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**ADHD and Lifetime Behavior: The Relationship Between ADHD and Negative  
Behavioral Patterns**

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**Abstract**

Despite more recent recognition, those with ADHD are still often left behind by their peers as they enter a world that is not built to accommodate them. They're often left with less preparation for their entrance into adulthood which may lead to behavioral issues as they grow older. The current study examined neurotypical individuals as well as those diagnosed with ADHD and their behavioral issues in their adult life under the guidance of Agnew's General Strain Theory (2002). Agnew's theory posits that relationships that put strain on individuals may lead to these same individuals committing negative, and often criminal, behaviors. Specifically, this study examined the age of diagnosis, levels of treatment, and severity of ADHD symptoms of participants and whether or not these aspects correlated with the levels of behavioral issues they experienced. It was predicted that the higher the age of diagnosis, the more severe their behavioral issues would be and that a person treated medically for their ADHD will report less severe behavioral issues. It's also predicted that the higher the severity of ADHD symptoms, the higher the severity of behavioral issues. Two out of the four hypotheses were partially supported. The data gathered implied that those diagnosed with ADHD do report a more erratic lifestyle than those who do not. It also implies that those with a high probability of having ADHD report more anti-social behaviors. The research also implies that the higher the severity of ADHD symptomatology, the higher their reported erratic lifestyle is. This research could be used as a foundational study for future research due to its addition to the literature in this realm of study. It could also be utilized for interventions in schools as it emphasizes the need for support of ADHD individuals in order to prevent future problem behavior.

## **ADHD and Negative Behavioral Patterns: The Relationship Between ADHD and Behavioral Issues**

Within the past decade, there has been a slow growth of knowledge in the average household surrounding the ideas of neurodiversity, especially regarding individuals with ADHD or Attention-Deficit/Hyperactivity Disorder. Despite this recognition, those with ADHD are still often left behind by their peers as they enter into a world that is not built to accommodate the way that they perceive what's around them. They're often left with less preparation for their entrance into adulthood and a lack of containment capabilities that may lead to behavioral issues as they grow older. The current study examined those diagnosed with ADHD and their behavioral issues in their adult life under the guidance of Agnew's General Strain Theory (2002). Agnew's theory posits that consistent negative stimuli that put strain on individuals may lead to these same individuals committing negative, and often criminal, behaviors. Specifically, this study examined the age of diagnosis, levels of treatment, and the severity of symptoms of individuals diagnosed with ADHD and whether or not these aspects correlated with the levels of behavioral issues they experienced.

### **General Strain Theory Coupled with ADHD**

General Strain Theory is a relatively new theory proposed by Robert Agnew (2002) that conceptualized three separate forms of strain and negative relationships on individuals and how they have the capacity to lead to criminal behavior. General Strain Theory is actually a revitalized adaptation of an older theory by the name of 'Traditional Strain Theory' which linked delinquency to the vaguer concept of obstacles to material success. Research on this theory continued to lose popularity due to its lack of

substance and continual conflicting results. Agnew's theory differs from this original idea as it explores different categories of strain that may specifically foster delinquency, emphasizing that there cannot be one all-encompassing definition of strain. It also acknowledges the negative affective states that coincide with levels of strain that could also increase probability of delinquency (Mazerolle et al., 2000).

The three forms of strain that Agnew focused on are as follows: strain achieved from prevention of an individual from achieving positively valued goals (e.g. financial struggles, low motivation, lack of clarity, perfectionism, etc.), strain from the removal (or a threat to remove) of positively valued stimuli (e.g. the death of a friend, divorce, financial loss, etc.) and strain from an experience (or threat of experience) of trauma (e.g. physical assault, verbal abuse/insults, neglect, sexual abuse, etc.) (Agnew et. al., 2002). These forms of strain are not only difficult to cope with, but also increase the likelihood of negative affects rising to the surface. These negative emotional experiences then create an immense pressure for "corrective action."

The pressure for corrective action can be experienced and defined in a multitude of ways. Unfortunately, due to a buildup of adverse feelings, the alleviation of this pressure is often attempted in ways which are unhealthy in nature. This can be dangerous or cause negative behavioral patterns in people who are dealing with this strain including but not limited to: impulsive decision making, expression of negative coping mechanisms, or even violent actions. Examples of this could include stealing money, running away from abusive situations, assault, vandalism, drug use as a distraction, etc. (Agnew et. al., 2002).

A great example of strain causing pressure for “corrective action” is found in a study done by Lee and colleagues (2019) wherein they found that bully victimization has a positive correlation with aggressive behavior. As in, the strain experienced by victims of bullies can lead to aggressive behaviors and, in turn, are associated with becoming a perpetrator rather than a victim in order to protect themselves and reduce their feelings of helplessness.

Strain and this negative “corrective action” can be especially relevant in the context of people diagnosed with ADHD as it’s theorized that these negative corrective actions are expressed most by those with high negative emotionality and low constraint (Agnew et. al., 2002); both of which are symptoms of ADHD, suggesting the lesser ability to cope with strain in comparison to the rest of the average population (Johnson & Kercher, 2007).

An example of strain leading to these negative actions in the ADHD population is explored in a dissertation written by Hernandez (2021). His work tackled the concept of alcohol related problems and whether or not they were more severe for those with high childhood ADHD and high risk for Alcohol Use Disorder. To accomplish this goal, Hernandez monitored 81 students between the ages of 18 and 25 as they completed an assessment, neurophysiological measures, and two interviews concerning their diagnoses and a detailed description of their alcohol use. Surprisingly enough, it was not found that individuals with high levels of ADHD consumed alcohol more frequently. However, it was found that those with high levels of ADHD used alcohol in a much more hazardous way (Hernandez, 2021). It could be inferred by this data that the individuals with ADHD could perhaps be self-medicating as a form of this “corrective action”.

### **The Presence of ADHD and Severity of Behavioral Issues**

ADHD is described as a “persistent pattern of inattention and/or hyperactivity-impulsivity that interferes with functioning or development” (American Psychiatric Association, 2013, pp. 59-60). It’s a disorder that begins in and often is conflated with childhood, with a diagnostic requirement of several symptoms present before the age of 12. ADHD is notorious for causing difficulty in executive functioning as well as excessive activity, inattention, and completion of actions without foresight (American Psychiatric Association, 2013). These symptoms are why many researchers suspect the link between ADHD and behavioral issues. These symptoms are also what often cause people with ADHD to experience a large amount of difficulty in functioning as an adult. ADHD continues to be a predictor for academic, professional, psychological, and financial hardship, often leading to excessive strain. (Ford, 2021). According to General Strain Theory, the symptoms of ADHD and therefore the hardships experienced have a high probability of inducing negative behavior.

This probability of negative behavior can be inferred from the data found in a longitudinal study conducted by Mannuzza and colleagues in 2008. Ninety-three boys with ADHD and 93 boys without ADHD had their criminal records assessed at separate intervals in their lives. It was found that the boys with ADHD had significantly more arrests (47%) compared to those who did not have ADHD (24%) (Mannuzza et al., 2008). There is a possibility that this could be due to individuals with ADHD's reported lack of sophistication as offenders due to them being rarely organized or participating well thought out crimes (Vintró-Alcaraz 2021). However, according to the authors of the study, ADHD could also very likely be a predictor of criminal behavior (Mannuzza et al.,

2008). Criminal records and offenses, however, are not the only situations in which individuals with ADHD are predicted to have behavioral issues.

School, as it deals with a lot of practices of executive function (planning, working memory, self-control, time management, etc.), is often a difficult environment for people with ADHD to thrive in. Recently, there was a meta-analysis completed that examined children and adolescent individuals with ADHD and their high school dropout rates. It was found that in the age group explored, people with ADHD were three times more likely to drop out of high school or be held back one or more years and over six times more likely not to attend any form of higher education (Döpfner et al., 2020). This could be due to several reasons, of course, but it's imperative to note the strain that could be occurring due to this difficulty in executive functioning. Individuals with ADHD are found to be approximately 30-40% behind their peers when transitioning from one executive function to the next (Ford, 2021). The expectation of them to then excel in their schoolwork can seem daunting or nearly impossible. Within that same meta-analysis, those diagnosed with ADHD were also found to be far more likely to have a substance use disorder, experience an early pregnancy, suffer from unemployment, or be involved in car accidents in comparison to those who did not have ADHD (Döpfner et al., 2020).

Along with the findings of General Strain Theory, there is also crossover found within disorders such as ADHD and Alcohol Use Disorder that could be predictive of drug related behavioral issues. In an introductory article for a Psychopharmacology journal written by Shirley and Sirocco in 2014, the sensitivity to these comorbid disorders was described as possibly being attributed to the common symptoms of



impulsivity, a lack of control, and a lack of attention that are such integral pieces of both diagnoses. It was expressed that individuals with ADHD can be much more prone to heavy drinking, and therefore prone to developing a disorder (Shirley & Sirocco, 2014).

While it seems to be shown throughout previous data that ADHD can be a predictor of behavioral issues occurring (Mannuzza et. al, 2008; Pitmann, 2011; Young & Cocallis, 2022), what isn't explored is whether or not having ADHD causes a higher or lower behavioral severity. Is that affected by the diagnosis as well?

Hypothesis 1: People with ADHD will report a higher severity of behavioral issues in comparison to those without ADHD.

### **The Role of Treatment in ADHD and Behavioral Issues**

Treatment is incredibly relevant when examining whether or not ADHD correlates with the severity of behavioral issues. There are a few forms of treatment that are explored most often in the context of ADHD. These treatments include medication (specifically methylphenidate hydrochloride and amphetamine), talk therapy, coaching, and Cognitive Behavior Therapy (Ford, 2021).

Medication is, however, the most often discussed treatment for individuals diagnosed with ADHD. This is most likely due to its ease and acceptability as a way to implement treatment in childhood. Studies show that usage of medical treatment correlates with long-term beneficial effects on academic achievement, employment, and social functioning (Döpfner et al., 2020). In this way, medication, according to the data, can be positively life-altering for people with ADHD.

Specifically, regarding offensive or criminal behavior, research conducted in Sweden found that treatment with medication for ADHD resulted in a decreased

likelihood for committing criminal offenses. Researchers examined 25,656 adults diagnosed with ADHD between the years of 2006 and 2009, before and after being prescribed ADHD medication. They found that over this span of time, there was a significant change in the likelihood of criminal activity. The research showed that women with ADHD were 41% less likely to commit criminal offenses when taking prescribed drugs as treatment and men with ADHD were 32% less likely to commit criminal offenses under the same circumstances. Researcher Fazel posits that drug treatment may reduce criminality through the softening of impulsivity as well as aggressive tendencies. He also expressed that the reduction in offenses could be due to medication making it easier for individuals with ADHD to hold down a job, alleviating the strain of prospective monetary issues. (Torjesen, 2012).

With these studies in mind, it's also important to recognize that by 2003, there were little to no studies of adult ADHD medication usage that had lasted longer than four months (Bascelli et al., 2003). That's a very short time frame, especially considering how much we prescribe said medication and keep adults with ADHD on the same prescription. Most of the studies that exist have a main focus on children, as this is when ADHD is most commonly diagnosed. Even so, results tend to trend in a positive direction. For example, in a study on the drug Methylphenidate that was performed on 256 children diagnosed with ADHD, it was found that 77% of those children responded favorably to a low, intermediate, or high dose. The researchers can then infer that most children with ADHD who start on Methylphenidate will respond in a positive manner, depending on the dose given (Bascelli et al., 2003). However, it's important that we

continue research in the realm of medical treatment for adult ADHD, as we have very little data pertaining to the stimulants and how they affect people once they're grown.

As previously mentioned, medication is not the only source of treatment for individuals with ADHD. Interventions in the form of talk therapy, CBT or other treatments can be extremely beneficial as well. In a report done by Pittman (2011), a study conducted on 90 students with ADHD is referenced. This study explored whether or not school-based intervention influenced the number of negative referrals received by these students. This study sampled from students between the ages of 12 and 15, separating them into three groups: a control group, a comparison group, and a treatment group. The treatment group was particularly interesting in this context as those who were in that group were exposed to an intervention to assist them in their behavioral issues. Programs working with children with ADHD, along with paying them positive attention, seemed to have a positive impact on especially impulsive students with ADHD (Pittman, 2011). This finding could be predictive of treatment that is specifically targeted toward assessing behavioral issues and is focused on interventions that are positive in nature leading to children with more severe behavior issues (regarding impulsivity) having less negative behavioral patterns.

Hypothesis 2: A person treated medically for ADHD will report less severe behavioral issues comparison to a person with ADHD who has not been treated medically.

### **Age of Diagnosis and Behavioral Issues**

As a person with ADHD gets older, there are many possible ways in which strain may manifest, leading to problematic behavior. This is especially interesting in the context of the age at which the person was diagnosed. There's an argument on both

sides of the spectrum for who may experience more strain or discrimination: the person diagnosed earlier or later. If diagnosed earlier, it is possible that the strain of dealing with the stereotypes and weight of an ADHD diagnosis are heavier. If diagnosed later, it's also possible that the strain of having to create one's own coping mechanisms with a lack of context on why things may be more difficult for them would be heavier. Both ends of the spectrum have strain that's important to recognize, however, it's hard to tell who experiences more and therefore acts out more negatively in terms of behavior. There isn't much research to back up either side and past research is conflicting.

In a study performed by Zahmaciohlu and Kilic in 2017, a group of 117 adolescents, 62 with a "later" diagnosis (diagnosed between the ages of 12 and 14 years old) and 55 with an "earlier" diagnosis (diagnosed between the ages of 6 and 8 years old) were examined for their levels of self-esteem and loneliness. The results showed that those with a "late diagnosis" not only had lower levels of self-esteem compared to those with an "early diagnosis," but that they also had higher levels of loneliness. This led researchers to the conclusion that early diagnosis of ADHD is an important factor for an individual with ADHD to feel secure in transitioning into adolescence (Zahmaciohlu & Kilic, 2017). A lack of security in the transition from childhood to adolescence can cause immense strain on young people. Not to mention that in accordance with General Strain Theory, strain such as a lack of security can cause behavioral issues or acting out.

However, in other studies, especially those in community-based samples, have shown that a childhood diagnosis of ADHD is often associated with underachievement, negative occupational outcomes, and poor social functioning (Döpfner et al., 2020)

rather than higher levels of self-esteem and lower levels of loneliness. Even so, this association of childhood diagnoses of ADHD and under achievement, issues in the workplace, and poor social functioning could be due to the similar discrimination and hardships that those without the diagnosis face. ADHD is a disorder that causes issues in executive function, whether diagnosed or not. Executive disfunction could naturally lead to perceived underachievement (maybe due to a lack of motivation), issues in finding consistent work (perhaps because of missing deadlines or consistent tardiness), and poor social functioning (probably because of differences in perspectives or priorities). In this way, these negative outcomes are more than possible in both parties, early diagnosis or not. As this study doesn't compare differing ages of diagnoses, just the basis of a childhood diagnosis, it cannot be assumed that the associations found are worse or better in those with childhood diagnoses compared to those with adult diagnoses.

A more neutral example of this contradictory research lies in a dissertation done by Ford (2021). Ford's research focused on adult students with ADHD, their GPAs, and the age in which they were diagnosed with ADHD. Specifically, the students were split into groups of "early diagnosis", consisting of individuals who received a diagnosis at ages sixteen and younger, and "late diagnosis", consisting of individuals who received a diagnosis at ages seventeen or older. There were 72 participants total, evenly split down the middle into the two groups. It was found after analysis that there is no statistically significant difference in GPA scores based on time of diagnosis. This implies that there is no relationship at all between age of diagnosis and success rates (Ford, 2021). This lack of relationship could cause one to predict that the age of

diagnosis has nothing to do with the behavior of a person with ADHD as their success rates are equal. However, the operational definition of success within this study measured success by GPA scores, not anything having to do with the actions and behavior of the person being studied. Considering it is possible to maintain a high GPA while also experiencing behavioral issues, there is too little information within this study to assume anything regarding behavior.

Treatment length in the context of age of diagnosis is also explored in a dissertation completed by Wilson (2021). Their text specifically tackles the length of treatment in individuals with ADHD (which in turn correlates with their behavior later on) along with the relationship between family dynamics, gender, age, and race of children with ADHD. Specifically, the third hypothesis within the dissertation indicated that there is a relationship between age of diagnosis (as well as gender and race) and the onset and length of ADHD treatment. It was found that there was in fact a moderate relationship between a child's age of diagnosis and their length of treatment (Wilson, 2021). While more research and analysis would be needed in order to come to a conclusion in what this relationship is and whether or not treatment is longer for those who are younger at diagnosis, there is a relationship to explore there. If the assumption that the longer a person is receiving treatment, the less difficulty they will experience in regard to their ADHD symptoms is made, then that treatment length could be predictive of a lower amount of behavioral issues. Therefore, once it's more clear if those with early diagnoses or late diagnoses receive a longer length of treatment, a prediction could be made regarding age of diagnosis and behavior.

Hypothesis 3: The later in life a person is diagnosed with ADHD, the more severe their reported behavioral issues will be within adulthood.

### **Severity of Symptoms and Severity of Behavioral Issues**

It's imperative to note ADHD doesn't look the same for each individual who has it. A person meeting the criteria for a diagnosis of ADHD does not immediately predict levels of negative behavior, let alone to what extent the disorder may affect their life. The diagnosis of ADHD lies on a spectrum of symptoms from mild to severe as explained in the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition. ADHD at its most mild is described as an experience when none to only a few of the symptoms required to make the diagnosis are experienced in excess and there are only minor difficulties in social or executive functioning. ADHD at its most severe, however, is described as experiencing many of the symptoms required to make the diagnosis in excess, resulting in obvious and immense difficulties in social or executive functioning. (American Psychiatric Association, 2013). What symptoms experienced, then coupled with the severity of one's symptoms may then influence the way in which one person with ADHD behaves in comparison to another.

In an article previously mentioned, by Shirley and Sirocco (2014), regarding ADHD and alcohol use disorder (AUD), it was inferred that specific symptoms of ADHD, such as impulsivity and impaired working memory may make control over the mind more difficult and therefore cause a higher sensitivity to disorders such as AUD. This implies that other symptoms of ADHD, such as sustaining attention and difficulty with organization that are experienced might not be related to a sensitivity to disorders like AUD. The levels of severity of such symptoms were not explored in the article, but the

findings did imply that that someone who has more severe symptoms in one area of the ADHD diagnosis may find their ADHD leading to different actions in comparison to someone who has more severe symptoms in a different area of diagnosis.

Research similar to the relationship between substance use and ADHD was conducted by Vitró-Alcaraz and colleagues (2021), where 20 women and 184 men were interviewed regarding their experiences with Gambling Disorder, whether or not they experienced symptoms of ADHD, and their participation in criminal offenses. This research, however, had more to do with ADHD symptoms overall rather than comparing differing specific symptoms such as impulsivity. While the ADHD symptoms alone were not found to have effects leading to the commitment of crimes, it was found that there was a greater presence of ADHD symptoms in those with gambling disorder who had reported criminal behavior (Vitró-Alcaraz et al. 2021). In more simplistic terms, if individuals had already committed crimes, they were more likely to experience ADHD symptoms than those who had not (despite there being a lack of correlation between the symptoms alone and crime). Based on this data, it could be inferred that those with a more severe form of ADHD (or those who experienced ADHD symptoms at a more severe level) may be more likely to commit crimes than those with a milder form of ADHD (who may experience said symptoms often but in a less intense manner).

Within the previously mentioned Pittman (2011) study, ADHD alone wasn't all that was being explored. While all of the individuals participating did have ADHD, the researcher also had these individuals take an assessment based on their impulsivity levels and studied the children through the lens of their severity of impulsivity as well. It was found that even in the group that received interventions, highly impulsive students



received a very large quantity of office referrals in comparison to the students with low impulsivity levels. Within the total group of students marked as “low impulsivity” only nine office referrals were received. However, within the treated group (excluding impulsive students who were untreated) of students with high impulsivity levels, there were 75 office referrals received (Pittman, 2011). That is a very large range of behavioral consequences for individuals with the same disorder, implying that this one symptom of impulsivity seemed to impact some students more than others.

It is also interesting to note that within Hernandez’s previously mentioned dissertation research (2021), college students with a childhood history of high and low levels of ADHD symptoms were monitored based on their scores on the Wender-utah Rating Scale, the Barrett Impulsiveness Scale, and the Barkley Deficits Executive Functioning Scale, making sure that there were multiple measures expressing their differing levels of ADHD. Hernandez conducted interviews with the participants and asked various questions regarding their consumption of alcohol and other substances. Nearly 90% of those who had high severity of ADHD symptom experience also had high risk for AUD have used psychoactive drugs, compared to the 48% of individuals with low severity of ADHD symptom experience and high AUD risk. It was also found that those with severe ADHD symptom experience were much more likely to begin drinking at a younger age (below 15 years) (Hernandez, 2021). This is yet another example in which severe symptoms of ADHD seem to correlate with certain behaviors.

Hypothesis 4: The severity of the symptoms that a person with ADHD is reported to experience has a positive relationship with the severity of the behavioral issues they have experienced.

## Method

### Participants

Forty-Nine undergraduate students from Chapman University were selected from the undergraduate psychology participant pool to participate in this study along with sixty-six Non-Chapman students recruited through social media in combination with the California State Dominguez Hills undergraduate psychology participant pool. This added up to a total of 115 participants. There were 24 man identified individuals (20.9%), 85 woman identified individuals (73.9%), 5 non-binary identified individuals (4.3%) and 1 individual who preferred not to respond (0.9%). The mean age was 22.17 (SD = 4.6) years with a range of 18 – 46 years. 20 participants (17.4%) identified being diagnosed with ADHD and 95 participants (82.6%) identified never being diagnosed with ADHD. Of those individuals, 10 (8.7%) identified as being medically treated before, 1 (.9%) identified as being therapeutically treated, 6 identified as being treated both medically and therapeutically, 18 (15.7%) identified as never being treated before, and 80 (69.6%) expressed once again that they had not been diagnosed with ADHD. The race/ethnic breakdown was as follows:

- 53 (46.1%) self-identified as White/Caucasian.
- 11 (9.6%) self-identified as Black/African American.
- 16 (13.9%) self-identified as Asian American.
- 4 (3.5%) self-identified as North African/Middle Eastern
- 5 (4.3%) self-identified as Indigenous.
- 24 (21%) self-identified as Hispanic//Latin/Latino/Latina/Latinx
- 1 (.9%) self-identified as Caribbean

- 3 (2.6%) self-identified as Mexican
- 5 (4.3%) preferred not to respond to the question

The sexual orientation breakdown was as follows:

- 83 (72,2%) self-identified as Heterosexual.
- 4 (3.5%) self-identified as Gay/Lesbian.
- 19 (16.5%) self-identified as Bisexual.
- 1 (0.9%) self-identified as Pansexual.
- 6 (5.2%) self-identified as Queer
- 1 (0.9%) self-identified as Asexual.
- 1 (.9%) preferred not to respond to the question.

## **Materials**

The current study used the Adult ADHD Self-Report Scale (ASRS) (Kessler et al., 2005) and the Self Report Psychopathy (SRP III) Scale (Bussche et al., 2015). The ASRS was used to measure whether or not it is probable that a person has ADHD and rescaled to measure the severity of ADHD symptoms in adulthood. According to the original scale, which only utilizes Part A of the ASRS, it is scaled using a Likert-type scale (0-1) with 0 representing “Never” and “Rarely” and 1 representing “Sometimes”, “Often”, and “Very Often” on the first three questions. On the second three questions it is scaled slightly differently with 0 representing “Never”, “Rarely”, and “Sometimes” and 1 representing “Often”, and “Very Often”. Higher scores indicate experience of ADHD symptoms. If someone gets a total score of 4 on Part 1, then they’re likely to have

ADHD. The ASRS was also re-scaled and used to measure the severity of ADHD symptoms in adulthood. The re-scaled survey has a total range of 0– 72, with higher scores indicating more severe ADHD symptoms. It has a total mean score of 34.3 (SD = 13.5) (Olofstodtter, 2023). The test-retest reliability of the survey is .88 and the construct validity of the survey is .84 (Adler et al., 2006). The survey is 18 questions long and is estimated to take 5 minutes to complete.

Examples of questions in the survey include:

*How often do you have difficulty getting things in order when you have to do a task that requires organization?*

*How often do you have problems remembering appointments or obligations?*

The complete ASRS is located in Appendix A.

The Self Report Psychopathy (SRP III) Scale (Paulhus et. al., 2003). was used to measure the severity of behavioral issues within students. The survey is split into four sub scales and a total score. The sub scales include: Interpersonal Manipulation, Callous Affect, Erratic Lifestyle, and Anti-Social Behavior. Within the study, only the sub scales of Erratic Lifestyle (ELS) and Anti-Social Behavior (ASB) were utilized as they both have to do with behavioral issues. The survey is based on mean scores, with higher scores indicating psychopathic tendencies or, in this case, severity of behavioral issues. According to the manual, it has a mean score of 2.97 (ELS=3.31, ASB=3.00) in male offenders in Wisconsin, 2.20 (ELS=2.56, ASB=1.56) on College Students in Texas and UBC and 1.75 (ELS=1.94, ASB=1.25) in the Eugene-Springfield Community (Paulhus et. al., 2003). The test-retest reliability of the total survey is .92 and the validity for this scale could not be located. (Gordts et al., 2015). The survey is 64 questions

long and is estimated to take fifteen minutes to complete. The version we utilized (with only two of the sub scales) was 31 questions long, 16 questions and 15 questions respectively, and took an estimated five minutes to complete. Examples of questions in the ELS portion of the survey include:

*I have taken illegal drugs (e.g. marijuana, ecstasy)*

*I rarely follow the rules.*

Examples of questions in the ASB portion of the survey include:

*I have tricked someone into giving me money.*

*I have assaulted a law enforcement official or social worker.*

The survey is scaled using a Likert-type Scale (1-5) with a 1 representing “disagree strongly” and a 5 representing “strongly agree”.

The two subscales utilized in this study from the SRP III are located in Appendix B.

## **Procedure**

Participants were recruited from the psychology participant pool in the SONA system at Chapman University and the psychology participant pool at California State Dominguez Hills. There were also participants recruited through Instagram in a post with the text: “Want to help me gain data for my thesis on ADHD? Anyone 18+ can participate! Just click on one of the options below” with two anonymous link options offered, one for those who were Chapman students and one with those who were not.

Each participant filled out the survey online in a secure, anonymous fashion through Qualtrics. The participants started the survey with a detailed informed consent page

with information on the study, a mental health resources list, and a choice between “Yes, I consent to participate in this study” and “No, I do not consent to participate in this study”. There was also an option to download the consent form if deemed necessary. For this portion, if they did not consent to participate, they were redirected to the end of the survey. If they did consent to participate, they were directed to the first page of questions. There was no priming that occurred for participants.

Participants were given five questionnaires throughout the survey. The first was regarding demographics with the second being labeled “general inquiries” and asking about their experiences with a diagnosis (or lack thereof) of ADHD. The third questionnaire was the SRP III’s sub scale for Erratic Lifestyle, the fourth questionnaire was the ASRS, and the fifth questionnaire was the SRP III’s sub scale for Anti-Social Behavior.

Participants received compensation in one of two ways through this experiment. Non-Chapman students were entered into a raffle for a \$15 gift card and Chapman Students were offered 0.25 research credits via the SONA system.

## **Results**

Hypothesis 1 stated that people with ADHD would report a higher severity of behavioral issues in comparison to those without ADHD. Four independent t-tests were run to test this hypothesis. The first two independent t-tests were run to examine the differences between those diagnosed with ADHD and those who were not diagnosed with ADHD on two measures of behavioral issues. The measures of behavioral issues were the Erratic Life Style sub scale and the Anti-Social Behavior sub scale of the SRP

III. The possible range on both measures documenting behavioral issues was 1-5, where higher scores indicated a higher severity of behavioral issues. The obtained range was 1-5. The mean score on the ASB for those diagnosed with ADHD was 2.6 ( $n=20$ ;  $SD= 0.4$ ) whereas those who were not diagnosed with ADHD had an average of 2.5 on the ELS ( $n=94$ ;  $M=2.5$ ,  $SD= 0.5$ ). There was not a statistically significant difference in scores on the ASB ( $t(112)=1.3$ ,  $p=.104$ ). The mean score on the ELS for those diagnosed with ADHD was 3.1 ( $n=20$ ;  $M=3.1$ ,  $SD= 0.5$ ) whereas those who were not diagnosed with ADHD had an average of 2.8 on the ELS ( $n=95$ ;  $M=2.8$ ,  $SD= 0.4$ ). There was a statistically significant difference in scores on the ELS ( $t(113) =2.9$ ,  $p=.003$ ). Two more independent t-tests were run to examine the difference between those who scored a four or higher on the first half of the ASRS, indicating probable ADHD, and those who scored less than four on the first half of the ASRS, indicating a lack of ADHD, on the behavior scales. The mean score on the ASB for those who scored a four or above on the ASRS was 2.6 ( $n=61$ ;  $M=2.6$ ,  $SD= 0.4$ ) whereas those who scored below 4 on the ASRS had an average of 2.4 on the ASB ( $n=53$ ;  $M=2.4$ ,  $SD= 0.4$ ). There was a statistically significant difference in scores on the ASB ( $t(112) =2.8$ ,  $p=.003$ ). The mean score on the ELS for those who scored a four or above on the ASRS was 3.0 ( $n=61$ ;  $M=3.0$ ,  $SD= 0.4$ ) whereas those who scored below 4 on the ASRS had an average of 2.7 on the ELS ( $n=54$ ;  $M=2.7$ ,  $SD= 0.4$ ). There was a statistically significant difference in scores on the ELS as well ( $t(112) =2.8$ ,  $p=.003$ ). This provides partial support for Hypothesis 1.

Hypothesis 2 stated that a person medically treated for ADHD will report less severe behavioral issues in comparison to a person with ADHD who has not been

treated medically. Two independent t-tests were run to examine the differences between those treated for ADHD and those untreated for ADHD on two measures of behavioral issues. The mean score on the ASB for those treated for ADHD was 2.7 ( $n=16$ ;  $M=2.7$ ,  $SD= 0.3$ ) whereas those untreated for ADHD had an average of 2.3 on the ASB ( $n=4$ ;  $M=2.3$ ,  $SD= 0.8$ ). There was not a statistically significant difference in scores on the ASB ( $t(18) = 1.7$ ,  $p=.057$ ). The mean score on the ELS for those treated for ADHD was 3.1 ( $n=16$ ;  $M=3.1$ ,  $SD= 0.5$ ) whereas those untreated for ADHD had an average of 2.3 on the ELS ( $n=4$ ;  $M=3.1$ ,  $SD= 0.4$ ). There was not a statistically significant difference in scores on the ELS ( $t(18) = -0.1$ ,  $p=.460$ ). Therefore, hypothesis 2 was not supported.

Hypothesis 3 stated that the later in life a person with ADHD is diagnosed with the disorder, the more severe their reported behavioral issues will be within their adolescence and adulthood – thus two Pearson correlations were run to test this hypothesis. The measures of behavioral issues were the Erratic Life Style sub scale and the Anti-Social Behavior sub scale of the SRP III. The possible range on both measures documenting behavioral issues was 1-5, where higher scores indicated a higher severity of behavioral issues. The obtained range was 1-5. were run to examine the differences between those diagnosed with ADHD and those who were not diagnosed with ADHD on two measures of behavioral issues. The measures of behavioral issues were the Erratic Life Style sub scale and the Anti-Social Behavior sub scale of the SRP III. The possible range on both measures documenting behavioral issues was 1-5, where higher scores indicated a higher severity of behavioral issues. There was not a significant correlation ( $r=-0.1$ ,  $p=.330$ ) between age of diagnosis ( $M=15.4$ ,  $SD=7.5$ ) and score on the ASB



( $M=2.6$ ,  $SD=.4$ ). There also wasn't a significant correlation ( $r=-0.003$ ,  $p=0.494$ ) between age of diagnosis ( $M=15.4$ ,  $SD=7.5$ ) and score on the ELS ( $M= 3.1$ ,  $SD=0.5$ ). Therefore, Hypothesis 3 was not supported.

Hypothesis 4 stated that the severity of ADHD symptoms that the participant reported is positively correlated with the severity of the behavioral issues they reported. This was tested by running a Pearson correlation test. The severity of symptoms was measured by re-scaling the ASRS scale to a Likert-type scale ranging from 1-4 with the total combined score revealing how severe the behavioral issues exhibited are. There was not a significant correlation ( $r=0.2$ ,  $p=.059$ ) between severity of symptoms ( $M=55.3$ ,  $SD=11.8$ ) and score on the ASB ( $M=2.5$ ,  $SD=0.5$ ). However, there was a significant positive correlation ( $r=0.5$ ,  $p< .001$ ) between severity of symptoms ( $M=55.3$ ,  $SD=11.8$ ) and the score on the ELS ( $M= 2.8$ ,  $SD=0.4$ ). This serves as partial support for the fourth hypothesis.

### **Discussion**

This study examined self-reported paths of negative behavioral patterns in order to provide more context to this realm of study. Within the data collected, it was found that two of the four hypotheses were partially supported.

The first hypothesis that had partial support was Hypothesis 1, which stated that people with ADHD would report a higher severity of behavioral issues in comparison to those without ADHD. Four independent T-Tests were run in order to measure whether or not those diagnosed with ADHD, or those with a high probability of ADHD, reported a more erratic lifestyle (e.g. Enjoying taking risks, high speed driving, gambling) and/or report exhibiting more anti-social behaviors (e.g. being convicted of a crime or

assaulting a police officer) than those who are not diagnosed with ADHD and/or have a low likelihood of having ADHD. The data gathered implies that those diagnosed with ADHD do report a more erratic lifestyle than those who do not. It also implies that those with a high probability of having ADHD report more anti-social behaviors (e.g. being convicted of a crime or assaulting a police officer) along with that more erratic lifestyle.

Hypothesis 4, which stated that the severity of ADHD symptoms that the participant reported is positively correlated with the severity of the behavioral issues they reported, was also partially supported. Two Pearson correlation tests were run in order to compare the severity of ADHD symptoms, measured by a re-scaled ASRS, and severity of behavioral issues, measured through the ELS and the ASB portions of the SRP III. In regard to the ELS, there was a significant positive correlation between the severity of ADHD symptoms experienced and the score on the ELS. This implies that those who report a higher severity of ADHD symptoms also report a more erratic lifestyle.

Prior research claims that ADHD is a predictor of behavioral issues (Mannuzza et al, 2008; Pitmann, 2011; Young & Cocallis, 2022), and his study adds to the literature by providing evidence that having ADHD is correlated increased severity of said behavioral issues. This study also adds to the literature by supporting that a higher severity in symptoms can also lead to a higher amount of behavioral issues. This expands upon the research previously done that showed a correlation between more severe ADHD symptoms and criminal offenses being committed (Vintró-Alcaraz et al., 2021; Hernandez, 2021). Due to the implications of the study, it could be utilized in many ways. Firstly, it could be used as a foundation for future research as it does add to

the literature regarding the relationship between those with ADHD and negative behavioral patterns. If we assume, due to the data gathered, that a higher severity of symptoms can lead to more problem behaviors, we can then begin to explore why that occurs and what specific symptoms may be correlated with behavioral issues.

This study could also be utilized for interventions or in schools as it emphasizes the importance of support and attention in regard to individuals with ADHD. If people are aware that a specific group of people are predisposed to problem behavior (sometimes criminal in nature) then it becomes much more clear why the disorder cannot be ignored. This could eventually in turn promote a more promising livelihood for those with ADHD.

There were many limitations to this study. Firstly, due to time-constraints, there wasn't much time to workshop issues within the survey, nor was there time to recruit a lot of participants. There are improvements that could be made upon the measures utilized. I recommend a different scale from the ASRS that is specifically utilized in function for ADHD symptom severity measurement. It was also difficult to measure the severity of behavioral problems due to all committed negative behaviors being ranked the same number of points in the SRP III. If recreating the study, it may be beneficial to either create a new scale or find a more specific assessment of severity of behavioral issues.

The participant pool was also small and unbalanced. There was a very small pool of participants who actually were diagnosed with ADHD compared to those who do not have a diagnosis. This could have skewed the data. There was also a very uneven distribution of gender due to the participants being recruited from a woman dominated

major at Chapman University. It's also important to recognize that most of the individuals recruited had higher educational levels than the average population and were likely to have a higher SES status due to the tuition rate at Chapman University. There was also a disproportionate amount of straight, white, and young individuals who participated in this survey. The data would be more useful with a larger, less homogenous participant pool.

Overall, the importance of recognizing the difficulties faced by those with ADHD is overwhelmingly apparent. The evidence pointing to their lack of preparation for the neurotypical world and of experiences of behavioral issues is overwhelming. Agnew's General Strain Theory (2002) explains this phenomenon through the lens of negative experience and how strain can lead to unsavory behavioral patterns. It's exponentially important, as this evidence and research continues to grow, to examine why it is that these negative behavioral patterns occur. If previous studies, in combination with the current study, support the idea that people with ADHD report higher levels of behavioral issues, with the severity of their symptoms impacting the severity of the issues, it's important that we re-evaluate how we work with individuals who have ADHD. Perhaps, it is not the individuals with ADHD and their negative behavioral patterns that are impacting society, but society's lack of attention given to those with ADHD that are impacting them.

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## Appendices

### Appendix A

The Adult ADHD Self Report Scale (ASRS)

Please answer the questions below, rating yourself on each of the criteria shown

1. How often do you have trouble wrapping up the final details of a project once the challenging parts have been done?
2. How often do you have difficulty getting things in order when you have to do a task that requires organization?
3. How often do you have problems remembering appointments or obligations?
4. When you have a task that requires a lot of thought, how often do you avoid or delay getting started?
5. How often do you fidget or squirm with your hands or feet when you have to sit down for a long time?
6. How often do you feel overly active and compelled to do things, like you were driven by a motor?
7. How often do you make careless mistakes when you have to work on a boring or difficult project?
8. How often do you have difficulty keeping your attention when you are doing boring or repetitive work?
9. How often do you have difficulty concentrating on what people say to you, even when they are speaking to you directly?
10. How often do you misplace or have difficulty finding things at home or at work?
11. How often are you distracted by activity or noise around you?

12. How often do you leave your seat in meetings or other situations in which you are expected to remain seated?

13. How often do you feel restless or fidgety?

14. How often do you have difficulty unwinding and relaxing when you have time to yourself?

15. How often do you find yourself talking too much when you are in social situations?

16. When you're in a conversation, how often do you find yourself finishing the sentences of the people you are talking to, before they can finish them themselves?

17. How often do you have difficulty waiting your turn in situations when turn taking is required?

18. How often do you interrupt others when they are busy?

## **Appendix B.**

### Self-Report Psychopathy Scale (SRP III)

Please rate the degree to which you agree with the following statements about you.

You can be honest because your name will be detached from the answers as soon as they are submitted.

Average 16 items in each subscale to get their means.

The overall SRP-III score is simply the mean of the four subscales on a 5-point scale.

#### Erratic Lifestyle

1. I am a rebellious person.
2. I have taken illegal drugs (e.g. marijuana, ecstasy).
3. I've often done something dangerous just for the thrill of it.

4. I always plan out my weekly activities.
5. I never miss appointments.
6. I hate high speed driving.
7. I enjoy doing wild things.
8. I rarely follow the rules.
9. I don't enjoy gambling for real money.
10. I like to have sex with people I barely know.
11. I am an impulsive person.
12. I don't enjoy taking risks.
13. I keep getting in trouble for the same things over and over.
14. I easily get bored.
15. I admit that I often "mouth off" without thinking.

#### Anti-Social Behavior

1. I have never been involved in delinquent gang activity.
2. I have never stolen a truck, car, or motorcycle.
3. I have tricked someone into giving me money.
4. I have assaulted a law enforcement official or social worker.
5. I have never tried to force someone to have sex.
6. I have never attacked someone with the idea of injuring them.
7. I have broken into a building or vehicle in order to steal something or vandalize.
8. I have never been arrested.
9. I have taken hard drugs (e.g., heroin, cocaine).
10. I never shoplifted from a store.

11. I was convicted of a serious crime.

12. Every now and then I carry a weapon (knife or gun) for protection.

13. I have threatened people into giving me money, clothes, or makeup.

14. I have close friends who have served time in prison.

15. I purposely tried to hit someone with the vehicle I was driving.

16. I have violated my parole from prison.