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Kristen Pyke
Syracuse University

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Public Stigma in College Students Diagnosed with Attention Deficit / Hyperactivity Disorder
(ADHD)

A Capstone Project Submitted in Partial Fulfillment of the
Requirements of the Renée Crown University Honors Program at
Syracuse University

Kristen Pyke
Candidate for B.A. Degree
and Renée Crown University Honors
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Honors Capstone Project in Psychology

Capstone Project Advisor: _____
Kevin Antshel, Associate Professor of Psychology

Capstone Project Reader: _____
Leonard Newman, Associate Professor of Psychology

Honors Director: _____
Stephen Kuusisto, Director

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Abstract

Previous research has examined both ADHD and public stigma as well as ADHD and malingering in college students. Nonetheless, to date, no research has examined all three variables simultaneously. To explore these relationships, we investigated college students' opinions of ADHD and hypothesized that there will be a hierarchical pattern of public stigma: typical college students will report the most while college students with ADHD will report the least and the malingering group will fall between the two. The participants consisted of 106 undergraduate students that completed a questionnaire that was developed to assess opinions of mental health diagnoses (depression, ADHD), "normal troubles," their opinions towards mental health treatment as well as an ADHD stigma scale. Some of the students were given the questionnaire while another group was coached to feign or malingering ADHD and then to complete the questionnaire. The results of the study were consistent with hypotheses: typical college students had the most stigma towards ADHD; whereas, ADHD students had the least stigma and malingering students were between the two. These results suggest that public stigma may be a variable when considering why malingering of ADHD occurs. Future research should consider the extent to which low levels of stigma increase the likelihood of malingering in college students.

Executive Summary

The study is about understanding mental health stigma and malingering of Attention Deficit Hyperactivity Disorder (ADHD). ADHD is a neurodevelopmental disorder that is characterized by having impairing hyperactive-impulsive and/or inattentive symptoms in more than one setting. ADHD is commonly diagnosed in childhood but in the majority of cases persists into adulthood.

Stigma has many different forms including public stigma, courtesy stigma, and self-stigma. Public stigma is characterized as stereotypes, prejudice, and discrimination. Courtesy stigma is when a person related to a person who is stigmatized is discriminated against. Self-stigma is when a person believes the stereotypes, prejudice and discrimination and relates them to himself. Stigma towards mental health patients can affect their treatment adherence, self-esteem, and quality of life.

In college students, ADHD is less reluctantly pursued than other disorders including depression, substance abuse, etc. That college students are less reluctant to pursue an ADHD diagnosis may be because the college student can obtain stimulant medication and/or academic accommodations with a positive diagnosis. These extra services provide college students with an incentive to obtain an ADHD diagnoses, and because of these perceived benefits, college students are more likely than other populations to feign ADHD, also known as malingering. Much research on college students malingering ADHD has been conducted, but not many studies have examined how public stigma may relate to malingering.

To better explore this relationship, we conducted a study with three groups (typical college students, college students diagnosed with ADHD, college student coached to feign ADHD). Our hypothesis was that there will be a hierarchical pattern of public stigma: typical college students will report the most stigma, while ADHD college students will report the least stigma and the malingering group will report between the two other groups. All the participants completed a questionnaire that was designed to assess opinions of mental health diagnoses (depression, ADHD); opinions of “normal troubles,” by use of vignettes; and opinions towards treatment along with an ADHD stigma scale. The typical college students and ADHD group were given the questionnaire, but the college students that were coached to feign ADHD had to be taught how to feign ADHD before they completed the questionnaire. The coached participants received a pseudo webpage that included top Internet searches of ADHD information. They were allotted five minutes to look over the information and take notes. When they finished taking the notes, the pseudo webpage was removed, and they were given the questionnaire. Throughout their completion of the questionnaire, they were reminded that they needed to convince the researcher they have ADHD. When all groups were finished, they were allowed to leave. They were also awarded partial course credit for their involvement if they were recruited from the Introduction to Psychology class. If they were not course members, they received a \$15 gift card.

Results indicated that college students could be successfully coached to malingering ADHD, which reflected the same results found in previous studies. Similar to these studies, our malingering participants reported comparable levels of inattentive symptoms, yet higher levels of hyperactivity/impulsivity symptoms compared to college students with ADHD. Results also indicated that the participants that were coached how to malingering symptoms of ADHD became

primed and misidentified all of the vignettes as ADHD instead of other disorders or “normal troubles.” Finally, we found that public stigma towards ADHD had a hierarchical effect as initially hypothesized. Typical college students had the most stigma towards ADHD; whereas, students with ADHD had the least stigma towards the disorder, and the malingering group had stigma towards ADHD that measured somewhere between the first two groups.

The study helped researchers to potentially gain a better understanding of stigma within college student populations and how stigma may relate to ADHD and malingering of ADHD. This is a novel study because no previous studies have evaluated the relationship between malingering and stigma.

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Public Stigma in College Students Diagnosed with Attention Deficit / Hyperactivity Disorder (ADHD)

Attention Deficit / Hyperactivity Disorder (ADHD)

Attention-deficit/Hyperactivity Disorder (ADHD) is a neurodevelopmental disorder often initially diagnosed in childhood. This disorder is characterized by having impairing hyperactive-impulsive and/or inattentive symptoms in more than one setting. This disorder can cause many difficulties for not only the child but also for the parents or caregivers. It can also create problems for the individuals that are associated with the child in multiple settings, creating the potential for stigma development.

ADHD persists into adulthood for the majority of cases (American Psychiatric Association [APA], 2013). The validity of adult ADHD is widely accepted as exemplified by a) the addition of adjusted diagnostic criteria for adults in the fifth edition of the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-5; APA, 2013); b) the fact that the FDA has approved medications for treating ADHD in adults; c) the World Health Organization's endorsement of the Adult Self Report Scale as a tool for screening ADHD in adults; and d) reviews of the neurobiology, genetics, clinical features and treatment response of adults with ADHD.

Stigma

Different forms of stigma exist, including public stigma, courtesy stigma, and self-stigma. Public stigma is viewed as stereotypes, discrimination, and prejudice. Courtesy stigma is defined as when a person related to the stigmatized person is discriminated against. Self-stigma is when an individual starts to believe the stereotype about himself and believes he exhibits the

stereotypes. For example, Bussing and Mehta (2013) explain that stigmas directed towards individuals diagnosed with psychological disorders can affect their self-esteem, quality of life, and treatment adherence. Stigma may potentially have impacts on treatment, especially treatment adherence, for individuals diagnosed with ADHD. Therefore, it is important to study and understand stigma in ADHD.

Stigma and ADHD

The questions of stigma and its relation to ADHD led researchers to develop a questionnaire to measure these two factors together. Kellison, Bussing, Bell and Garvan (2010) developed the 26-item ADHD Stigma Questionnaire (ASQ) from a previous 40-item HIV stigma scale. The ASQ can be broken into three subscales: Disclosure concerns, negative self-image, and concerns with public attitudes. Kellison et al. (2010) concluded that the ASQ is a valid and reliable instrument for measuring stigma in ADHD.

Bell, Long, Garvan, and Bussing (2011) further investigated the ASQ by administering the scale to teachers with and without special education certificates. Bell et al. (2011) found that teachers holding special education certificates ADHD are less likely to stigmatize students with ADHD than teachers that did not hold special education certificates. The researchers concluded that teachers holding special education certificates have more personal experiences with students who have ADHD and would therefore be more attuned to the stigma that these students may receive.

Bussing et al. (2012) examined the perceptions that adolescents, parents, health care professionals, and teachers have regarding ADHD treatments. The researchers provided these three groups with survey items that included a vignette and open-ended questions about past

ADHD treatment experiences. Results indicated that the adolescents did not see a need for any treatments. Embarrassment was not significantly associated with willingness to use medications for ADHD; whereas, ADHD counseling and short-acting stimulant medications (which need to be taken multiple times per day) were associated with perceived stigma. This study presents a better understanding of the potential impact of stigma as an underlying cause for adolescent's failure to adhere to treatment recommendations.

Law, Sinclair, and Fraser (2007) examined how peers view children with a diagnostic label (ADHD). Law et al. (2007) provided child participants with vignettes depicting a genderless child, "Anon," that had symptoms of ADHD. At the end of the vignette there was one sentence stating that Anon either had a diagnosis or no diagnosis; for example "Anon has Attention Deficit Hyperactive" (p. 101). Law et al. (2007) asked the participants questions about the vignette and the researchers also gave participants behavior intention and attitude questionnaires. The results from this study found that regardless of whether or not Anon had a "label," child participants had negative attitudes and behavior intentions towards Anon. This study provides more evidence for the negative beliefs that are held against children diagnosed with ADHD, even if they only have the symptoms and not a diagnosis.

O'Driscoll, Heary, Hennessy, and McKeague (2012) examined public stigma against children with ADHD, depression, and "normal issues." The children were randomly assigned to read one of the vignettes depicting ADHD, depression, and "normal issues." Researchers also tested the children's implicit and explicit beliefs towards the child depicted in the vignette. The researchers found that ADHD is more explicitly stigmatized than depression. They also found that adolescents, when compared to children, had more prejudice towards depression and ADHD, but especially ADHD. The researchers also examined causation and found that peers

with ADHD were seen as having more responsibility for their disorder than children with depression and children with “normal issues.” Walker, Coleman, Lee, Squire, and Friesen (2008) also reported that Depression and ADHD evoked more stigmatization than asthma. Walker et al. (2008) also established that the participants found the individuals portrayed in the vignettes with depression and ADHD were perceived to be more violent and to engage in more antisocial behavior.

Martin, Pescosolido, Olafsdottir, and McLeod (2007) also examined public stigma in regard to social distance and how parents would feel towards children with ADHD, depression, asthma, and “normal troubles.” The researchers found that preference for social distance was higher for ADHD (20%) and depression (19%) than asthma (6%) and “normal troubles” (9%). Another study done by Pescosolido, Fettes, Martin, Monahan, and McLeod (2007) examined whether or not children with these issues were perceived as dangerous towards themselves or others. The researchers found that participants saw a child with ADHD (33%) or depression (81%) more dangerous towards self or others compared to a child with asthma (15%) or “normal troubles” (13%). They also found that participants were more likely to persuade children to receive treatment for depression (35%) or asthma (42%) than for ADHD or “normal troubles.” Very few participants were willing to force a child with ADHD to receive outpatient (17%), medication (12%), or inpatient treatment (11%). The disparity between the perceived dangerousness of a child with ADHD and the lack of a perceived need for treatment is compelling and suggests that there may be stigma against ADHD treatments.

Another study done by Pescosolido et al. (2008) examined beliefs about ADHD, depression, asthma, and “normal troubles.” The researchers found that ADHD (41.9%) and depression (58.5%) were correctly identified. They also found that the participants reported that

ADHD (38.4%) and depression (83.6%) were both identified as being very serious but depression was reported as being three times more serious than ADHD.

There has not been much research done regarding self-stigma and ADHD in adults. However, one study done by Waite and Tran (2010) examined post-secondary minority students and their cultural views of ADHD. The researchers found that ADHD stigma is why most of the participants did not seek support or services through their college or university.

This above research is crucial to understanding how stigmatized views of children and adolescents with ADHD can be minimized and how clinicians can better understand stigma with ADHD in order to provide better treatment for stigmatized individuals. Nonetheless, there has been far less research on ADHD stigma in college students.

ADHD in college students

Despite the considerable validity of adult ADHD, diagnosing the disorder among college students is challenging. Unlike most adults, college students have two clear incentives to over-report ADHD symptoms. Some students seek stimulant medication for cognitive enhancement or to help them stay up late studying. Others seek academic accommodations in the hope of boosting their grades. A great deal of attention has been given to the potential misuse of stimulant medication in the college population, due to the fact that stimulant medication is believed to enhance cognitive performance, even in individuals without ADHD (Diller, 2010; DuPaul et al., 2009; Green & Rabiner, 2012; Sepulveda et al., 2011). Similarly, an increasing number of college students with ADHD have been seeking special accommodations, such as extended time on tests/assignments and note-taking services (Sullivan, May, & Galbally, 2007). About 25% of students receiving disability support services receive them for ADHD (Weyandt

& DuPaul, 2006). These services have allowed many students who truly have ADHD to be successful in college; however, the possibility of accommodations and or stimulant treatment creates an incentive for college students to feign ADHD symptoms, which is known as malingering.

Malingering

Malingering is defined in the *Diagnostic and Statistical Manual (DSM) 5th* edition as having exaggerated psychological and physical symptoms motivated by external gain, which includes avoiding work, financial benefits, military duty, and criminal offenses. Slick, Sherman, and Iverson (1999) have been studying how to make the definition of malingering more concrete than how the DSM – IV has defined the condition. These researchers have used different methods to test if an individual is malingering. One that has had mixed successful results is neuropsychological testing, which includes symptom validity tests (SVTs). These tests have widespread use for assessing malingering; yet, the percentage of false negatives and false positives for malingering has been cited as problematic.

Currently, clinicians have no validated method for separating true ADHD from feigned ADHD. Musso and Gouvier (2014) discuss research that analyzes individuals' abilities to feign ADHD symptoms and the apparent ease with which ADHD can be faked. Although some research documents the ability of individuals to malingering ADHD symptoms, assessments that are currently used to assess the malingering of ADHD symptoms have not demonstrated adequate sensitivity and specificity for detecting feigned ADHD.

The Present Study

It is important to better understand the relationships between mental health stigma (which has been reliably documented) and malingering of ADHD. Unlike many other psychiatric disorders, college students seem to have less reluctance pursuing an ADHD diagnosis than other diagnoses (e.g., depression, substance abuse, etc.). Given the current controversies associated with ADHD in college students (e.g., malingering of symptoms to obtain stimulant medication), it is crucial to examine how public stigma may relate to malingering. The novelty of this study is that no previous study has assessed the relationship between stigma and malingering. The clinical significance of this study relates is to potentially gain a better understanding of stigma in college students and how stigma may relate to ADHD and the malingering of ADHD.

Our research design includes three groups (typical college students, college students diagnosed with ADHD, and college students coached to feign ADHD). All participants will complete a questionnaire designed to assess opinions of mental health diagnoses (such as depression and ADHD), normal troubles, and attitudes towards mental health treatment. Our primary hypothesis is that there is a hierarchical pattern of public: typical college students will report the most stigmas towards mental health conditions and college students with ADHD will report the least. College students who feign the symptoms of ADHD will report opinions between the first two groups of students because students with ADHD are familiar with people diagnosed with the disorder, and typical college students will report more because they are not as familiar or may not know people with the disorder.

Method

Participants

The sample consisted of 106 undergraduates from Syracuse University. The participants that were excluded from the study were non-fluent English speakers. The typical and malingering group was recruited from Introduction to Psychology classes. The ADHD group was recruited from the Psychological Services Center at Syracuse University by a flyer and clinician referral. Participants received compensation for this study in the form of partial course credit or a \$15 gift certificate.

As noted in Table 1, 50 students participated in the typical college student group, 47 students participated in the in the malingering group, and 9 students participated in the ADHD group. There were no age differences between the three groups, $F(2, 103) = 1.76, p = .18, \eta^2 = .03$. There were no sex, $\chi^2 = 0.28, p = .87$, or ethnicity, $\chi^2 = 8.16, p = .61$, differences noted between the three groups. More participants in the ADHD group were prescribed medication, $\chi^2 = 23.65, p < .001$. There were no differences noted between the three groups with regard to participating in previous therapy, $\chi^2 = 1.78, p = .41$. On the ADHD symptom rating scale, significant differences emerged between the three groups, Wilks $\lambda = 0.35, F(4, 204) = 35.42, p < .001, \eta^2 = .410$. Tukey post-hoc tests revealed that typical participants had lower Inattentive symptoms than both the ADHD and malingering groups. With regard to Hyperactive-Impulsive symptoms, Tukey post-hoc tests revealed a hierarchical pattern (Typical < ADHD < Malingering). Please see Table 1 for complete demographic data.

Participants with ADHD reported being more embarrassed about their ADHD symptoms, $F(2, 102) = 6.50, p = .002, \eta^2 = .11$. No differences were noted between the three groups with

regard to knowing someone with ADHD, $\chi^2 = 2.29, p = .68$. Likewise, no differences were noted between the three groups regarding the primary reason that a person with ADHD would take medication, $\chi^2 = 8.08, p = .23$; as noted in Table 1, the vast majority of participants in all three groups reported that students with ADHD take medication for academic related concerns. Also, as noted in Table 1, the vast majority of participants in all three groups defined ADHD as a “learning disability” (62 – 77%) compared to defining ADHD as a “mental illness” (19-25%).

Measures

Attention Deficit Hyperactive Disorder (ADHD) Stigma Questionnaire (ASQ). Public stigma towards ADHD was assessed using the ASQ (Bell, Long, Garvan, & Bussing, 2011), a 26- item questionnaire used to assess public stigma perceptions about ADHD. The ASQ has three subscales: Disclosure Concerns (7 items; e. g., “People with ADHD work hard to keep it a secret”), Negative Self-Image (6 items; e. g., “People with ADHD feel ashamed of having ADHD”) and Concerns with Public Attitudes (13 items; e.g., “People with ADHD are treated like outcasts”). The ASQ is measured on a 4-point Likert scale (1=strongly disagree, 2=disagree, 3=agree, and 4=strongly agree) with higher scores indicating higher public stigma. Created to be used by both people with and without ADHD, the ASQ asks respondents to decide if others have prejudices and discriminate against individuals with ADHD. Given the third person phrasing of the ASQ, it is not possible to know if a person with ADHD believes these statements apply to him/herself personally. Therefore, while this scale may assess self-stigma, the ASQ is probably best understood as a measure of public stigma. The ASQ has adequate internal consistency ($\alpha > .80$ for all subdomains and $\alpha = 0.93$ for Total Score), test-retest reliability (ICC = .71) and convergent / divergent validity (Kellison et al., 2010).

Questionnaire on Attitudes Towards Treatment of ADHD (QATT). Attitudes towards ADHD treatments were assessed using the QATT (Ferrin et al. 2012), a self- and other- (generally a parent) report measure that examines attitudes towards treatment. Factor analyses demonstrated the three-factor nature of the QATT: 1) worries regarding current and future side effects of treatment, 2) insight into illness and the need for medical treatment, and 3) self-perception and patient–doctor relationship. The QATT consists of 33-items that are measured on a five-point Likert scale, with 0 as “always true” and 4 being “always false.” Higher scores indicated poorer attitudes towards treatment. The internal consistency is adequate ($\alpha > .60$) for the first two subscales, yet weaker ($\alpha < .50$) for the self-perception and patient–doctor relationship factors. Convergent validity was established by high correlations with measures of treatment adherence (Ferrin et al., 2012).

Shared Activities Questionnaire – Modified Version (SAQ – B). Social distance was measured using a modified version of the SAQ (Morgan et al. 1996), a 24-item questionnaire used to assess participant behavioral intentions to engage in particular activities with a peer as described in a vignette. The SAQ-B scale was adapted from its original version to be more appropriate for college age students’ activities. The items fall into three subscales; general social, academic, and active recreational / physical activity. The scale is measured on a three-point Likert scale where 3= yes, 2= maybe, and 1=no; higher scores indicated a greater willingness to participate in activities with the peer described in the vignette. Cronbach’s alphas for the SAQ scales are all $> .80$ (Bell and Morgan, 2000). Cronbach’s alphas for the present study were above .80 (.88 for Total Score, .85 for general social, .84 for academic and .86 for recreational score).

Clinical Vignettes. Vignettes with a precedence in the child stigma literature (O’Driscoll, Heary, Hennessy, & McKeague, 2012) were adapted to depict a college student with ADHD,

Depression, and “Normal Troubles.” Psychiatric labels were not used within the vignettes. Two clinical psychologists affiliated with the study participated in the adaption of the O’Driscoll et al. (2012) vignettes to make them more relevant to college students and to attest to the face validity of the three vignettes. The three vignettes can be found in Appendix A.

Causal Attributions. In order for the measure to be more appropriate for use with college students, an adaptation of the Causal Attribution Scale (Martin, Pescolido, & Tuch 2000) was used to measure beliefs about the causes of vignette character’s symptoms. This measure, which is precedent in child stigma literature, involves three different causes for the vignette character’s condition medical/genetic (e.g. “parent or other members of family have the same condition”), social (e.g. “parents did not raise him/her right”), and moral/individual (e.g. “is not trying hard enough to get better”). Participants were asked, “If any of these things could be a part of the vignette characters’ condition?” This seven-item scale used a seven-point Likert scale, where 1 = not at all true and 7 = very true.

Adjective Checklist. The Adjective Checklist (Siperstein, 2006) requires participants to endorse positive and negative adjectives that best describe the vignette character. Consisting of 32 randomly numbered adjectives (16 positive and 16 negative), the Adjective Checklist required participants to endorse as many items as they deemed relevant. Each Adjective Checklist was individually completed for each vignette. Previous studies that used this checklist have observed a coefficient alpha of .81, which assessed acceptable levels of internal consistency reliability (Siperstein, 1980).

Revised Attribution Questionnaire (r-AQ). The r-AQ (Corrigan et al., 2007) is an eight-time scale that measures stereotypes, prejudice, and discrimination. Individual items measure

“responsibility,” “dangerousness,” “anger,” and fear.” Scores range from 1 to 7, with higher scores indicating more prejudice and stronger stereotypes.

Adult ADHD Self-Report Scale (ASRS). The World Health Organization’s Adult ADHD Self-Report Scale (ASRS) (Kessler et al., 2005) includes 18 items that were generated from symptoms of ADHD typically expressed by adults with ADHD. These 18 items were then mapped onto each of the 18 DSM-IV Criterion-A symptoms. The ASRS has good psychometric properties (Kessler et al., 2005) and is commonly employed in adult ADHD screening and diagnostic evaluations. For the present study, symptoms were subdivided into the total Inattentive symptoms (range 0 – 36) and the total Hyperactive-Impulsive symptoms (range 0 – 36), with higher scores indicating higher self-reported ADHD symptom levels.

Procedures

Participants in the typical and malingering groups were recruited from the Introductory Psychology subject pool and randomly assigned within gender groups to either the typical or malingering groups. The ADHD group was not randomly assigned and was specifically recruited for participation.

Typical College Student Participants. When the individual participants arrived at the lab, they were instructed to take a seat. After all the participants arrived, they were collectively instructed to read and sign the informed consent form. After the consent form was collected, and the research assistants handed out questionnaires to the participants, participants were instructed to answer every question to the best of their ability. When the participants were in the middle of their questionnaire, a copy of their signed consent form was returned. The compensation provided for participation was research credit.

Participants with ADHD. The individual participants with ADHD arrived in the lab and were instructed to take a seat. After all the participants arrived, they were collectively instructed to read and sign the informed consent form. After the consent forms were collected, the research assistants distributed the constructed questionnaires to the participants and told participants to answer every question to their best of their ability. When the participants were in the middle of their questionnaire, a copy of their signed consent form was returned. The compensation provided for participation was either research credit or a \$15 gift card.

Malingering Participants. The protocol for the malingering group was developed using a previously published protocol (Sollman, Ranseen & Berry, 2010). Similar to the Sollman et al. (2010) protocol, the individual participants arrived in the lab and were instructed to take a seat. After all the malingering participants arrived, they were instructed to read and sign the informed consent form. After the consent forms were collected, the research assistants provided participants instructions to read through Internet information (presented in a pseudo webpage format) and to take notes for five minutes. (Please see Appendix B for pseudowebpage content.) After five minutes, the pseudo webpage was taken away from the participants, but they were allowed to keep their notes. The research assistants handed out packets and told participants, “You are trying to convince us that you have ADHD.” The research assistants reminded the participants every seven minutes throughout completion of the questionnaire that they were “trying to convince us” of their ADHD status. Upon completion of the study, participants were debriefed and provided research course credit.

Planned Analyses

First, to better understand our samples, descriptive statistics were computed using χ^2 analyses for categorical data and analyses of variance (ANOVA's) for continuous variables. Second, to test our a priori hypotheses, multivariate analyses of variance (MANOVA) were computed on the ASQ, vignettes, social distance, and adjective checklists with group (ADHD, malingering, typical) as the between subject variable. If the MANOVA was significant, planned univariate ANOVA's were conducted using Tukey post-hoc tests. To better understand how malingering may relate to treatment attitudes, a MANOVA was computed on the QATT. If the MANOVA was significant, planned univariate ANOVA's were conducted using Tukey post-hoc tests. Given the exploratory nature of our work, *p*-value significance was established at .05 level.

Results

Hypothesis Testing – ASQ

On the ASQ, significant differences emerged between the three groups, Wilks $\lambda = 0.73$, $F(6, 202) = 5.68$, $p < .001$, $\eta^2 = .14$. Univariate ANOVA results indicated statistically significant differences on all three subscales: Disclosure Concerns, $F(2, 103) = 11.98$, $p < .001$, $\eta^2 = .19$; Negative Self-image $F(2, 103) = 11.14$, $p < .001$, $\eta^2 = .18$; and Concerns with Public Attitudes, $F(2, 103) = 11.17$, $p < .001$, $\eta^2 = .18$. Tukey post-hoc analyses indicated a hierarchical pattern across all three factors. Typical participants reported the highest public stigma and ADHD participants reported the lowest ADHD-related public stigma. Malingering participants reported public stigma levels between the other two groups (Typical > Malingering > ADHD). (Please see Figure 1 for ASQ results.)

Hypothesis Testing – Vignettes

Attributions. On the ADHD vignette Causal Attribution Scale questions, significant differences emerged between the three groups, Wilks $\lambda = 0.77$, $F(14, 188) = 1.89$, $p = .030$, $\eta^2 = .123$. Univariate ANOVA results indicated that means for “not trying hard enough to get better” were significantly different between groups, $F(2, 102) = 6.00$, $p = .003$, $\eta^2 = .11$. Tukey post-hoc tests revealed that the malingering group believed that this statement was more true than both the typical and ADHD groups. On the ADHD vignette r-AQ questions, significant differences emerged between the three groups, Wilks $\lambda = 0.62$, $F(16, 188) = 3.14$, $p < .001$, $\eta^2 = .21$. Univariate ANOVA results indicated that means for “not a person’s fault,” $F(2, 101) = 4.94$, $p = .009$, $\eta^2 = .09$, and “person makes me angry,” $F(2, 101) = 6.54$, $p = .002$, $\eta^2 = .12$, were significantly different between groups. Tukey post-hoc tests revealed that the ADHD group believed that “not a person’s fault” was less true about the ADHD vignette character than both the typical and malingering groups. Tukey post-hoc tests revealed that the malingering group endorsed that “person makes me angry” about the ADHD vignette character was more true than the typical group.

On the daily troubles vignette Causal Attribution Scale questions, no significant differences emerged between the three groups, Wilks $\lambda = 0.90$, $F(14, 162) = 0.63$, $p = .841$, $\eta^2 = .05$. On the Daily Troubles vignette r-AQ questions, no significant differences emerged between the three groups, Wilks $\lambda = 0.82$, $F(16, 192) = 1.29$, $p = .205$, $\eta^2 = .10$.

On the depression vignette Causal Attribution Scale questions, univariate ANOVA results indicated that means for “drugs or alcohol,” $F(2, 88) = 4.49$, $p = .014$, $\eta^2 = .09$, and “more stressful events,” $F(2, 88) = 3.44$, $p = .036$, $\eta^2 = .07$, were significantly different between

groups. Tukey post-hoc tests revealed that the ADHD group believed that these statements were more true than both the typical and malingering groups. On the depression vignette r-AQ questions, univariate ANOVA results indicated that means for “would help the person,” $F(2, 102) = 5.80, p = .004, \eta^2 = .10$, and “be scared of the person,” $F(2, 102) = 3.82, p = .025, \eta^2 = .07$, were significantly different between groups. Tukey post-hoc tests revealed that the malingering group believed that the character was more dangerous and they were less likely to help. This response was significantly different than the other two groups.

Social Distance. There were no differences in the ADHD vignette social distance scale between the three groups, $F(2, 103) = 0.14, p = .873$. On the daily troubles vignette social Distance Scale, the malingering group was likely to keep greater social distance from the peer with daily troubles, $F(2, 103) = 3.76, p = .026, \eta^2 = .07$. No significant differences emerged between the ADHD and typical groups. There were no differences in the depression vignette social distance scale between the three groups, $F(2, 103) = 1.01, p = .368$.

Adjective Checklist. In the ADHD vignette, three adjectives were endorsed by the ADHD group more than the other two groups, “lazy”, $F(2, 103) = 5.70, p = .004, \eta^2 = .10$; “healthy,” $F(2, 103) = 5.62, p = .005, \eta^2 = .10$; and “foolish,” $F(2, 103) = 3.94, p = .022, \eta^2 = .07$. In the daily troubles vignette, the malingering group endorsed “slow,” $F(2, 103) = 3.84, p = .025, \eta^2 = .07$, and “weak,” $F(2, 103) = 3.41, p = .037, \eta^2 = .06$, more than the typical group. In the depression vignette, the malingering group differentially endorsed four adjectives compared to the other two groups. Malingering group participants were more likely to describe the character in the depression vignette as “careless,” $F(2, 103) = 3.15, p = .047, \eta^2 = .06$; “healthy,” $F(2, 103) = 3.41, p = .036, \eta^2 = .06$; and “alert,” $F(2, 103) = 3.63, p = .030, \eta^2 = .07$, and less likely

to describe the character as “unhappy,” $F(2, 103) = 5.00, p = .009, \eta^2 = .09$. The overall pattern from our Adjective Checklist is that the ADHD group viewed ADHD as somewhat less negative than the other groups. Additionally, the malingering group misidentified ADHD traits in the daily troubles and depression vignettes.

Clinical Disorder Recognition. There were no significant differences between the three groups in correctly identifying ADHD in the ADHD vignette character, $\chi^2 = 0.81, p = .67$ (malingering = 74.5%, ADHD = 77.8%, typical = 82%).

There were no significant differences between the three groups in correctly identifying daily troubles in the daily troubles vignette character, $\chi^2 = 1.49, p = .48$. Nonetheless, only a minority of participants in both the malingering (34%) and typical (38%) groups correctly identified the condition as daily troubles. The ADHD group was somewhat higher (56%), yet not significantly different from the other two groups. Of the malingering group participants that misidentified daily troubles as something else, 42% misidentified the condition as ADHD. Of the typical group participants, 19% misidentified daily troubles as ADHD. This difference between the typical and malingering groups misidentifying ADHD was significant, $\chi^2 = 11.62, p < .001$.

There were significant differences between the three groups in correctly identifying depression in the depression vignette character, $\chi^2 = 9.05, p = .011$. Malingering group participants (51%) were less likely to correctly identify depression than the other two groups (ADHD 67% and typical 80%). Of the malingering group participants that misidentified the depression vignette as something else, 39% identified the condition as ADHD. Of the typical group participants, 6% misidentified the depression vignette as ADHD, while none of the ADHD

group misidentified depression as ADHD. The misidentification of ADHD difference between the malingering and other groups was significant, $\chi^2 = 15.76, p < .001$.

Exploratory Analyses – ADHD Treatment

On the QATT, significant differences emerged between the three groups, Wilks $\lambda = 0.62$, $F(6, 202) = 9.04, p < .001, \eta^2 = .21$. Univariate ANOVA results indicated statistically significant differences on all three subscales: Side Effects, $F(2, 103) = 4.88, p = .009, \eta^2 = .09$, Insight into Illness $F(2, 103) = 17.83, p < .001, \eta^2 = .26$, and Self-Perception and Patient Doctor Relationship, $F(2, 103) = 4.80, p = .010, \eta^2 = .09$. Tukey post-hoc analyses indicated that the malingering group was more worried about Side Effects than the other two groups. Additionally, the typical group had less Insight into Illness than both other groups. Finally, the malingering group had less positive Self-Perception and Patient Doctor Relationships than the other groups. (Please see Figure 2 for complete QATT results.)

Discussion

This study is the first to investigate public stigma towards ADHD in a college student sample. In addition, this study is the first to investigate the relationship between ADHD malingering and stigma in college students. Our results demonstrate that ADHD can be successfully malingered in college students with very little training. Compared to teachers (Bell, Long, Garvan, and Bussing, 2011) and high school students (Kellison, Bussing, Bell, and Garvan, 2009), all three groups of college students reported lower levels of ADHD stigma. Malingering group participants reported lower levels of public stigma compared to typical college students, but not as low as the ADHD diagnosed college students.

This is a clinically significant research topic given (a) the increased prevalence of ADHD in college students (DuPaul, Weyandt, O'Dell, & Varejao, 2009) and (b) the high prevalence of ADHD malingering that occurs in college students (for a review, see Musso & Gouvier, 2014). ADHD was surprisingly easy to mangle in our sample. After a five-minute exposure to a pseudo webpage taken from the Internet, college students successfully mangled ADHD on the ASRS, reporting equivalent levels of inattentive symptoms to those with ADHD. Malingering participants over-endorsed hyperactivity-impulsivity symptoms, which is consistent with previous research on ADHD malingering in college students (Suhr, Hammers, Dobbins-Buckland, Zimak, & Hughes, 2008). This finding is possibly due to the hyperactive-impulsive symptoms being more visible; therefore, malingering participants who endorsed these symptoms would be viewed as having "true" ADHD.

On the ASQ, a hierarchical pattern of results emerged; participants with ADHD reported the least amount of ADHD public stigma, Malingering participants reported higher levels of ADHD public stigma, and typical participants reported the highest level of ADHD public stigma. This finding is likely due to simple awareness and exposure to ADHD. Participants with ADHD are potentially more educated about ADHD and less likely to endorse stigmatizing views about ADHD.

Within five minutes, the malingering student group was coached to successfully fake ADHD. The malingering group over reported hyperactivity/impulsivity symptoms compared to their ADHD diagnosed counterparts. Suhr et al. (2008) researched how measures could be used in order to distinguish between people who are diagnosed with ADHD and people who are considered noncredible, these are participants who are not diagnosed with ADHD and their reasons for wanting an ADHD diagnosis are questionable. Suhr et al. (2008) found that the

participants that were noncredible overexaggerated symptoms on the self-report scale, which was similar to the results that we found within our study.

Stimulant medication used for non-prescribed reasons has become a problem on college campuses. DuPaul, Weyandt, O'Dell, and Varejao (2009) mentioned the increase of stimulant use within the college population. Other researchers have reported that some of the reasons for this increased use are ADHD medication (a) helps with concentration, (b) improves academic performance, (c) is used for recreational purposes (i.e. stay awake when using other substances) (as cited in DuPaul, Weyandt, O'Dell, & Varejao, 2009). These reasons help to provide some context for why college students would seek an ADHD diagnosis.

Association priming effect is the association of a word or a situation with something else, which can cause an automatic response when individuals are presented with that word or situation (Vohs & Baumeister, 2007). The present study found 75% of the participants correctly identified ADHD. The correct identification of malingering can be attributed to priming that was caused because the students were in the Introduction to Psychology class. Another factor that could have contributed to the priming effect was that the consent form also identified the study as "College Students Opinions of ADHD." Association priming may also have worked in another way. Malingering participants were more than likely to misidentify daily troubles and depression as ADHD. Priming may have been caused by the coaching that occurred before questionnaire completion. The coaching possibly caused the malingering participants to view everything as ADHD, which caused them to misidentify daily troubles and depression as ADHD. This priming affect could also be attributed to exposure of the consent form and the material taught within the Introduction to Psychology course.

The effects from priming can affect whether or not somebody comes to believe they have ADHD. Lewandowski, Lovett, Coddington and Gordon (2008) state that ADHD is often diagnosed through a self-reported symptom checklist. The researchers examined how a self-report questionnaire can yield to misdiagnoses of ADHD in college students. The researchers found that because many college students without ADHD have some symptoms of ADHD this may lead college students to believe they have ADHD. In the Lewandowski et al. (2008) study, participants without ADHD also endorsed the same need for academic accommodations as the ADHD diagnosed participants. The academic accommodations for students diagnosed with ADHD may be the reason many students are more likely to report ADHD symptoms.

Compared to previous research by Bell, Long, Garvan, and Bussing (2011) on teachers and Kellison, Bussing, Bell, and Garvan (2009) on high school students, college students in our sample reported lower stigma ratings of ADHD. The social contact and experiences that college students may have with peers diagnosed with ADHD may serve to lessen the stigma. This finding may be caused by a mere exposure effect (Newman & Erber, 2014). While it is positive and reassuring that college students have lower levels of stigma towards ADHD, this may also explain why college students are more likely to malingering ADHD. If a condition has lower levels of stigma, it may be pursued more often. Consistent with this hypothesis, the malingering group reported lower levels of stigma than the typical group.

Limitations

The limitations of this study include not having a large enough sample of ADHD participants, as there were only 9 participants within that group. Another limitation of the study was that some participants in the malingering group were not taking the malingering seriously

and ended up making patterns with the answers on the questionnaire answer sheet. Even though we got results similar to other malingering studies (Suhr et al, 2008), the malingering group may not represent true malingers because there was not a strong enough incentive, such as the acquisition of stimulant medication and/or academic accommodations, which are generally sought by true malingers.

Conclusions / Future Directions

Future research should focus more on public stigma and how to best intervene to lessen any functional impairments causing people with ADHD to self-stigmatize. Future research should be on the effects of priming and how it can be overcome.

Table 1

Descriptive Statistics

	Malingering	ADHD	Typical	Effect
N	47	9	50	
Age	18.81 (0.95)	18.78 (0.83)	18.50 (0.71)	
Sex (% male)	42.6	33.3	40.0	
Ethnicity (% Caucasian)	55.3	77.8	60.0	
% Know someone with ADHD	89.4	88.9	86.0	
% Psychiatric Medication	0.0	77.8 ***	4.0	T, M < A
% Participated in Therapy	23.4	44.4	30.0	
ASRS Inattentive symptoms	30.15 (5.85)	25.67 (7.72)	15.28 (5.40) ***	T < M, A
ASRS Hyperactive-Impulsive	28.13 (6.82)	21.78 (6.32)	11.06 (6.09) ***	T < A < M
Embarrassed	1.15 (0.36)	1.78 (0.67) ***	1.26 (0.53)	T, M < A
% Define ADHD as mental illness	19.1	25.0	24.0	
% Define ADHD as learning disabil.	76.6	62.5	70.0	
% Define ADHD as excuse	4.3	0.0	0.0	
% Primary reason for ADHD meds				
Academic improvement	64	100	70	
Social Relationships	11	0	16	
Occupational functioning	21	0	14	
Driving safety	4	0	0	

Table 2

Vignette Results - Causality

ADHD				
	Malingering	ADHD	Typical	Effect
Not raise him right	1.84 (1.55)	2.22 (1.30)	1.70 (1.20)	
Drugs or alcohol	2.32 (1.67)	3.22 (1.92)	2.30 (1.30)	
Not trying hard enough	3.55 (1.64) **	2.33 (1.50)	2.44 (1.64)	M > T, A
Parents have same condition	3.20 (1.73)	4.00 (2.12)	3.44 (1.36)	
Brain works differently	4.82 (1.78)	4.67 (1.94)	4.66 (1.79)	
God's will	2.11 (1.62)	1.33 (1.00)	1.56 (1.18)	
Stressful events	2.75 (1.64)	2.11 (1.45)	2.46 (1.43)	
Normal Troubles				
	Malingering	ADHD	Typical	Effect
Not raise him right	1.63 (1.07)	1.57 (1.13)	1.76 (1.25)	
Drugs or alcohol	2.34 (1.56)	2.71 (1.11)	2.07 (0.97)	
Not trying hard enough	2.56 (1.64)	2.43 (0.98)	2.12 (1.31)	
Parents have same condition	2.83 (1.72)	3.00 (1.41)	2.95 (1.68)	
Brain works differently	2.85 (1.78)	2.86 (2.12)	2.76 (2.01)	
God's will	1.54 (1.19)	1.71 (1.11)	1.71 (1.35)	
Stressful events	2.63 (1.73)	2.29 (1.11)	2.24 (1.34)	
Depression				
	Malingering	ADHD	Typical	Effect
Not raise him right	2.07 (1.59)	3.57 (1.72)	2.10 (1.57)	
Drugs or alcohol	3.41 (1.76)	5.29 (1.50) *	3.28 (1.57)	A > T, M
Not trying hard enough	3.16 (2.15)	4.00 (2.00)	3.10 (1.95)	
Parents have same condition	3.34 (1.74)	4.29 (1.38)	3.53 (1.71)	
Brain works differently	4.20 (2.01)	5.00 (2.16)	3.75 (2.10)	
God's will	1.95 (1.46)	1.43 (1.13)	1.35 (0.80)	
Stressful events	3.25 (1.73)	5.14 (2.27) *	3.43 (1.75)	A > T, M

Table 3

Vignette Results - Attributions

	ADHD			Effect
	Malingering	ADHD	Typical	
Not person's fault	5.98 (1.92)	3.89 (1.69) ***	5.84 (1.82)	A < T, M
Feel sorry for the person	4.50 (1.53)	5.67 (1.00)	4.20 (1.89)	
Person makes me angry	2.61 (1.75) *	1.56 (1.33)	1.55 (1.21)	M > T, A
Would help the person	4.98 (1.72)	4.44 (2.70)	4.76 (1.55)	
Person should be in mental hospital	1.63 (1.47)	1.11 (0.33)	1.24 (1.11)	
Person not dangerous	5.00 (2.34)	5.89 (1.83)	5.51 (1.98)	
Be scared of person	1.20 (0.54)	1.56 (1.13)	1.10 (0.31)	
Try to stay away from person	1.83 (1.50)	1.67 (1.41)	1.84 (1.63)	
	Daily Troubles			Effect
	Malingering	ADHD	Typical	
Not person's fault	5.00 (2.43)	5.00 (2.50)	5.66 (2.08)	
Feel sorry for the person	3.23 (2.06)	3.33 (2.50)	2.96 (1.76)	
Person makes me angry	1.83 (1.63)	1.33 (0.71)	1.26 (0.57)	
Would help the person	4.32 (1.92)	4.11 (2.42)	4.50 (1.91)	
Person should be in mental hospital	1.40 (1.01) *	1.11 (0.33)	1.00 (0.00)	M > T
Person not dangerous	4.64 (2.44)	6.11 (1.69)	5.64 (1.82)	
Be scared of person	1.49 (1.02) *	1.00 (0.00)	1.12 (0.33)	M > T
Try to stay away from person	1.68 (1.29)	1.56 (1.33)	1.34 (0.66)	
	Depression			Effect
	Malingering	ADHD	Typical	
Not person's fault	5.30 (1.99)	5.33 (2.24)	5.60 (1.96)	
Feel sorry for the person	4.98 (1.90)	5.33 (2.18)	5.06 (1.61)	
Person makes me angry	1.85 (1.30)	1.44 (1.33)	1.68 (1.25)	
Would help the person	4.78 (1.85) **	6.56 (0.88)	5.60 (1.51)	T, A > M
Person should be in mental hospital	1.85 (1.51)	1.44 (0.73)	1.52 (0.91)	
Person not dangerous	3.89 (2.04)	4.33 (1.23)	3.78 (1.99)	
Be scared of person	2.37 (1.32) *	1.56 (1.01)	1.76 (1.10)	M > T, A
Try to stay away from person	2.52 (1.67)	2.00 (1.58)	2.12 (1.41)	

Figure 1

ASQ Results

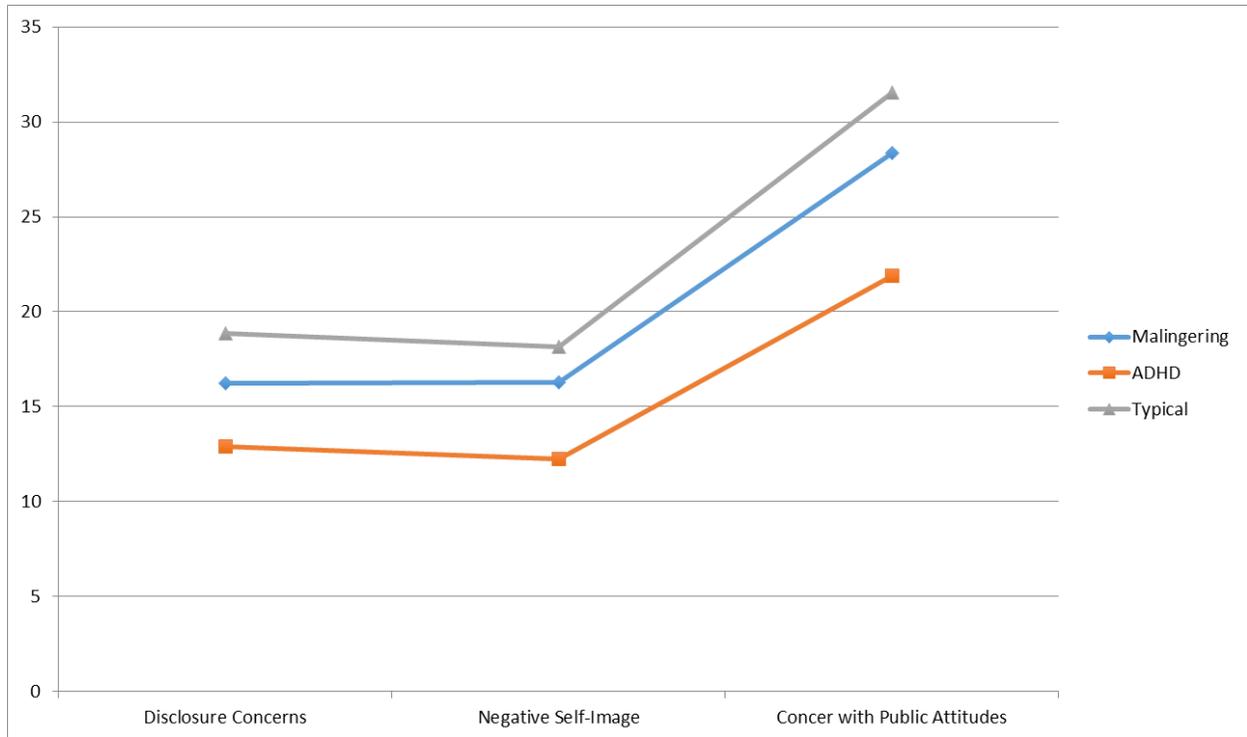
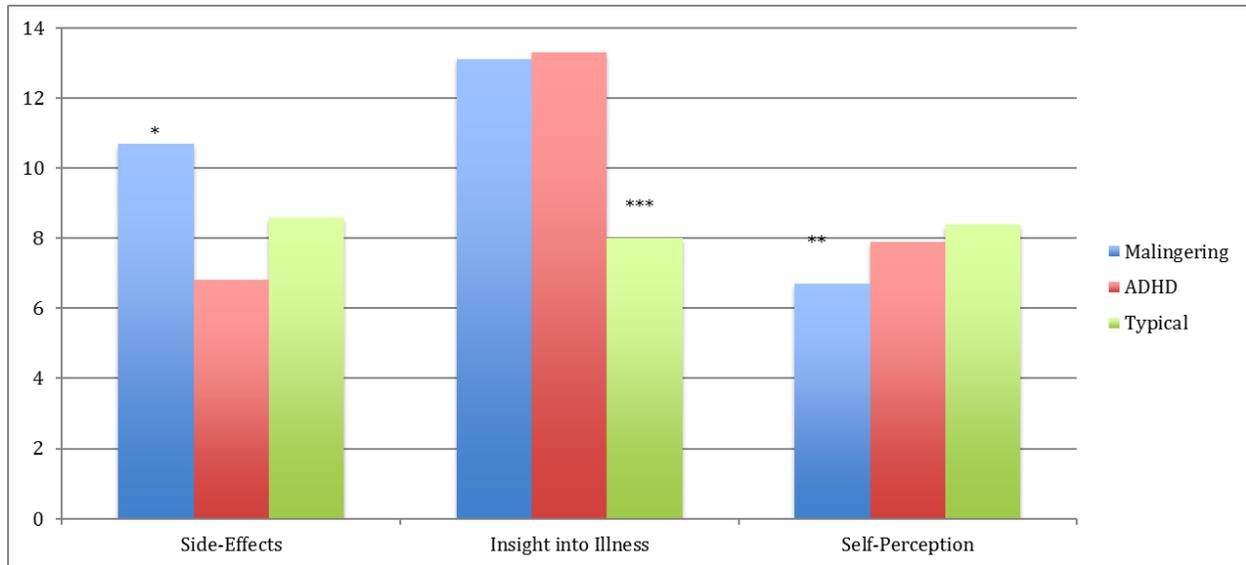


Figure 2

QATT Results



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Appendices

Appendix 1

Questionnaire

I'm going to describe a college student – named Jennifer. After you read a description of her I'll ask you some questions about how you think and feel about her.

Jennifer is a female college student who is 19 years old. Jennifer has several friends that she gets together with one or two times per week, and is involved in several activities, including sports and clubs. Jennifer usually gets along fairly well with other students, but occasionally has some problems with her roommate. Jennifer is an average student and does not get in trouble in class, although she tends to be somewhat reserved about participating in class. Jennifer's friends note that she is sometimes moody, but this comes and goes.

Do you think any of these things could be part of the cause of Jennifer's condition?

1 – Not at all True 3 – Somewhat True 5 – True 7 – Very true

1. Jennifer's parents did not raise her right.	1	2	3	4	5	6	7
2. Jennifer uses drugs or drinks alcohol.	1	2	3	4	5	6	7
3. Jennifer is not trying hard enough to get better.	1	2	3	4	5	6	7
4. Jennifer's parent or other members of Jennifer's family have the same condition.	1	2	3	4	5	6	7
5. Jennifer's brain works differently than a normal person's brain does.	1	2	3	4	5	6	7
6. It's God's will.	1	2	3	4	5	6	7
7. Jennifer experienced more stressful events in her life than most people do.	1	2	3	4	5	6	7

1 – Not at all True 3 – Somewhat True 5 – True 7 – Very true

1. It is not Jennifer's fault if she has a mental illness.	1	2	3	4	5	6	7
2. I feel sorry for Jennifer.	1	2	3	4	5	6	7
3. Jennifer makes me angry.	1	2	3	4	5	6	7
4. I would help Jennifer.	1	2	3	4	5	6	7
5. Jennifer should be locked in a mental hospital.	1	2	3	4	5	6	7
6. Jennifer is not dangerous.	1	2	3	4	5	6	7
7. I would be scared of Jennifer.	1	2	3	4	5	6	7
8. I will try to stay away from Jennifer.	1	2	3	4	5	6	7

1. Do you know someone like Jennifer?	No	Yes
2. Do you have a class with someone like Jennifer?	No	Yes
3. Do you have a friend like Jennifer?	No	Yes

If Jennifer attends your college, here is a list of things that you might do with her. Circle the answer that shows how you feel about doing each of these things with Jennifer.

1. Ask Jennifer to come to my dorm room to watch TV.	No	Maybe	Yes
2. Sit next to Jennifer in class.	No	Maybe	Yes
3. Do homework in the library with Jennifer.	No	Maybe	Yes

4. Share my notes or books with Jennifer.	No	Maybe	Yes
5. Work on a class group project with Jennifer.	No	Maybe	Yes
6. Be in the same study group with Jennifer.	No	Maybe	Yes
7. Study for an exam with Jennifer.	No	Maybe	Yes
8. Invite Jennifer to a party.	No	Maybe	Yes
9. Ask Jennifer to go workout with me at the gym.	No	Maybe	Yes
10. Ask Jennifer to walk to the Quad with me.	No	Maybe	Yes
11. Eat lunch with Jennifer in the dining hall.	No	Maybe	Yes
12. Walk to class together with Jennifer.	No	Maybe	Yes
13. Be in a discussion group with Jennifer in class.	No	Maybe	Yes
14. Pick Jennifer to be on my intramural team.	No	Maybe	Yes
15. Work on an assignment in class with Jennifer.	No	Maybe	Yes
16. Write a paper for class with Jennifer.	No	Maybe	Yes
17. Ask Jennifer to join a club with me.	No	Maybe	Yes
18. Do homework with Jennifer in my dorm.	No	Maybe	Yes
19. Go to the movies with Jennifer.	No	Maybe	Yes
20. Hang out with Jennifer during my free time.	No	Maybe	Yes
21. Pick Jennifer as my partner in a class project.	No	Maybe	Yes
22. Be good friends with Jennifer.	No	Maybe	Yes
23. Go to a SU football game with Jennifer.	No	Maybe	Yes
24. Drive somewhere with Jennifer.	No	Maybe	Yes

If you had to describe Jennifer to your other students, what kinds of words would you use?
Below is a list of words to help you. Circle the words you would use. You can use as many or as few as you want.

- | | |
|--------------|--------------|
| 1. Careless | 17. Selfish |
| 2. Kind | 18. Foolish |
| 3. Nice | 19. Cheerful |
| 4. Careful | 20. Friendly |
| 5. Bright | 21. Stupid |
| 6. Dumb | 22. Happy |
| 7. Dirty | 23. Unhappy |
| 8. Slow | 24. Ashamed |
| 9. Clever | 25. Greedy |
| 10. Helpful | 26. Honest |
| 11. Lazy | 27. Ugly |
| 12. Lonely | 28. Sloppy |
| 13. Healthy | 29. Alert |
| 14. Neat | 30. Sad |
| 15. Handsome | 31. Weak |
| 16. Glad | 32. Smart |

What condition do you think Jennifer has: _____

Mary is a female college student who is 19 years old. In the last few months, Mary has been increasingly moody, staying in her dorm room, and seems to have lost interest in her going to class and spending time with friends. Mary says that she always feels very tired even though she is sleeping more than normal, and doesn't feel like eating. Mary has been having trouble concentrating on schoolwork, both in class and in her dorm, and has told her friends “I am not good enough to be here.” One of Mary's friends has also heard her talk about committing suicide. Do you think any of these things could be part of the cause of Mary’s condition?

1 – Not at all True 3 – Somewhat True 5 – True 7 – Very true

1. Mary’s parents did not raise her right.	1	2	3	4	5	6	7
2. Mary uses drugs or drinks alcohol.	1	2	3	4	5	6	7
3. Mary is not trying hard enough to get better.	1	2	3	4	5	6	7
4. Mary’s parent or other members of Mary’s family have the same condition.	1	2	3	4	5	6	7
5. Mary’s brain works differently than a normal person’s brain does.	1	2	3	4	5	6	7
6. It’s God’s will.	1	2	3	4	5	6	7
7. Mary experienced more stressful events in her life than most people do.	1	2	3	4	5	6	7

1 – Not at all True 3 – Somewhat True 5 – True 7 – Very true

1. It is not Mary's fault if she has a mental illness.	1	2	3	4	5	6	7
2. I feel sorry for Mary.	1	2	3	4	5	6	7
3. Mary makes me angry.	1	2	3	4	5	6	7
4. I would help Mary.	1	2	3	4	5	6	7
5. Mary should be locked in a mental hospital.	1	2	3	4	5	6	7
6. Mary is not dangerous.	1	2	3	4	5	6	7
7. I would be scared of Mary.	1	2	3	4	5	6	7
8. I will try to stay away from Mary.	1	2	3	4	5	6	7

1. Do you know someone like Mary?	No	Yes
2. Do you have a class with someone like Mary?	No	Yes
3. Do you have a friend like Mary?	No	Yes

If Mary attends your college, here is a list of things that you might do with her. Circle the answer that shows how you feel about doing each of these things with Mary.

1. Ask Mary to come to my dorm room to watch TV.	No	Maybe	Yes
2. Sit next to Mary in class.	No	Maybe	Yes
3. Do homework in the library with Mary.	No	Maybe	Yes
4. Share my notes or books with Mary.	No	Maybe	Yes

5. Work on a class group project with Mary.	No	Maybe	Yes
6. Be in the same study group with Mary.	No	Maybe	Yes
7. Study for an exam with Mary.	No	Maybe	Yes
8. Invite Mary to a party.	No	Maybe	Yes
9. Ask Mary to go workout with me at the gym.	No	Maybe	Yes
10. Ask Mary to walk to the Quad with me.	No	Maybe	Yes
11. Eat lunch with Mary in the dining hall.	No	Maybe	Yes
12. Walk to class together with Mary.	No	Maybe	Yes
13. Be in a discussion group with Mary in class.	No	Maybe	Yes
14. Pick Mary to be on my intramural team.	No	Maybe	Yes
15. Work on an assignment in class with Mary.	No	Maybe	Yes
16. Write a paper for class with Mary.	No	Maybe	Yes
17. Ask Mary to join a club with me.	No	Maybe	Yes
18. Do homework with Mary in my dorm.	No	Maybe	Yes
19. Go to the movies with Mary.	No	Maybe	Yes
20. Hang out with Mary during my free time.	No	Maybe	Yes
21. Pick Mary as my partner in a class project.	No	Maybe	Yes
22. Be good friends with Mary.	No	Maybe	Yes
23. Go to a SU football game with Mary.	No	Maybe	Yes
24. Drive somewhere with Mary.	No	Maybe	Yes

If you had to describe Mary to other students, what kinds of words would you use? Below is a list of words to help you. Circle the words you would use. You can use as many or as few as you want.

- | | |
|--------------|--------------|
| 1. Careless | 17. Selfish |
| 2. Kind | 18. Foolish |
| 3. Nice | 19. Cheerful |
| 4. Careful | 20. Friendly |
| 5. Bright | 21. Stupid |
| 6. Dumb | 22. Happy |
| 7. Dirty | 23. Unhappy |
| 8. Slow | 24. Ashamed |
| 9. Clever | 25. Greedy |
| 10. Helpful | 26. Honest |
| 11. Lazy | 27. Ugly |
| 12. Lonely | 28. Sloppy |
| 13. Healthy | 29. Alert |
| 14. Neat | 30. Sad |
| 15. Handsome | 31. Weak |
| 16. Glad | 32. Smart |

What condition do you think Mary has: _____

Sarah is a female college student who is 19 years old. Sarah has always had trouble in school, especially in completing assignments on time, even though she has average intelligence. Sarah's professors note that Sarah is very distractible, and that they often have to remind Sarah to get back to the task at hand. Sarah is restless, fidgety, looks out the window, and talks to other students in class. Sarah does similar things in her dorm. Her friends notice that she easily forgets what she's supposed to be doing, has trouble getting up in the morning and going to sleep at night, and loses things like her cell phone and wallet. Sarah also has difficulty making and keeping friends.

Do you think any of these things could be part of the cause of Sarah's condition?

1 – Not at all True 3 – Somewhat True 5 – True 7 – Very true

1. Sarah's parents did not raise her right.	1	2	3	4	5	6	7
2. Sarah uses drugs or drinks alcohol.	1	2	3	4	5	6	7
3. Sarah is not trying hard enough to get better.	1	2	3	4	5	6	7
4. Sarah's parent or other members of Sarah's family have the same condition.	1	2	3	4	5	6	7
5. Sarah's brain works differently than a normal person's brain does.	1	2	3	4	5	6	7
6. It's God's will.	1	2	3	4	5	6	7
7. Sarah experienced more stressful events in her life than most people do.	1	2	3	4	5	6	7

1 – Not at all True 3 – Somewhat True 5 – True 7 – Very true

1. It is not Sarah's fault if she has a mental illness.	1	2	3	4	5	6	7
2. I feel sorry for Sarah.	1	2	3	4	5	6	7
3. Sarah makes me angry.	1	2	3	4	5	6	7
4. I would help Sarah.	1	2	3	4	5	6	7
5. Sarah should be locked in a mental hospital.	1	2	3	4	5	6	7
6. Sarah is not dangerous.	1	2	3	4	5	6	7
7. I would be scared of Sarah.	1	2	3	4	5	6	7
8. I will try to stay away from Sarah.	1	2	3	4	5	6	7

1. Do you know someone like Sarah?	No	Yes
2. Do you have a class with someone like Sarah?	No	Yes
3. Do you have a friend like Sarah?	No	Yes

If Sarah attends your college, here is a list of things that you might do with her. Circle the answer that shows how you feel about doing each of these things with Sarah.

1. Ask Sarah to come to my dorm room to watch TV.	No	Maybe	Yes
2. Sit next to Sarah in class.	No	Maybe	Yes
3. Do homework in the library with Sarah.	No	Maybe	Yes
4. Share my notes or books with Sarah.	No	Maybe	Yes

5. Work on a class group project with Sarah.	No	Maybe	Yes
6. Be in the same study group with Sarah.	No	Maybe	Yes
7. Study for an exam with Sarah.	No	Maybe	Yes
8. Invite Sarah to a party.	No	Maybe	Yes
9. Ask Sarah to go workout with me at the gym.	No	Maybe	Yes
10. Ask Sarah to walk to the Quad with me.	No	Maybe	Yes
11. Eat lunch with Sarah in the dining hall.	No	Maybe	Yes
12 Walk to class together with Sarah.	No	Maybe	Yes
13. Be in a discussion group with Sarah in class.	No	Maybe	Yes
14. Pick Sarah to be on my intramural team.	No	Maybe	Yes
15. Work on an assignment in class with Sarah.	No	Maybe	Yes
16. Write a paper for class with Sarah.	No	Maybe	Yes
17. Ask Sarah to join a club with me.	No	Maybe	Yes
18. Do homework with Sarah in my dorm.	No	Maybe	Yes
19. Go to the movies with Sarah.	No	Maybe	Yes
20. Hang out with Sarah during my free time.	No	Maybe	Yes
21. Pick Sarah as my partner in a class project.	No	Maybe	Yes
22. Be good friends with Sarah.	No	Maybe	Yes
23. Go to a SU football game with Sarah.	No	Maybe	Yes
24. Drive somewhere with Sarah.	No	Maybe	Yes

If you had to describe Sarah to other students, what kinds of words would you use? Below is a list of words to help you. Circle the words you would use. You can use as many or as few as you want.

- | | |
|--------------|--------------|
| 1. Careless | 17. Selfish |
| 2. Kind | 18. Foolish |
| 3. Nice | 19. Cheerful |
| 4. Careful | 20. Friendly |
| 5. Bright | 21. Stupid |
| 6. Dumb | 22. Happy |
| 7. Dirty | 23. Unhappy |
| 8. Slow | 24. Ashamed |
| 9. Clever | 25. Greedy |
| 10. Helpful | 26. Honest |
| 11. Lazy | 27. Ugly |
| 12. Lonely | 28. Sloppy |
| 13. Healthy | 29. Alert |
| 14. Neat | 30. Sad |
| 15. Handsome | 31. Weak |
| 16. Glad | 32. Smart |

What condition do you think Sarah has: _____

Questionnaire on Attitudes toward Treatment (QATT)

On this page is a list of statements that describes adults. We would like to know if you experienced any of these feelings towards medication. Please answer all the items the best you can.

- 0 if the statement is **always false**
- 1 if the statement is **sometimes false**
- 2 if the statement is **neither true nor false**
- 3 if the statement is **sometimes true**
- 4 if the statement is **always true**

I prefer natural remedies (for instance, herbs) rather than medicines	0	1	2	3	4
I prefer speaking with someone about my problems rather than taking medicines	0	1	2	3	4
I think medicines are only for ill people.	0	1	2	3	4
I know everything about this treatment	0	1	2	3	4
I have to take this medication only for a short period of time	0	1	2	3	4
I would stop medication if I wanted to consume alcohol or drugs	0	1	2	3	4
I will stop this treatment as soon as I feel better	0	1	2	3	4
I am worried about having to take medication	0	1	2	3	4
I am worried about the future side effects of this medication	0	1	2	3	4
I think this medication can be addictive	0	1	2	3	4
I am worried that this medication can change my personality negatively	0	1	2	3	4
I have to take this treatment exactly as doctor has prescribed	0	1	2	3	4
I will tell someone if I decide to stop this treatment	0	1	2	3	4
I am the only person controlling my treatment	0	1	2	3	4
I take the medication against my will	0	1	2	3	4
I can prevent getting sick by staying on this medication	0	1	2	3	4
I have mental or psychological problems that require medication	0	1	2	3	4
I think I need professional help to deal with my problems	0	1	2	3	4
I think this medication is necessary for me	0	1	2	3	4
I prefer to take only one pill a day	0	1	2	3	4
I need someone to remind me to take my medication	0	1	2	3	4
I feel embarrassed when I take medication in front of my peers	0	1	2	3	4
I think my parents or friends like the way I am when I'm on this treatment	0	1	2	3	4
I have difficulties in swallowing pills	0	1	2	3	4

I usually forget about taking the pills	0	1	2	3	4
I am happy with the way I am and the way I look	0	1	2	3	4
I am happy with my performance or productivity at school or work	0	1	2	3	4
I feel different because I am on this medication	0	1	2	3	4
I feel better in myself with this treatment	0	1	2	3	4
I think doctors prescribe drugs for everything	0	1	2	3	4
I trust doctors and nurses a lot	0	1	2	3	4
I get on well with my doctor	0	1	2	3	4
I feel motivated and ready to follow this treatment	0	1	2	3	4

This study asks about some of the social and emotional aspects of having Attention Deficit Hyperactivity Disorder (ADHD). For all of the questions, just circle the letters that go with your answer. There are no right or wrong answers, we would just like your opinions. Feel free to write in comments as you go through the questions.

This set of questions asks about some of the experiences, feelings, and opinions people with ADHD might have and how they are treated. Please do your best to answer each question.

For each item, circle your answer: Strongly disagree (SD), disagree (D), agree (A), or strongly agree (SA).

	Strongly Disagree (SD)	Disagree (D)	Agree (A)	Strongly Agree (SA)
1. People who have ADHD feel guilty about it.	SD	D	A	SA
2. People's attitudes about ADHD make persons with ADHD feel worse about themselves.	SD	D	A	SA
3. Someone who has ADHD would think it's risky to tell others about it.	SD	D	A	SA
4. People with ADHD lose their jobs when their employers find out.	SD	D	A	SA
5. People with ADHD work hard to keep it a secret.	SD	D	A	SA
6. People with ADHD feel they aren't as good a person as others because they have ADHD.	SD	D	A	SA
7. People with ADHD are treated like outcasts.	SD	D	A	SA
8. People with ADHD feel damaged because of it.	SD	D	A	SA
9. After learning they have ADHD, a person may feel set apart and isolated from the rest of the world.	SD	D	A	SA
10. Most people think that a person with ADHD is damaged.	SD	D	A	SA
11. A person with ADHD feels they are bad because of it.	SD	D	A	SA
12. Most people with ADHD are rejected when others find out.	SD	D	A	SA

13. People who have ADHD are very careful about who they tell.	SD	D	A	SA
14. Some people who learn of another person having ADHD have grown more distant.	SD	D	A	SA
15. After learning they have ADHD, people worry about others discriminating against them.	SD	D	A	SA
16. Most people are uncomfortable around someone with ADHD.	SD	D	A	SA
17. People with ADHD worry that others may judge them when they learn that they have ADHD.	SD	D	A	SA
18. People with ADHD regret having told some people that they have ADHD.	SD	D	A	SA
19. As a rule, people with ADHD feel that telling others that they have ADHD has been a mistake.	SD	D	A	SA
20. People don't want someone with ADHD around their children once they know that person has ADHD.	SD	D	A	SA
21. Some people act as though it's the person's fault that they have ADHD.	SD	D	A	SA
22. People with ADHD have lost friends by telling them they have ADHD.	SD	D	A	SA
23. People with ADHD have told others close to them to keep the fact that they have ADHD a secret.	SD	D	A	SA
24. The good points of people with ADHD tend to be ignored.	SD	D	A	SA
25. People seem afraid of a person with ADHD once they learn they have ADHD.	SD	D	A	SA
26. When people learn that someone has ADHD, they look for flaws in their character.	SD	D	A	SA

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Self-Report Scale

On this page is a list of statements that describe adults. We would like to know if you have experienced these over the past 6 months. Please answer all items the best that you can.

N	if the behavior	Never occurs
R	if the behavior	Rarely occurs
S	if the behavior	Sometimes occurs
O	if the behavior	Often occurs
VO	if the behavior	Very often occurs

How often do you make careless mistakes when you have to work on a boring or difficult project?	N	R	S	O	VO
How often do you have difficulty keeping your attention when you are doing boring or repetitive work?	N	R	S	O	VO
How often do you have difficulty concentrating on what people say to you, even when they are speaking to you directly?	N	R	S	O	VO
How often do you have trouble wrapping up the fine details of a project, once the challenging parts have been done?	N	R	S	O	VO
How often do you have difficulty getting things in order when you have to do a task that requires organization?	N	R	S	O	VO
When you have a task that requires a lot of thought, how often do you avoid or delay getting started?	N	R	S	O	VO
How often do you misplace or have difficulty finding things at home or at work?	N	R	S	O	VO
How often are you distracted by activity or noise around you?	N	R	S	O	VO
How often do you have problems remembering appointments or obligations?	N	R	S	O	VO
How often do you fidget or squirm with your hands or your feet when you have to sit down for a long time?	N	R	S	O	VO
How often do you leave your seat in meetings or other situations in which you are expected to remain seated?	N	R	S	O	VO
How often do you feel restless or fidgety?	N	R	S	O	VO
How often do you have difficulty unwinding and relaxing when you have time to yourself?	N	R	S	O	VO
How often do you feel overly active and compelled to do things, like you were driven by a motor?	N	R	S	O	VO
How often do you find yourself talking too much when you are in a social situation?	N	R	S	O	VO
When you're in a conversation, how often do you find yourself finishing the sentences of the people that you are talking to, before they can finish them themselves?	N	R	S	O	VO
How often do you have difficulty waiting your turn in situations when turn-taking is required?	N	R	S	O	VO
How often do you interrupt others when they are busy?	N	R	S	O	VO

Demographic Information

Please circle and/or answer the questions.

1. What is your sex?
 - Male
 - Female

 2. What year are you in College?
 - Freshmen
 - Sophomore
 - Junior
 - Senior

 3. What is your age?

 4. What is your ethnicity (select all that apply)?
 - Caucasian
 - Latino or Hispanic
 - African American
 - Asian
 - Pacific Islander
 - Native American
 - Other

 5. Do you know somebody with ADHD?
 - Yes
 - No

 6. Do you have ADHD?
 - Yes
 - No

 7. Are you currently prescribed any medication?
- Yes
 - No
-
8. If yes, what medication(s)?

-
9. Have you ever participated in counseling or therapy?
 - Yes
 - No
-
10. If yes, for how many months?

-
11. How many people were in your high school graduating class?

-
12. How would you describe your hometown?
 - Rural
 - Urban
 - Suburban
-
13. How embarrassed are you of your inattentive, hyperactive-impulsive symptoms?
 - 1 – not at all embarrassed
 - 2 – a little embarrassed

3 – very embarrassed

14. Which of the following best describes ADHD?

- Mental illness
- Learning disability
- Excuse for behavior

15. Why do college students with ADHD take medication? Rank order from top to bottom of **most** important to **least** important.

- Academic improvement
- Social relationships
- Occupational functioning
- Athletics/exercise performance
- Driving vehicle safely

1. _____
2. _____
3. _____
4. _____
5. _____

16. Here is a list of Stressors. Rank the order from top to bottom of **most** stressful to **least** stressful.

- Global warming
- Taking exams
- Studying for exams
- Having ADHD
- Taking medication
- Having depression
- Maintaining relationships

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____

Appendix 2

Pseudo Webpage

Your roommate has been diagnosed with ADHD. He/She had trouble with classes, but then was given some medication for ADHD, and now does well. He/She even got a couple of A's recently, and has more time to socialize because studying is not as hard! During your midterms, you decided to try your roommate's medication, and ended up surprising yourself with how much easier things went. You may think that you have undiagnosed ADHD, so you "Google" the disorder to learn more about it. On the following pages are some of the things that you find.

When you are done reviewing these materials, please use the colored paper to jot down symptoms that will help you remember how to fake ADHD on the questionnaire you will be given. Tell the examiner when you are done jotting down symptoms and ready to start the questionnaire.

Attention Deficit Hyperactivity Disorder

The symptoms of ADHD include inattention and/or hyperactivity and impulsivity. These are traits that most children display at some point or another. But to establish a diagnosis of ADHD, sometimes referred to as ADD, the symptoms should be inappropriate for the child's age.

Adults also can have ADHD; in fact, up to half of adults diagnosed with the disorder had it as children. When ADHD persists into adulthood, symptoms may vary. For instance, an adult may experience restlessness instead of hyperactivity. In addition, adults with ADHD often have problems with interpersonal relationships and employment.

Symptoms of ADHD

There are three different categories of ADHD symptoms: inattention, hyperactivity, impulsivity.

Inattention may not become apparent until a child enters the challenging environment of school. In adults, symptoms of inattention may manifest in work or in social situations.

A person with ADHD may have some or all of the following symptoms:

- Difficulty paying attention to details and tendency to make careless mistakes in school or other activities; producing work that is often messy and careless
- Easily distracted by irrelevant stimuli and frequently interrupting ongoing tasks to attend to trivial noises or events that are usually ignored by others
- Inability to sustain attention on tasks or activities
- Difficulty finishing schoolwork or paperwork or performing tasks that require concentration
- Frequent shifts from one uncompleted activity to another
- Procrastination
- Disorganized work habits
- Forgetfulness in daily activities (for example, missing appointments, forgetting to bring lunch)
- Failure to complete tasks such as homework or chores
- Frequent shifts in conversation, not listening to others, not keeping one's mind on conversations, and not following details or rules of activities in social situations

Hyperactivity symptoms may be apparent in very young preschoolers and are nearly always present before the age of seven. Symptoms include:

- Fidgeting, squirming when seated
- Getting up frequently to walk or run around
- Running or climbing excessively when it's inappropriate (in teens this may appear as restlessness)

- Having difficulty playing quietly or engaging in quiet leisure activities
- Always being 'on the go'
- Often talking excessively

Hyperactivity may vary with age and developmental stage.

Toddlers and preschoolers with ADHD tend to be constantly in motion, jumping on furniture, and having difficulty participating in sedentary group activities. For instance, they may have trouble listening to a story.

School-age children display similar behavior but with less frequency. They are unable to remain seated, squirm a lot, fidget, or talk excessively.

In adolescents and adults, hyperactivity may manifest itself as feelings of restlessness and difficulty engaging in quiet sedentary activities.

Impulsivity symptoms include:

- Impatience
- Difficulty delaying responses
- Blurting out answers before questions have been completed
- Difficulty awaiting one's turn
- Frequently interrupting or intruding on others to the point of causing problems in social or work settings
- Initiating conversations at inappropriate times

Impulsivity may lead to accidents such as knocking over objects or banging into people. Children with ADHD may also engage in potentially dangerous activities without considering the consequences. For instance, they may climb to precarious positions.

Many of these symptoms occur from time to time in normal youngsters. However, in children with ADHD they occur frequently -- at home and at school or when visiting with friends. They also interfere with the child's ability to function as other children of the same age or developmental level.

ADHD is diagnosed only when children consistently display some or all of the above behaviors in at least two settings, such as at home and in school, for at least six months.

Types of ADHD

There are three different subtypes of ADHD, including:

- Combined ADHD (the most common subtype), which involves symptoms of both inattentiveness and hyperactivity/impulsivity
- Inattentive ADHD (previously known as ADD), which is marked by impaired attention and concentration
- Hyperactive-impulsive ADHD, which is marked by hyperactivity without inattentiveness

For a diagnosis of ADHD, some symptoms that cause impairment must be present before age seven. Also, some impairment from the symptoms must be present in more than one setting. For instance, the person may be impaired at home and school or home and work. Also, there must be clear evidence the symptoms interfere with the person's ability to function at home, in social environments, or at work.

How is ADHD diagnosed in adults?

Like children, adults who suspect they have ADHD should be evaluated by a licensed mental health professional. But the professional may need to consider a wider range of symptoms when assessing adults for ADHD because their symptoms tend to be more varied and possibly not as clear-cut as symptoms seen in children.

To be diagnosed with the condition, an adult must have ADHD symptoms that began in childhood and continued throughout adulthood. Health professionals use certain rating scales to determine if an adult meets the diagnostic criteria for ADHD. The mental health professional also will look at the person's history of childhood behavior and school experiences, and will interview spouses or partners, parents, close friends, and other associates. The person will also undergo a physical exam and various psychological tests.

For some adults, a diagnosis of ADHD can bring a sense of relief. Adults who have had the disorder since childhood, but who have not been diagnosed, may have developed negative feelings about themselves over the years. Receiving a diagnosis allows them to understand the reasons for their problems, and treatment will allow them to deal with their problems more effectively.

Who Is At Risk?

ADHD is one of the most common childhood disorders and can continue through adolescence and into adulthood. The average age of onset is 7 years old.

ADHD affects about 4.1% American adults age 18 years and older in a given year. The disorder affects 9.0% of American children age 13 to 18 years. Boys are four times at risk than girls.

Studies show that the number of children being diagnosed with ADHD is increasing, but it is unclear why.

Long-Term Prognosis With ADHD

Some children with ADHD -- approximately 20% to 30% -- develop learning problems that may not improve with ADHD treatment. Hyperactive behavior may be associated with the development of other disruptive disorders, particularly conduct and oppositional-defiant disorder. Why this association exists is not known.

Many children with ADHD ultimately adjust. Some, though, especially those with an associated conduct or oppositional-defiant disorder, are more likely to drop out of school. These individuals fare more poorly in their later careers.

Inattention tends to persist through childhood and adolescence and on into adulthood, while hyperactivity tends to diminish with age.

As they grow older, some teens that have had ADHD since childhood may experience periods of anxiety or depression.

Several of the symptoms of ADHD may get worse as the demands at school or home increase. They include:

- Difficulty following instructions
- Being unable to get organized, either at home or at school
- Fidgeting, especially with the hands and feet
- Talking too much
- Failing to finish projects, including chores and homework
- Not paying attention to and responding to details
- Getting poor grades in school
- Being isolated from peers due to poor grades and secondary depression

You will now be introduced to the person who will complete testing with you.

Please complete the following questionnaire as if you are trying to convince someone that you have ADHD. It is not necessary for you to try to act like you have ADHD; you only need to respond to the questions as if you do. If you have any questions, please take time to ask me right now.