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Gender Differences in ADHD

Jillian Vogley

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Abstract

Attention-Deficit/Hyperactivity Disorder (ADHD) is a learning disability that is very prevalent in today's society. A closer look at this disability reveals that there are differences with males and females with regards to how the symptoms manifest. Females have a tendency to exhibit inattention whereas males are often hyperactive, which is much more obvious to others around them. This difference in symptoms has led to a drastic difference in terms of how ADHD is diagnosed and causes it to be underdiagnosed or misdiagnosed in females compared to males. The consequences that this delayed diagnosis may have on females can be severe. An interview with physicians in the specialties of family medicine, pediatrics, and psychiatry reveal that this issue is prevalent in many clinics for a variety of different reasons. Anonymous surveys further reveal issues relating to the gender differences in ADHD as well.

ADHD Introduction

Attention-Deficit/Hyperactivity Disorder (ADHD) is a mental illness and learning disability that leads to symptoms such as difficulty maintaining concentration, impulsivity, hyperactive behavior, trouble remaining organized, and difficulty remembering details. While this disorder is most commonly diagnosed in childhood, it has been known to be diagnosed far later, into an individual's 40s or 50s (Holland et al., 2017). The physiological basis of this condition has been associated with neurotransmitters in the brain. While there has not been a definitive answer on what exactly occurs in the brain, there has been much speculation and many proposed theories. Miscommunication between the Dopamine and Norepinephrine neurotransmitters have been one of the proposed theories. A higher concentration of Dopamine or Norepinephrine re-uptake inhibitors, causing Dopamine or Norepinephrine to be removed too quickly, meaning the effects of these neurotransmitters are not present in long enough durations for individuals to feel the effects, has been proposed as another possibility (Hunt, 2006).

ADHD Diagnosis

Physicians have yet to agree on a universal and consistent way of diagnosing individuals with ADHD. Despite this disagreement, there are three relatively common diagnostic tools used in this process which include the self-report score, the Vanderbilt questionnaire, and neuropsychology testing. The ADHD self-report score is composed of eighteen questions. This requires patients to select how often they have experienced the listed symptoms over the course of six months. They are given the options of "Never", "Rarely", "Sometimes", "Often", and "Very often". Each answer is associated with a number (0-4) and the exam is then scored accordingly (Adler et al., n.d.). This is a fairly brief exam compared to other options. There is

also a Vanderbilt exam for ADHD. This is also a written questionnaire; however, it is much more in-depth than the self-report score and asks many more questions. The Vanderbilt exam is typically only used in children under the age of twelve. It requires both the parents and the teacher to fill out the questionnaire, which allows for evaluation of how children behave at home and at school (Gualtieri & Johnson, 2005). The third common way of testing for ADHD is with neuropsychology testing. This is an exam that is several hours long and is administered by a qualified psychologist. It is a comprehensive assessment to evaluate all aspects of an individual's behavior. This is by far the most accurate and objective way to test for ADHD. However, this test is very time consuming, which makes scheduling very difficult and prolongs a diagnosis. It is also extremely expensive and not always covered by insurance, in which case it may not even be an option for some (Gallagher & Vekaria, 2017).

ADHD Treatment

Stimulants are the most common treatment for ADHD (Hunt, 2006). While there are different proposed mechanisms for how ADHD affects the brain, there are also different proposed mechanisms for how stimulants function in the brain. The idea of prescribing a stimulant seems counterintuitive to some, as prescribing a stimulant to a child who is already exhibiting hyperactive behavior would seem to increase the hyperactivity. However, a further look at the use of these medications reveals that this is not the case. One description of how stimulants work in the brain is by increasing Dopamine and Norepinephrine levels. Dopamine and Norepinephrine work in conjunction to promote many of our cognitive functions. These functions include maintaining attention and focus, motivation and energy, and improving the overall mood in individuals. Because these neurotransmitters work in conjunction with one

another, both are needed in sufficient amounts. Studies have demonstrated that taking a stimulant such as Adderall, Ritalin, or Vyvanse, does increase the amount of these neurotransmitter levels in the brain. However, clinicians do aim for a very slow increase in these neurotransmitters to mimic the way in which they are naturally produced in the brain (University of Wisconsin – Madison, 2006). A newer view on how stimulants work is not that they increase the neurotransmitter levels, but that they slow the rate at which they are removed or used up by the brain. Those who accept this view on the stimulant medication argue that there are plenty of neurotransmitters in the brain of those afflicted with ADHD, however, they are used up too quickly. Slowing the rate at which they are used up allows the brain to use the neurotransmitters in the way in which they were intended, thereby allowing the individual to experience the necessary effects of these neurotransmitters (National Institute on Drug Abuse, 2014). The exact physiology of ADHD and the medication mechanisms remain theories to many professionals and have yet to be proven.

Gender Differences

Another barrier that professionals have come across with regards to ADHD is the difference in males and females. Studies have shown that males are much more likely to be diagnosed with ADHD and are diagnosed at much higher rates. Currently, males have been determined to be three times more likely to be diagnosed with ADHD than females. In fact, 12.9% of males will be diagnosed with ADHD at some point in their lifetime, compared with 4.9% of women. This also continues into adulthood for some of those individuals, with 4% of adults in America over the age of eighteen struggling with ADHD. There have been many

proposed causes for the gender differences in ADHD. Much of this has to do with the difference in symptoms that females exhibit (Holland et al., 2017).

Males have a tendency to be diagnosed with ADHD at a much younger age and at much higher rates than females. Males often exhibit the hyperactive symptoms that are quite disruptive to others around them. When exhibiting bothersome symptoms, diagnosis and treatment are often encountered much sooner. While these behaviors are not necessarily bothersome to the children experiencing the hyperactivity, it is the frustration of that behavior encountered by those around them that prompts this diagnosis. Teachers may refer children for testing who are being disruptive in their classrooms. Parents may not be able to control their children to a reasonable extent, warranting evaluation for ADHD. On the other hand, females have a tendency to be inattentive. Because this is not a behavior that is outright displayed, it is often overlooked and not immediately diagnosed (Skogli et al., 2013). A study done by a group of psychologists in 2004 revealed that 82% of teachers believe ADHD to be more prominent in boys, and 40% of teachers admitted to struggling to recognize ADHD symptoms in females. Furthermore, the number of males and females diagnosed with ADHD in adulthood is almost equal in ratio, compared to the three to one ratio of males and females in childhood. This is often due to women referring themselves for evaluation and treatment of symptoms after not having them recognized earlier on (Collingwood, 2018).

The presence of co-occurring disorders is another barrier to women being diagnosed. Co-occurring psychiatric problems make the diagnosis much more difficult, especially when components of various illnesses such as anxiety, depression, and ADHD can mimic each other. Physicians have a tendency to lean towards the more common diagnoses of depression or anxiety and begin treating the patients for such. Some physicians are still under the impression that males

are more likely to develop ADHD and thus do not consider it a possibility in the females they are treating (Young, 2009). Additionally, a 2005 study examined co-occurring disorders in males and females with ADHD. This study found males to be more commonly diagnosed with oppositional defiant disorder and females to be diagnosed with depression and anxiety, further indication that females are more likely to have an internalizing disorder that is not obvious to those around them and males are more likely to have an externalizing disorder. Because females often exhibit inattentive symptoms, they are often accustomed to internalizing their problems. This has led to females being five times more likely than males to be diagnosed with depression and three times more likely to be diagnosed with depression before ADHD (Skogli et al., 2013).

Delinquency has been identified as being much more prominent in those with ADHD. A study in 2008 evaluated female prison inmates to determine if there were differences among those who had ADHD and those who did not. Findings indicated that females with ADHD had their first convictions at much younger ages than those without ADHD and tended to be incarcerated for longer periods of time. Substance use disorder and borderline personality disorder were other comorbidities identified at much higher rates in the females with ADHD (Rösler et al., 2009).

Multiple studies have found increased rates of suicidal ideation, attempt, and completion in those with ADHD compared with those who do not have ADHD. Impulsivity is a cardinal symptom of ADHD, even experienced by those who are primarily inattentive. The impulsivity causes individuals with ADHD to act without considering the consequences. For example, if someone were to get in an argument, have a relationship end, or lose a job, the feeling of being overwhelmed by emotion can be too much for some, causing them to end their lives without further evaluating their situation (Owens & Hinshaw, 2014). ADHD is also highly associated

with depression. Specifically, depression symptoms in those with ADHD are often related to low feelings of self-worth, negative thoughts, and constantly feeling not good enough. The symptoms of ADHD in itself such as inattention, inability to stay on task, difficulty with understanding instructions, and forgetfulness are often what promotes these negative feelings (Daviss, 2008). For example, if an individual tries his or her best to study for an exam, and still does poorly, negative feelings can certainly arise. Being unable to concentrate often makes studying very difficult. Constantly being reprimanded at work due to forgetfulness or being unable to understand instructions can also take quite a toll on people. When ADHD begins to interfere with academics, employment, and relationships, depression is not uncommon, and this comorbidity of ADHD and depression is also a large risk factor for suicide (Daviss, 2008). Additional studies report that in adolescence, over half of individuals with ADHD have suicidal thoughts and in adulthood, one third of those with ADHD had suicidal thoughts as well (Balazs & Kereszteny, 2017). Furthermore, suicide attempts were twice as high in females compared to males, largely due to the associated depression (Ljung et al., 2014).

Review of literature on gender differences in ADHD demonstrates a significant difference in symptoms between males and females. With females internalizing symptoms, they are often diagnosed much later in life. Co-occurring disorders such as anxiety and depression make this diagnosis even more difficult for physicians. There is a lack of research on distinctions between males and females with ADHD. I will examine the difference in symptoms and the presence of co-occurring illnesses with ADHD by interviewing physicians and obtaining data from an anonymous online survey.

Methods

As detailed below, I employed both interviews and a questionnaire in this research project. Because human subjects were involved, I sought and received approval from Western Michigan University's Human Subjects Institutional Review Board.

Physician Interviews: Introduction and Methods

I am currently employed as a medical scribe and have access to physicians in multiple specialties. After speaking with several of the physicians whom I work with on a regular basis, four of them volunteered to answer several questions pertaining to gender differences in ADHD. The physicians who volunteered specialize in family medicine, pediatrics, and psychiatry. The physicians who were consulted have extensive experience in diagnosing and treating ADHD. The physicians were asked a series of six questions on the telephone and given the opportunity to add additional information on the topic. The questions included the following: What are your opinions on the gender differences associated with ADHD? Do you feel that one gender is often diagnosed more frequently than the other? How do you go about testing for ADHD? Do you notice a difference in the symptoms exhibited by males and females with ADHD? Do you believe that the difference in symptoms has an impact on the diagnosis? Is there any additional information you would like to add on the subject? The names of the physicians were kept anonymous, as well as their affiliated institutions.

Results

The first physician specializes in family medicine. His opinions on gender differences with ADHD are that the men are often already diagnosed with ADHD by the time they transfer

to his care from pediatrics, however, he is typically the one diagnosing women, and often diagnoses them between the ages of twenty and forty. He is not sure if one gender is diagnosed more frequently than the other, but he certainly has more male patients with ADHD than female patients. He prefers to use the eighteen-question ADHD self-report score to diagnose and reevaluate patients. He believes that the self-report score gives him enough information and is much more efficient than other diagnostic tools. When patients first express ADHD concerns, he asks them to fill out the self-report score for a baseline evaluation. He also asks them to fill out the form during each follow-up appointment to evaluate the effectiveness of treatment. With regard to different symptoms in males and females, he states that most of the males he diagnoses or treats often act angry and very “scatterbrained”, females on the other hand often act overwhelmed by obligations. He does believe that the symptoms impact when the individual gets diagnosed. Because the symptoms often exhibited by males are much more obvious, they are typically diagnosed much quicker. He also states that many wives notice strange behavior in their husbands such as an increase in anger or outbursts, which can also prompt a new diagnosis. He does state that he will not prescribe stimulants if the patient has another health condition that may contradict this such as elevated blood pressure or seizures.

The second physician consulted also specializes in family medicine. His opinion on gender differences is that there is a difference in comorbid illnesses between males and females. He has noticed that many mental illnesses such as dementia, depression, anxiety, and ADHD do mimic each other. Females often display depressive symptoms whereas males often have oppositional defiant behavior. Because these illnesses mimic each other, he requires neuropsychology testing before proceeding with stimulant treatment. He believes that the thorough testing is needed for a definitive diagnosis and to avoid diagnosing them incorrectly.

With regard to different symptoms, he again refers to the depression symptoms often present in females and defiant behavior in males. He has also noticed that females are often able to “get by” in school and do well for a long period of time. It is often not until late high school or early college that females begin to struggle and are less able to cope with their symptoms. Co-occurring disorders and illnesses that mimic each other are one of the reasons he believes diagnosis to be delayed in females, as well as females being able to cope well with their symptoms. He did not have any additional information to add.

The third physician specializes in pediatrics. His view on gender differences in ADHD is that males are almost always hyperactive and often have poor behavior. This hyperactivity and poor behavior causes teachers to contact the parents and encourage testing to prevent further disruption in the classroom. Parents also have a tendency to notice that their children do not obey rules. He has not had many females diagnosed with ADHD and he does believe this to be due to the fact that they are more inattentive with less obvious symptoms. He does believe that males are diagnosed more frequently than females and he is currently treating many more males than females for ADHD. He encourages either neuropsychology or Vanderbilt testing for an objective diagnosis. Neuropsychology testing is preferred due to its accuracy. However, due to the cost, neuropsychology testing is not always an option for his patients. It also depends on the severity of the situation. If a child is being so disruptive that he or she is on the verge of being suspended or expelled, treatment is much more urgent and the neuropsychology testing would take far too long to complete, especially with how long it takes to receive an appointment for such testing. With regards to a difference in symptoms, he again stresses the disruptive and hyperactive behavior that most males display. He does believe that this difference in symptoms has an impact

on the diagnosis, because females do not often display external or disruptive behavior that would lead to consideration of ADHD as a possibility. He did not add any additional information.

The fourth physician specializes in psychiatry. His opinion on gender differences is that females are often inattentive and impulsive and he finds that they are often first diagnosed with depression or anxiety. However, it is the ADHD that is in fact driving the depression and anxiety symptoms. Males are less likely to exhibit depression and anxiety and are often diagnosed in elementary school due to hyperactive behavior. He believes that males are often diagnosed sooner than females and are often diagnosed more frequently as adolescents, however, he is unsure if there is a difference in the number of male and female diagnoses by the time individuals reach adulthood. He will only use neuropsychology testing in order to diagnose and treat patients with ADHD. He believes that the self-report scores and Vanderbilt testing are far less accurate with the ability to skew the score towards a desired diagnosis. Neuropsychology testing is much more objective in his opinion. His view on symptom differences is that females are typically inattentive and impulsive. They also develop problems with self-esteem as they become teenagers and then financial problems in adulthood. His largest concern associated with this is that females with ADHD are five times more likely to commit suicide due to impulsivity and not being able to think through situations reasonably. He did provide this statistic on his own and did not clarify where he received this information. Symptoms in males are described as being overly energetic and they are also found to be poorly behaved before treatment. As males become older, they tend to display aggressive symptoms. The difference in symptoms has a huge impact on the diagnosis in his opinion. He is very surprised by how many females are referred to him for depression/anxiety and turn out to have ADHD. He did not add any additional information.

Discussion

The opinions of physicians align with the proposition of females being diagnosed less frequently than males. They refer to females tending to be inattentive and less obvious with their symptoms and that it is typically not until far later in their life when the symptoms become too much of a burden that diagnosis becomes a possibility. All of these views are consistent with what is discussed in the literature review about females displaying different symptoms than males and tending to be more inattentive. This also correlates with them being diagnosed later in life or being misdiagnosed initially. The difference in opinions on the best way to diagnose individuals is interesting and a fact that should be taken into consideration. This demonstrates the many different ways we have of diagnosing ADHD and with this variety of diagnostic tools, it leaves much more room for error and inconsistency.

Anonymous Social Media Survey: Methods and Results

In addition to conducting interviews with physicians, I created an anonymous online survey, asking individuals who are already diagnosed with ADHD to provide information. The link to the survey was posted on my Facebook page, making it accessible to the 760 people I am friends with on Facebook. I cannot be certain if friends of mine shared the link with other individuals. While the link was on Facebook, the survey itself took place in Google Forms. The survey was composed of nine multiple choice questions relating to an individual's experience with ADHD. The survey had a total of twenty responses, thirteen of which were from females and seven from males. The first question of interest was the age in which those individuals were officially diagnosed with ADHD. Results from this question indicated that 43% of males and

16% of females were diagnosed between the ages of 6-10, furthermore, 54% of females were diagnosed in their 20s, compared with 29% of males. The next question requested individuals to report who prompted their diagnosis or testing. Meaning, if a parent or teacher noticed the symptoms or if they had to advocate for themselves. The results of this found that females had to advocate for themselves in 46% of cases and males in 29%. Participants were far more likely to prompt their own diagnosis if they were diagnosed in their teens and twenties. Parents and school officials prompted the diagnosis when participants were younger. The next question asked participants to indicate what symptoms they were exhibiting prior to being diagnosed. Results were almost equal in terms of males and females reporting symptoms of feeling anxious, unable to finish tasks, feeling of impulsivity, and difficulty focusing. The largest difference was in symptoms of hyperactivity. 54% of females and 71% of males felt hyperactive. Figure 1 and Figure 2 illustrate the symptoms reported by males and females.

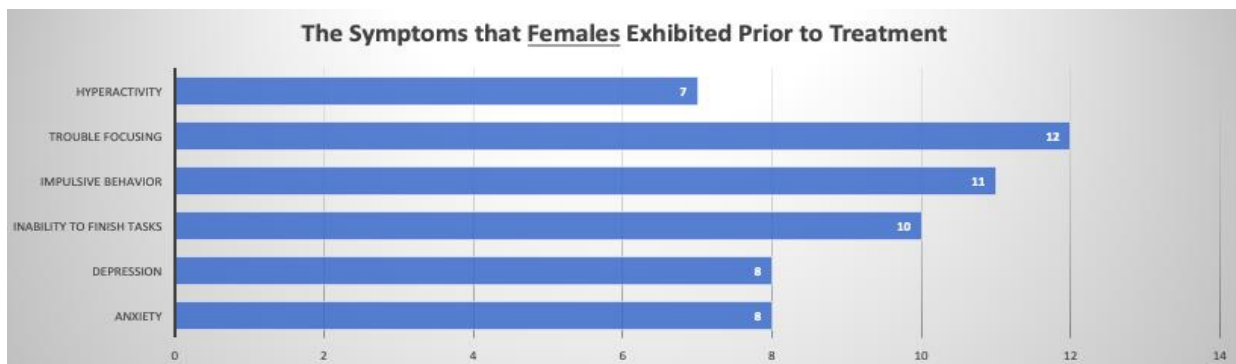


Figure 1: Female symptoms prior to ADHD treatment.

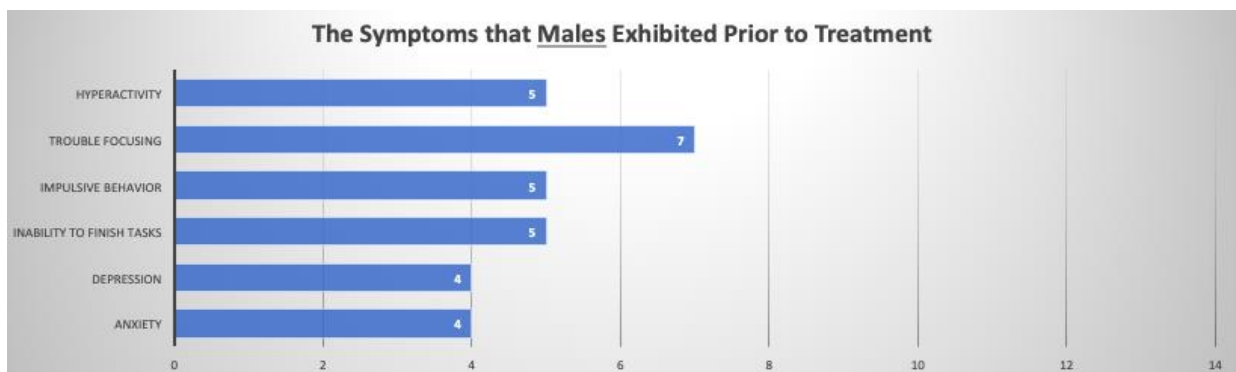


Figure 2: Male symptoms prior to ADHD treatment.

Survey participants were then asked if they were originally misdiagnosed with another illness prior to being diagnosed with ADHD. Twice as many females compared to males were misdiagnosed with depression and almost half of the females were misdiagnosed with anxiety, compared with zero males having this misdiagnosis. 23% of females were told that they were just “too stressed out” or a “perfectionist” whereas none of the males were told that.

Furthermore, 57% of males were considered to be poorly behaved, compared with 15% of females. Figure 3 and Figure 4 illustrate these misdiagnoses.

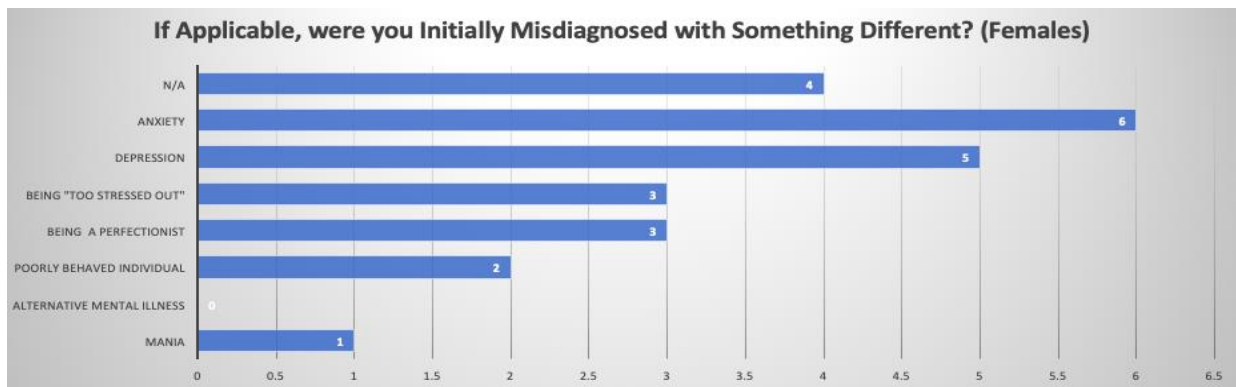


Figure 3: Misdiagnosis in females.

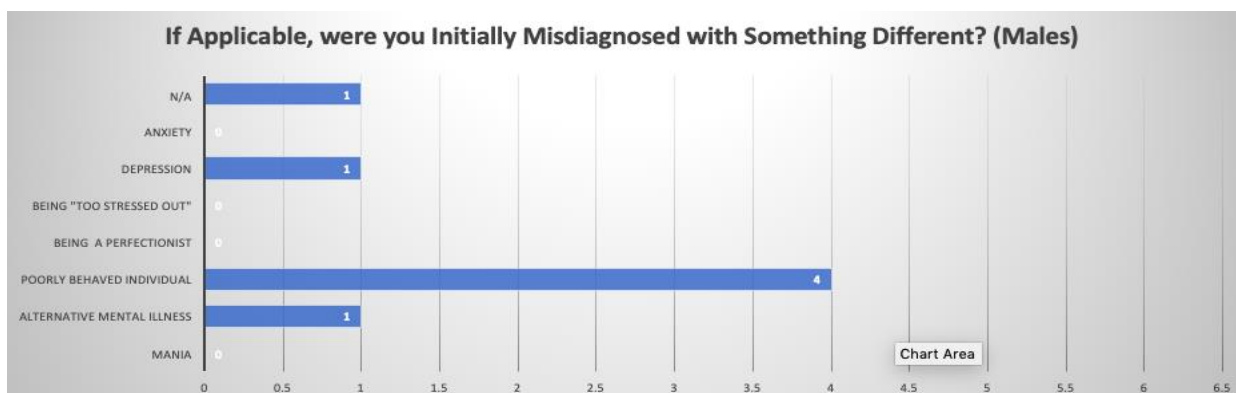


Figure 4: Misdiagnosis in males.

The last notable question asked participants if they were being treated for any other illnesses, indicating the presence of co-occurring illnesses. Results of this question demonstrated that 46% of females and 29% of males are being treated for depression, 62% of females and 14% of males

are being treated for anxiety, and 23% of females and 57% of males have no co-occurring disorder. Additional questions included gender, current age, the professional who made the official diagnosis, and the specific testing that lead to this diagnosis. The results of those questions do not contribute to the information I was trying to obtain from this study when looking at gender differences and will not be addressed.

Analysis

The results demonstrated that 43% of males and 16% of females were diagnosed between the ages of 6-10, which follows with the idea of females having a delayed diagnosis. 54% of females being diagnosed in their 20s compared to 29% of males further supports that idea. Information from the literature review discusses that many more males are diagnosed with ADHD compared to females, particularly in childhood, which is fairly consistent with this data as well. The literature review also mentions that the number of males and females with ADHD in adulthood is very similar. With 54% of females being diagnosed in their 20s, this corresponds with the findings that ADHD diagnoses reach similar levels in adulthood.

Analysis of the data of who prompted the diagnosis in the participants reveals that females had to advocate for themselves in 46% of the cases compared with 29% in males. Furthermore, this revealed that school officials and parents are more likely to prompt the diagnosis when individuals are younger. As the literature review supports, this is often due to obvious disruptive symptoms of hyperactivity and impulsivity. Participants were then more likely to prompt their own diagnosis if they were diagnosed in their teens or twenties. This is often because symptoms are more so related to inattention and are thus internalized. When others

do not recognize that someone is struggling or experiencing difficulties, they are often unable to encourage or recommend testing, and individuals must advocate and speak up for themselves.

The comparison of symptoms exhibited in males and females was more similar than expected and what is discussed in the literature review. 61% of females and 57% of males felt anxious/depressed and 92% of females and 100% of males had difficulty focusing. The feelings of anxiety and depression are said to be more common in females based on other studies, as they are considered internalized feelings, which is more along the lines of female behavior. However, in this study, many males felt this way as well. It is understandable that all of the males exhibited inattention. Being hyperactive often causes one to be inattentive as well and be focused on other activities. Most of the females did feel inattentive, which is in alignment with the literature review and females exhibiting those internalized symptoms. The other statistics, 77% of females and 71% of males being unable to finish tasks, is expected as that is a significant characteristic of ADHD. Both hyperactivity and inattentiveness often prevent individuals from finishing tasks. Reports of impulsivity, which were 85% in females and 71% of males can be displayed in a variety of ways. Females have a tendency to exhibit “silent impulsivity”, by engaging in activities such as spending money without considering the consequences. Males on the other hand, display “loud impulsivity”, engaging in outbursts or speaking with others in ways they otherwise would not have if they had considered the implications. The largest difference was in the report of hyperactivity. 54% of females and 71% of males felt hyperactive. The majority of males did report feeling hyperactive as expected, as the hyperactivity is very characteristic of males with ADHD. The report of 54% of females feeling hyperactive was not expected. The literature review does not support a high percentage of females exhibiting symptoms of hyperactivity.

Reports of misdiagnosis revealed findings consistent with the literature review. Females have a tendency to be initially diagnosed with anxiety or depression for a variety of reasons, such as how symptoms are displayed or the opinions of physicians. Physicians tend to believe ADHD to have a much stronger presence in males and are thus more apt to diagnose males with such, as opposed to looking at depression or anxiety as an alternative. The reports of females being described as “too stressed out” or a “perfectionist” align with societal views of females. Females are often expected to act a certain way or in alignment with certain behavior. When females have a difficult time handling all of their responsibilities, instead of looking for reasons, they have been told that they are too stressed out or need to find ways to manage. Additionally, with being unable to focus for long periods of time, it often takes longer to complete assignments or tasks. When females report that they may require more time to finish something, others may view this as them trying to be a perfectionist, when in reality, they do not have the ability to hold their attention long enough to finish their tasks in a reasonable time frame. Additionally, the reports of males being told that they are poorly behaved is consistent with hyperactivity. Those who act hyperactive are often disruptive and thought to be poorly behaved by educators and parents. Interruption and inability to stay on task are other disruptive behaviors males often exhibit that are also associated with poor behavior.

Co-occurring illnesses are known to make diagnosis much more difficult, especially when symptoms are very similar. Anxiety, depression, and ADHD have symptoms that are very similar to one another. Symptoms such as inattention, irritability, and impulsivity are characteristics of all three illnesses, not just ADHD, which is a challenge for healthcare providers. 46% of females are being treated for depression and 62% with anxiety, in conjunction with the ADHD. This is quite different from 29% of males being treated for depression and 14%

being treated for anxiety. Additionally, 23% of females report no co-occurring disorder and 57% of males report no co-occurring disorder. The presence of co-occurring disorders is much higher in females and is another proposed reason for the misdiagnosis or delayed diagnosis in females. Physicians have a much more difficult time diagnosing individuals appropriately with other illnesses being present simultaneously.

Survey Conclusion

The most relevant data to be obtained from this survey is first the age of initial diagnosis. About half of males reported being diagnosed between the ages of six and ten and about half of females were not diagnosed until their twenties. This certainly demonstrates that females are not diagnosed until much later in life. With 46% of females needing to prompt their own diagnosis, that is further indication that symptoms are internalized and less obvious to those around them, and that they were likely older when they prompted this diagnosis. Females have a tendency to try to cope with their symptoms, and it is not until the symptoms become incredibly problematic to their lifestyle that they begin to look for causes. Additionally, 77% of females are currently being treated for another mental illness such as anxiety or depression. With the presence of co-occurring illnesses making diagnosis so much more difficult, that data is in alignment with females having a significantly delayed diagnosis. There are certainly factors to consider with this survey when interpreting the results. There was a rather small sample size with only twenty participants and the participants come from a variety of communities. Additionally, different families and different education systems may be more equipped to recognize symptoms than others. These factors must be taken into consideration when viewing these results and comparing them to what is present in current literature review on this subject.

Implications

The literature review, physician interviews, and anonymous survey, all display findings which are consistent with gender differences in ADHD. While it is important to recognize that these differences exist, it is also crucial that we understand the implications that this causes. When females are not treated for the appropriate conditions or if they are not treated at all, the consequences continue and begin to multiply as females age. Certainly, academic performance is a large consequence. Being unable to focus or pay attention to detail often causes problems with assignments and doing well on exams. This poor academic performance can also make it so females are unable to finish college as a result (Crawford, 2003). Furthermore, they begin to experience chronic low self-esteem. When they are not performing well or meeting expectations as a result of their symptoms, self-esteem becomes a huge problem (Crawford, 2003). Females are simply not able to feel good about themselves when they continue to struggle. Moving into adulthood, financial problems become another huge factor. Impulsive spending and decision-making causes problems with being able to pay bills. Forgetting information and not being able to pay attention to detail can also cause females to forget about bills or other monetary obligations, leading to these problems (Quinn & Madhoo, 2014). Divorce has also been listed as being more prevalent in women who are not yet diagnosed or treated for ADHD. Problems in relationships begin to occur when the partner with ADHD is not able to focus on the other individual or his or her interests. Being easily distracted can make the partner appear disengaged or uncaring. That individual may not follow through on promises. Additionally, impulsive responses can lead to anger and constant fighting within relationships as well (Quinn & Madhoo, 2014). All of these factors are examples of how relationships can be destroyed by a loved one having undiagnosed or untreated ADHD and can potentially lead to divorce in married couples.

Unemployment has been identified as another consequence for those who are not diagnosed or treated for ADHD. Those individuals often struggle to pay attention in the work place, focus on tasks, and complete them in an efficient manner. Not meeting deadlines or paying attention to detail can have significant ramifications for many institutions. Impulsiveness can also promote poor decision-making or arguments with coworkers, causing additional problems with being able to maintain employment (Quinn & Madhoo, 2014). What has been identified as one of the most concerning implications is that females with ADHD are much more likely to commit suicide or attempt it than females without ADHD. This relates to females who experience impulsiveness associated with ADHD. They are not able to think through decisions or consider consequences of their actions. Furthermore, with all of the peer pressure present in adolescent years, there is a strong possibility for ridicule which is significantly harder to cope with in the case of ADHD. The aspect of not meeting expectations or feeling good enough are also reasons females may impulsively turn to suicide as the only way out. As previously mentioned, co-occurring disorders are fairly common with ADHD, and other psychiatric illnesses such as depression or anxiety contribute to an increased suicide risk as well (Balazs & Keresztesy, 2017).

Future Considerations

Such statistics and implications of females being underdiagnosed or misdiagnosed indicate the need for change with regard to how we go about diagnosing ADHD. One possibility is better education for teachers in order for them to recognize both hyperactive and inattentive symptoms. Teachers may argue that acting as a psychologist and recognizing symptoms is not part of their job. However, they do willingly refer hyperactive individuals for testing, this is largely because of the disruption that they bring to the classroom. If teachers are going to

recognize and take action on behalf of hyperactive students, it is reasonable that we educate them on identifying inattentive ones as well.

Additionally, when an individual presents to a physician's office with concerns of psychiatric symptoms, physicians should consider more than just anxiety and depression. Physicians already regularly use the PHQ-9 (Patient Health Questionnaire-9) and GAD-7 (Generalized Anxiety Disorder 7-Item) scale to evaluate depression and anxiety symptoms. It could be beneficial to add a questionnaire looking for ADHD symptoms as well, especially in individuals under the age of forty. Having an objective questionnaire to evaluate for possible ADHD symptoms to be completed in conjunction with the PHQ-9 and GAD-7 would not be much more time consuming and it may prevent a delayed or incorrect diagnosis. That is not to say that they would need to immediately begin treatment with stimulants or other medication based on their questionnaire, the physician could refer them out for neuropsychology testing or provide them with a more thorough questionnaire to be completed. Regardless of the way a physician chooses to go about official diagnosis, adding in a regular ADHD screening should be considered in healthcare.

College students who have yet to be diagnosed with ADHD experience some of the most detrimental implications. Poor academic performance, not finishing school, financial difficulties, and relationship problems with friends and significant others are all strong possibilities (Rostain, 2016). It is not uncommon for college students to be fearful of speaking up or advocating for themselves. They do not always go to professors for help or physicians when they are concerned with their ability to focus adequately in class and on assignments. Developing a program to screen for possible ADHD in college students before it causes significant problems would benefit both the student and university. Students could perform well in school and realize

possible goals of pursuing graduate school. Universities could achieve higher retention and graduation rates as well. The majority of universities will require accepted students who plan on attending to complete several online tasks. One of the most common requirements is having students complete online modules pertaining to substance abuse that they may encounter while in college. Students are often required to complete such modules before being allowed to register for orientation. Developing a questionnaire or online neuropsychology evaluation that asks enough questions and is enough in depth that it could identify those who may have ADHD, but is not too time consuming either may be of great benefit. Having an online evaluation that goes with other online modules or requirements of the university would ensure that the students would actually complete it and it would be completed before the students begin classes. If the results identify a student as possibly having ADHD, they should be notified and then given the option of either meeting with a physician on campus, if physicians are present on the campus of that university, or recommending they see a physician where they live before beginning school. It would be left to the discretion of the student if they wish to use that information and pursue help, however reaching out to them and identifying ADHD as a real possibility may give students the information and resources that they need to seek assistance before undiagnosed ADHD begins to significantly interfere with their lives.

Finally, there are a few limitations to this research. I spoke with just four physicians and had survey results from just 20 individuals, who were recruited through my Facebook account. Therefore, the results of my study are not generalizable, but the fact that they mirror what was shown in the literature review suggests that the differences between males and females in terms of diagnosing ADHD are consistent across multiple samples. The last limitation of the research, that might easily be explored in a separate study, is that my interview questions might have been

somewhat leading. For example, my first question (What are your opinions on the gender differences associated with ADHD?) might have led physicians to just then believe they had seen differences. Again, however, what the physicians reported is consistent with the literature review. This is certainly a topic that requires further study so that both females and males might be provided the best opportunity to integrate ADHD into their lives in healthy ways.

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