LGBTQ center.

Direction for Future Research and Practice

These results suggest that additional research is necessary on the topic of ADHD and finances. Additional research may lead to better practices in educating those with ADHD about good financial habits, like budgeting, at a younger age. For example, a required college class about personal finance and economics, specifically designed to benefit those who are more likely to struggle with those topics, would be incredibly helpful for those with ADHD (diagnosed or not). East Carolina University already has a recommended freshman class; it would be beneficial to add even just a section about personal finance to this course. Future research on this topic should have a longer window for data collection and advertise to different populations, like specifically sending flyers to Disability Support Services and LGBTQ Centers on college campuses. This would also be incredibly interesting to extend to older and younger populations, like high school students, middle-aged, and senior adults.

Conclusion

In summary, the research team found that people with self-reported ADHD scored higher on the *Buying Impulsiveness Scale*, indicating higher spending impulsivity, but there was no significant sex difference. It makes sense that those with self-reported ADHD are more impulsive with their spending because two of the hallmark characteristics of ADHD are impulsivity and hyperactivity. The lack of sex differences could be for many reasons, including a general lack of difference between men and women or that there simply weren't enough men in the sample to show a significant difference. This could be remedied by advertising to more populations and keeping data collection open for longer than one week.

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Appendix A. IRB Approval for the Study

12/5/23, 5:25 PM

epirate.ecu.edu/App/sd/Doc/0/A1009V47MK8USVTAHQVP0LIG00/fromString.html



EAST CAROLINA UNIVERSITY
University & Medical Center Institutional Review Board
Willis Building · Mail Stop 682
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Notification of Exempt Certification

From: Social/Behavioral IRB
To: [Caroline Sartain](#)
CC: [Christy Walcott](#)
Date: 11/20/2023
Re: [UMCIRB 23-002189](#)
Gender Differences in Spending Habits in Young Adults with ADHD

I am pleased to inform you that your research submission has been certified as exempt on 11/18/2023. This study is eligible for Exempt Certification under category # 2b.

It is your responsibility to ensure that this research is conducted in the manner reported in your application and/or protocol, as well as being consistent with the ethical principles of the Belmont Report and your profession.

This research study does not require any additional interaction with the UMCIRB unless there are proposed changes to this study. Any change, prior to implementing that change, must be submitted to the UMCIRB for review and approval. The UMCIRB will determine if the change impacts the eligibility of the research for exempt status. If more substantive review is required, you will be notified within five business days.

Document	Description
Gender Differences in Spending Habits in Young Adults with ADHD Research Flyer.pdf(0.01)	Recruitment Documents/Scripts
Gender Differences in Spending Habits in Young Adults with ADHD.docx (1).pdf(0.01)	Study Protocol or Grant Application
Gender Differences in Spending Habits in Young Adults with ADHD.pdf(0.01)	Surveys and Questionnaires
Gender Differences in Spending Habits in Young Adults with ADHD.pdf(0.01)	Consent Forms

For research studies where a waiver or alteration of HIPAA Authorization has been approved, the IRB states that each of the waiver criteria in 45 CFR 164.512(i)(1)(i)(A) and (2)(i) through (v) have been met. Additionally, the elements of PHI to be collected as described in items 1 and 2 of the Application for Waiver of Authorization have been determined to be the minimal necessary for the specified research.

The Chairperson (or designee) does not have a potential for conflict of interest on this study.

IRB00000705 East Carolina U IRB #1 (Biomedical) IORG0000418
IRB00003781 East Carolina U IRB #2 (Behavioral/SS) IORG0000418

Appendix B. Flyer used for Advertisement.

Walcott Research Lab

Research Survey on Gender Differences in Spending Habits in Young Adults with ADHD!

We're looking for ECU students over the age of 18 to take this survey for an Honors undergraduate research project. This is open to all students, whether you have a diagnosis of ADHD or not.

Scan the QR Code below to take the survey!

If you take the survey, you can choose to be entered in a drawing for a \$25 Amazon gift card!



Please email Dr. Christy Walcott at walcottc@ecu.edu or call 252-328-1378 for study-related questions. Call the University & Medical Center Institutional Review Board at 252-744-2914 for questions about your rights as a research participant.

Appendix C. Adult ADHD Self-Report Scale

Are you living with Adult ADHD? The questions below can help you find out.

Many adults have been living with Adult Attention-Deficit/Hyperactivity Disorder (Adult ADHD) and don't recognize it. Why? Because its symptoms are often mistaken for a stressful life. If you've felt this type of frustration most of your life, you may have Adult ADHD – a condition your doctor can help diagnose and treat.

The following questionnaire can be used as a starting point to help you recognize the signs/symptoms of Adult ADHD but is not meant to replace consultation with a trained healthcare professional. **An accurate diagnosis can only be made through a clinical evaluation.** Regardless of the questionnaire results, if you have concerns about diagnosis and treatment of Adult ADHD, please discuss your concerns with your physician.

This Adult Self-Report Scale-VI.1 (ASRS-VI.1) Screener is intended for people aged 18 years or older.

Adult Self-Report Scale-VI.1 (ASRS-VI.1) Screener from WHO Composite International Diagnostic Interview © World Health Organization

Date					
<p><i>Check the box that best describes how you have felt and conducted yourself over the past 6 months. Please give the completed questionnaire to your healthcare professional during your next appointment to discuss the results.</i></p>	Never	Rarely	Sometimes	Often	Very Often
1. How often do you have trouble wrapping up the final details of a project, once the challenging parts have been done?					
2. How often do you have difficulty getting things in order when you have to do a task that requires organization?					
3. How often do you have problems remembering appointments or obligations?					
4. When you have a task that requires a lot of thought, how often do you avoid or delay getting started?					
5. How often do you fidget or squirm with your hands or feet when you have to sit down for a long time?					
6. How often do you feel overly active and compelled to do things, like you were driven by a motor?					
<p><i>Add the number of checkmarks that appear in the darkly shaded area. Four (4) or more checkmarks indicate that your symptoms may be consistent with Adult ADHD. It may be beneficial for you to talk with your healthcare provider about an evaluation.</i></p>					

The 6-question Adult Self-Report Scale-Version I.1 (ASRS-VI.1) Screener is a subset of the WHO's 18-question Adult ADHD Self-Report Scale-Version I.1 (Adult ASRS-VI.1) Symptom Checklist.

ASRS-VI.1 Screener COPYRIGHT © 2003 World Health Organization (WHO). Reprinted with permission of WHO. All rights reserved.

Appendix D. Buying Impulsiveness Scale

TABLE 1
BUYING IMPULSIVENESS SCALE: STUDY 1

Item	Factor loading	Mean	SD
1. I often buy things spontaneously.	.81	3.08	1.18
2. "Just do it" describes the way I buy things.	.75	2.65	1.17
3. I often buy things without thinking.	.73	2.33	1.19
4. "I see it, I buy it" describes me.	.71	2.35	1.15
5. "Buy now, think about it later" describes me.	.65	2.25	1.20
6. Sometimes I feel like buying things on the spur-of-the-moment.	.64	3.40	1.04
7. I buy things according to how I feel at the moment.	.63	3.17	1.19
8. I carefully plan most of my purchases.*	.62	2.81	1.16
9. Sometimes I am a bit reckless about what I buy.	.60	2.99	1.08

NOTE.— $n = 212$. Possible range for scale: 9–45; observed scale range: 9–43; $\bar{X} = 25.1$; $SD = 7.4$; $\alpha = .88$. Response format: 1 = strongly disagree; 5 = strongly agree.

*Reverse-coded item.

Appendix E. Copy of Qualtrics Survey questions

Research Survey - Gender Differences in Spending Habits in Young Adults with ADHD

Start of Block: Block 0

0. You are being invited to participate in a research study titled “Gender Differences in Spending Habits in Young Adults with ADHD,” being conducted by Caroline Sartain, a student at East Carolina University in the Psychology department. The goal is to survey 50 individuals in/at East Carolina University. The survey will take approximately five minutes to complete. It is hoped that this information will assist us to better understand whether there is a relationship between ADHD, gender expression, and buying impulsivity. Your responses will be kept confidential and no data will be released or used with your identification attached. Your participation in the research is voluntary. You may choose not to answer any or all questions, and you may stop at any time. We will be able to pay you for the time you volunteer while being in this study. At the completion of the survey, you will have the choice to put your name in a separate Microsoft Form for the chance at a \$25 Amazon gift card. There will be ten total names drawn, and the gift cards will be distributed at the conclusion of the study. There is no penalty for not taking part in this research study. Please call Caroline Sartain at 252-342-2596 for any research related questions or the University & Medical Center Institutional Review Board (UMCIRB) at 252-744-2914 for questions about your rights as a research participant.

Please select “yes” if you consent to participating, and “no” if you do not.

- Yes (1)
- No (2)

End of Block: Block 0

Start of Block: Demographics

1. Your current age

2. Please select your race.

- White (1)
- Black or African American (2)
- American Indian or Alaska Native (3)
- Asian (4)

- Native Hawaiian or Pacific Islander (5)
- Latinx (6)
- Other (7) _____

3. Please select your sex.

- Male (1)
- Female (2)

4. Please select the gender expression that best describes you.

- Cis-Male (1)
- Cis-Female (2)
- Trans male (3)
- Trans female (4)
- Gender-fluid (5)
- Nonbinary (6)
- Other (7)

End of Block: Demographics

Start of Block: ADHD pt. 1

5. Do you currently have an ADHD diagnosis from a professional?

- Yes (1)
- No (2)

6. Are you currently medicated for ADHD?

- Yes (1)
- No (2)
- I do not have a diagnosis of ADHD. (3)

7. Do you have any other diagnosed psychological disorders?

- Yes (1)
- No (2)
- I don't have any diagnosed psychological disorders. (3)

End of Block: ADHD pt. 1

Start of Block: ADHD pt. 2

8. Please answer each item to the best of your ability.

	Never (1)	Rarely (2)	Sometimes (3)	Often (4)	Very often (5)
How often do you have trouble wrapping up the final details of a project, once the challenging parts have been done? (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
How often do you have difficulty	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

getting things
in order when
you have to
do a task that
requires
organization?
(2)

How often do
you have
problems
remembering
appointments
or
obligations?
(3)

When you
have a task
that requires a
lot of thought,
how often do
you avoid or
delay getting
started? (4)

How often do
you fidget or
squirm with
your hands or
feet when you
have to sit
down for a
long time? (5)

How often do
you feel
overly active
and
compelled to
do things like
you were
driven by a
motor? (6)

End of Block: ADHD pt. 2

Start of Block: Buying Impulsivity

9. Please answer each item to the best of your ability.

	Strongly disagree (1)	Somewhat disagree (2)	Neither agree nor disagree (3)	Somewhat agree (4)	Strongly agree (5)
I often buy things spontaneously. (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
"Just do it" describes the way I buy things. (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I often buy things without thinking. (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
"I see it, I buy it" describes me. (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
"Buy now, think about it later" describes me. (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Select "neither agree nor disagree." (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sometimes I feel like buying things on the spur-	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

of-the-
moment. (7)

I buy things
according to
how I feel at
the moment.I
buy things
according to
how I feel at
the moment.
(8)

I carefully
plan most of
my purchases.
(9)

Sometimes I
am a bit
reckless about
what I buy.
(10)

End of Block: Buying Impulsivity