

Systematic Review of Social and Executive Functioning in Women with ADHD

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There is a lot of research about males with ADHD but the research about the effects of ADHD on females is scant. This is unfortunate because women are going for long periods of time without receiving proper diagnoses, therefore treatment, and suffer because of it. Through the current research no major theories were found on the causes of deficits in social functioning in those with ADHD or the effects of ADHD on social functioning.

According to the Centers for Disease Control and Prevention (CDC, 2016), about 9.4% of U.S. children have ever been diagnosed with ADHD and boys are more likely to be diagnosed than girls (12.9% versus 5.6%). Ramtekkar et al. (2010) concluded that males were diagnosed with ADHD more often, perhaps because female ADHD goes undiagnosed frequently. The authors also concluded that ADHD symptoms present differently throughout development and, although the DSM bases criteria on children, adults with a history of ADHD are likely to express symptoms into adulthood more than the general population. Mowlem et al. (2019), stated that the male to female ratio of childhood ADHD diagnosis ranges from 2:1 to 10:1. Mowlem et al. (2019), also found that females are more likely to be missed in the diagnostic process and are less likely to receive medication unless their symptoms are external and disruptive, which are the symptoms commonly present in males.

In childhood, females are not being screened as frequently as males because their symptoms are more internal and less disruptive. The DSM diagnostic criteria is geared towards children, but studies like that of Ramtekkar et al. (2010), have found that ADHD presents differently at different ages. This means that females are missing the opportunity to be assessed properly in childhood and receive early intervention, but it also means that females are less likely to receive a proper diagnosis later in life. Many females are misdiagnosed with anxiety,

depression, bipolar, and so forth. This information suggests two things: many females are not receiving a diagnosis and struggle with ADHD symptoms into adulthood without proper treatment or support; and that different diagnostic criterion needs to be established for different age groups especially since many women are being diagnosed in adulthood.

According to Bosc (2000) social functioning refers to an individual's ability to perform social tasks and "ability to fulfill their role within such environments as work, social activities, and relationships with partners and family." According to Diamond (2013), executive functioning are the skills that allow us to challenge our brains and allow our brains to face challenges; executive functions are things like inhibition or self-control, interference control (the ability to ignore irrelevant stimuli and choose what to focus on), working memory, and cognitive flexibility. As aforementioned, ADHD symptomology presents differently in men and women. Men often express externalizing symptoms while women often express internalizing symptoms. Social and executive functioning, although expressed externally, are internal processes that may potentially be affected in women by ADHD. The aim of this systematic review is to determine what existing research says about the relationship between social and/or executive functioning in women with ADHD. Is there any association between the diagnosis of ADHD and social functioning among females?

Literature Search Process

The initial topic to be researched was the effect of a late diagnosis of ADHD on social functioning in adult females. This topic was difficult to find research on and was adjusted, although articles found in some of the initial sources were still used. The basic requirements for the articles were that they were peer-reviewed publications that I was able to have full-access to either directly through the database or through an interlibrary loan. I used the Milligan "One

Search” function, which searches several databases including PsycINFO and PsycARTICLES. Articles used were published between 2012-2019 excluding one article that was published in 2006 but was connected to another article used and considered relevant to the current review. The subject matter for this review was women with ADHD, but there is not as much research about women as there is about men with ADHD. Some articles with men included in the data set directly studied social functioning and examined the similarities between the findings in men and women with ADHD. This will be expounded upon in the table description section of the review.

The first set of Boolean search terms included ADHD AND adult females AND diagnosis, which rendered 2,154 results from 2017-2022. The second set of search terms included ADHD AND adult females AND late diagnosis. This rendered 47 results from 2017-2022. The search was expanded to include 2012-2022 and that search yielded 114 full-text, peer-reviewed articles. Many of these results were geared towards the diagnosis of autism spectrum disorder which was not relevant to the goals of the review. Many of these results also included information about late onset ADHD, which is also different from the original goal of studying women who experienced ADHD in their early life but did not receive a diagnosis until later. “Late onset” ADHD indicates that those people did not experience ADHD previously but began to experience it later in life. Most articles about “late onset” ADHD were not included besides one study that concurrently studied other variables related to the studied.

The next set of Boolean search terms included ADHD AND adult females AND social functioning. These terms yielded 219 results from 2017-2022 and 358 results from 2012-2022. Many of these results were about ADHD and social functioning in female childhood and adolescence. Since the terms were not yielding as many relevant results, the topic was expanded to include female children, adolescents, and emerging adults as well. This decision was made

since the research was lacking in regard to solely adult women. The final search yielded 11 articles that were determined to be useful to the research question. A summary of those studies can be found in the annotated bibliography located in the appendix of this paper.

As the reader can see in the annotated bibliography, five of the 11 articles that were looked at in depth are a part of a longitudinal study that is referred to as the “Berkeley Girls with ADHD Longitudinal Study.” In this study 140 girls with ADHD and 88 matched comparison girls were followed from childhood (ages 6-12) into adulthood over a 16-year period. Many more articles related to this study were published but were deemed not relevant to this particular systematic review because the subject matter was not related to social functioning. The other studies were related to social functioning, used an all-female sample and were valuable to the current review.

Table Description

The following table, Table 1, includes seven studies that most directly examined social functioning and executive functioning. The seven studies that were chosen serve as the most direct example and the best summary of the information found in the other studies. Some studies were excluded because, although there was valuable information relevant to the current review that is worth discussing, it was not the primary function of that study. Some studies were excluded from the table because they used predominantly male samples. Only one study (Ray et al., 2017) with a predominantly male sample was included in the table because it still had a significant number of females in the study and gender was not found to be a significant modifier. Most articles in the table were about adult females which is the primary interest in this review. Ray et al. (2017), studied middle school children and another study is part of the Berkeley Girls with ADHD Longitudinal Study, so it contributes to how these girls functioned over time. Three

of the articles are a part of the Berkeley Girls with ADHD Longitudinal Study and studied different aspects of executive functioning.

Table 1

ADHD in Adult Females and Factors Related to Social Functioning or Executive Functioning

References	Type of Study	Participants	Information about ADHD presentation	Outcomes related to social functioning (SF) or executive functioning (EF)
Jarrett, M. A. (2016)	Structural equation modeling analyses	421 college students ($N = 307$ female)	ADHD ($N = 35$); Anxiety ($N = 53$); Comorbid ADHD + Anxiety ($N = 36$); Neither ADHD/Anxiety ($N = 32$)	(EF) ADHD and comorbid ADHD + Anxiety positively related to deficits in self-motivation and self-restraint**
Ray, Evans, & Langberg (2017)	Correlational Study	324 middle school students aged 10-14 ($N = 93$ female)	Predominantly Inattentive or Combined Type	(SF) Parent involvement, youth activity breadth and intensity, & social acceptance have a positive impact on social functioning. Conduct disorder severity, youth depression, negative parenting have a negative impact on social functioning.**
Sacchetti & Lefler (2017)	Multiple Regression Analysis	176 college students ($N = 117$ female)	ADHD presentation ($N = 31$); Control Group ($N = 145$)	(SF) ADHD predicted social impairment in a series of multiple regressions. The first step of analysis did not include ADHD symptomology ($R^2 = 0.04$), but the second step did ($R^2 = 0.32$).*
McKeague et al. (2015)	Qualitative; Longitudinal Retrospective	16 young adults aged 18-30 ($N = 9$ female)	ADHD presented ($N = 6$); Depression presented ($N = 10$)	(EF) Three themes that have an effect on self-stigma emerged: being different, responses to peer stigmatization, and selective disclosure.

References	Type of Study	Participants	Information about ADHD presentation	Outcomes related to social functioning (SF) or executive functioning (EF)
Miller, Ho, & Hinshaw (2012)	Longitudinal Prospective Study	228 females from the Berkeley Girls with ADHD Longitudinal Study (adults in the present study)	ADHD presentation ($N = 140$); Control Group ($N = 88$)	(EF) Having childhood ADHD is related to deficits in executive functioning in females well into adolescence and young adulthood, even if the symptoms of ADHD have reduced to a point of remittance.
Owens & Hinshaw (2016)	Longitudinal Prospective Study;	228 females from the Berkeley Girls with ADHD Longitudinal Study (adults in the present study)	ADHD presentation ($N = 140$); Control Group ($N = 88$)	(EF) History of childhood and adolescent conduct problems, school failure, externalizing and internalizing problems, and peer rejection were all factors that had a significant relationship with functioning in young adult females with ADHD.
Owens et al. (2017)	Longitudinal Study; Prospective Study;	228 females from the Berkeley Girls with ADHD Longitudinal Study (adults in the present study)	ADHD presentation ($N = 140$); Control Group ($N = 88$)	(EF) Childhood was related to increased risk of unplanned pregnancy, educational underachievement, occupational functioning, depression, anxiety, aggression, defiance, and self-injury.

* Gender was a significant modifier

** Gender was not a significant modifier

Results & Conclusions

The aim of this systematic review was to determine what existing research says about the relationship between social and/or executive functioning in women with ADHD. Overall, the research found that having ADHD was negatively related to social and/or executive functioning in women, but that significantly more research is needed to help assess more specific variables involved, such as other causes related like social media usage, age, and more. More research is also needed to help identify the specific areas of social and executive functioning that are affected by ADHD such as problems with communication, participation in social activities, ability to concentrate in a job environment, and so forth.

Ahmad et al. (2019), determined that there is little evidence for late development or onset of ADHD in adult women. The authors further concluded that it was difficult to separate what symptoms were a result of ADHD or other internalizing disorders such as anxiety or depression. Hoelzle et al. (2019), and Marshall et al. (2016), determined that there needs to be more involved in assessment of ADHD for research because there are significant statistical differences in those who are presented with an ADHD diagnosis and those who go through extra screening and are labeled as exhibiting "suspect effort" which is referring to the idea that in the determination of diagnosis status, participants exaggerated symptoms that are stereotypically associated with ADHD.

Hinshaw et al. (2006), found that although hyperactivity ADHD symptoms may decrease, other ADHD symptoms persisted into adulthood and had a number of problems related to peer interactions and social functioning. Miller et al. (2012), found that even girls who had ADHD as children and grew out of the diagnosis struggled with executive functioning more than their peers who did not have ADHD as children. Owens et al. (2017) found that childhood ADHD was

related to several negative life factors as adults such as high BMI, increased risk of unplanned pregnancy, educational underachievement, occupational functioning, depression, anxiety, aggression, defiance, and self-injury. This relationship was found to be significant in both ADHD that continued into adulthood and ADHD that was limited to childhood.

Jarrett (2016) concluded that college students with ADHD or ADHD comorbid with anxiety struggled more with executive functioning than their peers with anxiety only or no diagnosis. Owens and Hinshaw (2016) determined that in girls with ADHD, peer rejection and internalizing problems had an effect on the relationship between childhood conduct and adult internalizing problems. McKeague et al. (2015), found that the participants were both aware of being stigmatized by peers and internalized stigmatization in different ways. The authors found three important themes throughout the stories of the participants including “feeling different,” “responses to peer stigmatization,” and “selective disclosure.”

Based on all of this information, the presence of ADHD has a negative effect on social and executive functioning in women well into adulthood. This information suggests that girls need to be screened earlier for ADHD so that they may have access to treatment earlier. This information may suggest pathways for the development of treatment for girls with ADHD, including the addition of social skills training or classes that teach girls about some executive functioning deficits they may experience and what they can do about it. This would, in turn, require more research in the future to determine the efficacy of the treatment at an earlier age and new treatments.

Strengths

Three of the seven articles in the table and five of the 11 total articles analyzed are from the Berkeley Girls with ADHD Longitudinal Study. The main authors are experts in the field and

different authors have contributed over the course of the study and different analyses were used and compared in each one. In short, the research is consistent, reliable, and valid based on measures they use and explain in each article.

One of the most notable strengths of this review is that although we know that ADHD symptoms are often expressed differently in women than in men, the research on whether or not there is a significant negative relationship between ADHD and social or executive functioning is overall consistent with the research of the same topic in men. Additionally, gender is most commonly not a significant modifier of the relationships. This is notated in Table 1. Of the seven studies in the table, three had all female samples and were therefore unable to measure this directly but noted in their discussion that their findings were similar to the findings on men with ADHD (Miller, Ho, & Hinshaw, 2012; Owens & Hinshaw, 2016; Owens et al., 2017). Of the remaining four studies in the table three included whether or not gender was a modifier. Two studies found that gender was not a modifier (Jarrett, 2016; Ray, Langberg, & Evans, 2017). One study found that gender was a modifier (Sacchetti & Lefler, 2017). So, although the expression of symptoms may differ, we can predict that symptoms will be present based on the findings of research on men with ADHD. The ability to predict a relationship (positive or negative) in various facets of social and executive functioning can help guide the direction of future research. Another strength of this review is that most of the studies compared the women with ADHD against a control group.

Limitations

Executive and social functioning have many subsets of specific areas that could be studied such as platonic friendships versus romantic relationships or a specific behavior, and the articles studied in this review do not focus on one particular subset, which is a limitation to this

review. All of the subsets studied contribute to social and executive functioning but each one studies different aspects of it and measured these in different ways. Another limitation of this review is the lack of research articles that used their own data for new experiments, many articles used sets of data that already existed and completed analyses on that set of data. Few new experiments are being done on ADHD in women and regarding the effect of ADHD on social functioning. This limits what we are learning about ADHD long term. Furthermore, it is now most commonly believed that ADHD can present differently in women that it does in men and often results in more internalizing problems. This is discussed in Owens and Hinshaw (2016) but there is little research to help us understand the link between social functioning and those internalizing problems.

Another limitation of this review is that there is only one qualitative study when more would be beneficial in helping us understand the social construct. McKeague et al. (2015), concluded that social and self-stigmatization of mental health issues such as ADHD and depression have an effect on children and adolescents. This allows us to see how our perceptions of mental health have an effect on us, and more qualitative research would allow us to understand the role social dynamics play in our understanding of mental health. The research on ADHD in women in general is limited as a consequence of many women not receiving diagnoses until adulthood. Once women enter adulthood, it is difficult to determine how many social problems or symptoms are actually a result of ADHD versus other factors, such as depression, anxiety, poor adjustment, life transitions and stressors, maladaptive attachment patterns, substance abuse, and so forth. Future research should aim to contribute to the research on ADHD in females and the differences in how it presents and/or develops differently than men, which would allow for further research in more specific areas such as social functioning.

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- Jarrett, M. A. (2016). Attention-deficit/hyperactivity disorder (ADHD) symptoms, anxiety symptoms, and executive functioning in emerging adults. *Psychological Assessment, 28*(2), 245–250. <https://doi.org/10.1037/pas0000190>
- Marshall, P. S., Hoelzle, J. B., Heyerdahl, D., & Nelson, N. W. (2016). The impact of failing to

identify suspect effort in patients undergoing adult attention-deficit/hyperactivity disorder (ADHD) assessment. *Psychological Assessment*, 28(10), 1290–1302.

<https://doi.org/10.1037/pas0000247>

McKeague, L., Hennessy, E., O’Driscoll, C., & Heary, C. (2015). Retrospective accounts of self-stigma experienced by young people with attention-deficit/hyperactivity disorder (ADHD) or depression. *Psychiatric Rehabilitation Journal*, 38(2), 158–163.

<https://doi.org/10.1037/prj0000121>

Miller, M., Ho, J., & Hinshaw, S. P. (2012). Executive functions in girls with ADHD followed prospectively into young adulthood. *Neuropsychology*, 26(3), 278–287.

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Mowlem, F.D., Rosenqvist, M.A., Martin, J. *et al.*, (2019). Sex differences in predicting ADHD clinical diagnosis and pharmacological treatment. *Eur Child Adolesc Psychiatry* 28, 481–489.

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Owens, E. B., & Hinshaw, S. P. (2016). Childhood conduct problems and young adult outcomes among women with childhood attention-deficit/hyperactivity disorder (ADHD). *Journal of Abnormal Psychology*, 125(2), 220–232. <https://doi.org/10.1037/abn0000084>

Owens, E. B., Zalecki, C., Gillette, P., & Hinshaw, S. P. (2017). Girls with childhood ADHD as adults: Cross-domain outcomes by diagnostic persistence. *Journal of Consulting and Clinical Psychology*, 85(7), 723–736. <https://doi.org/10.1037/ccp0000217>

Ramtekkar, U. P., Reiersen, A. M., Todorov, A. A., & Todd, R. D. (2010). Sex and age differences in attention-deficit/hyperactivity disorder symptoms and diagnoses: implications for DSM-V and ICD-11. *Journal of the American Academy of Child and Adolescent Psychiatry*, 49(3), 217–28.e283.

Ray, A. R., Evans, S. W., & Langberg, J. M. (2017). Factors associated with healthy and impaired social functioning in young adolescents with ADHD. *Journal of Abnormal*

Child Psychology, 45(5), 883–897. <https://doi.org/10.1007/s10802-016-0217-x>

Sacchetti, G. M., & Lefler, E. K. (2017). ADHD symptomology and social functioning in college students. *Journal of Attention Disorders*, 21(12), 1009–1019.

<https://doi.org/10.1177/1087054714557355>

Appendix

Annotated Bibliography

Ahmad, S. I., Owens, E. B., & Hinshaw, S. P. (2019). Little evidence for late-onset ADHD in a longitudinal sample of women. *Journal of Consulting and Clinical Psychology, 87*(1), 112–117. <https://doi.org/10.1037/ccp0000353>

This study was a replication of an experiment done by another group of researchers to examine late-onset ADHD in an all-male sample. This research used the same statistical analysis but used data from the established all-female sample from the Berkeley Girls with ADHD Longitudinal Study. Of the 88 cases, 9 met the criteria for ADHD in adulthood but in five of these cases, another disorder existed before the ADHD symptoms and may better explain it. In three cases, another disorder was present, but it was not clear which disorder came first. There was only one case of 88 that presented clearly as late-onset ADHD. The analysis of this sample indicates that one out of 88 females who did not meet the threshold for ADHD in childhood met the criteria for late-onset ADHD in adulthood, suggesting little evidence for late-onset ADHD. This finding is consistent with the findings of the study they aimed to replicate.

Hinshaw, S.P., Owens, E. B., Sami, N., Fargeon, S. (2006). Prospective follow-up of girls with attention-deficit/hyperactivity disorder into adolescence: Evidence for continuing cross-domain impairment. *Journal of Consulting and Clinical Psychology, 74*(3), 489-499. <https://doi.org/10.1037/0022-006X.74.3.489>

This study is the 5-year follow-up to the Berkeley Girls with ADHD Longitudinal Study that sampled 140 girls aged 6-12 carefully diagnosed with ADHD and 88 girls aged 6-12 who did not have ADHD. Five years later, the girls were aged 11-18 and 92% of the

original participants continued with the follow-up, although there was not a significant difference in most of the findings due to attrition. The authors found that most girls without ADHD remained so, most girls with inattentive type ADHD remained so, but less than half the girls with combined hyperactivity and inattentive type ADHD remained so. Many of these girls were moved to the inattentive type ADHD classification or removed from the ADHD classification altogether. Girls with either inattentive or combined ADHD showed more progress and growth from the issues they faced at baseline compared to the girls without ADHD. However, the girls with ADHD faced significantly more problems than girls without ADHD in a variety of domains including peer interactions and other forms of social functioning. The relevance of this study to the current analysis is showing data that represents a consistent pattern of problems with social functioning in girls with ADHD over time.

Hoelzle, J. B., Ritchie, K. A., Marshall, P. S., Vogt, E. M., & Marra, D. E. (2019). Erroneous conclusions: The impact of failing to identify invalid symptom presentation when conducting adult attention-deficit/hyperactivity disorder (ADHD) research. *Psychological Assessment, 31*(9), 1174–1179. <https://doi.org/10.1037/pas0000752.supp>

This study builds on the previous study conducted by many of the same researchers (see Marshall et al., 2016). The researchers used the same set of data (428 male and female patients) but implement more exclusion criteria. In this study, they analyzed the effect of comorbid diagnoses. The groups were split into those who solely had an anxiety diagnosis and/or depression diagnosis and those who had ADHD and comorbid anxiety and/or depression diagnosis. This helped the researchers to examine which participants had symptoms attributed to ADHD or another disorder. The research concluded that there

were differences in research findings before and after excluding patients that exhibited suspect effort and provided invalid symptom presentation to ensure that assessment tools are valid and reliable when conducting assessments for ADHD in adults.

Jarrett, M. A. (2016). Attention-deficit/hyperactivity disorder (ADHD) symptoms, anxiety symptoms, and executive functioning in emerging adults. *Psychological Assessment*, 28(2), 245–250. <https://doi.org/10.1037/pas0000190>

This study sampled 421 young adults from a local university on executive functioning related to ADHD and/or anxiety. The sample was primarily female but included males as well. The study found that those with ADHD or ADHD in addition to anxiety expressed more struggle with self-motivation and self-restraint than those with only anxiety or the control group. Those with ADHD or ADHD in addition to anxiety differed in time self-management from those with anxiety only, but the direction was not clear, but all groups were more impaired than the control group. Those with ADHD in addition to anxiety expressed more struggle with self-organization, problem-solving, and emotional control than the ADHD-only or the anxiety-only groups; all groups were more impaired than the control group. Self-reported struggles with executive functioning were most strongly associated with inattention but were significantly related to hyperactivity/impulsivity and anxiety symptoms. The author of this study has conducted other published research with other authors regarding ADHD and anxiety and is familiar with the subject. The study and the sample used do not seem connected directly to the other research, increasing the validity. The author suggests that the biggest piece of information to learn from this study is that those with ADHD and anxiety struggle with emotion regulation and new treatments should be explored for the combination of symptoms. The author did note that

the sample was largely female, and provided research suggesting that females are more likely to report issues with emotion regulation so more research must be done. Executive functioning, especially emotion regulation but including the other domains, would have an impact on social functioning.

Marshall, P. S., Hoelzle, J. B., Heyerdahl, D., & Nelson, N. W. (2016). The impact of failing to identify suspect effort in patients undergoing adult attention-deficit/hyperactivity disorder (ADHD) assessment. *Psychological Assessment, 28*(10), 1290–1302.

<https://doi.org/10.1037/pas0000247>

The results of the study included 44 (10%) of the participants were diagnosed with ADHD, 58 participants (14%) probably have ADHD, 136 (22%) participants could possibly have ADHD, and 190 (44%) participants probably did not have ADHD. The study determined that 115 of the 428 participants (27%) made a suspect effort. The study determined that there were significant similarities between the answers of those who were considered to have made a suspect effort and those who did not. A significant weakness is that all of the diagnoses were given by one professional without other opinions, which leaves room for misdiagnosis. I am curious to learn more about what the implications are for social functioning in late diagnosis ADHD and in patients that exhibit suspect effort.

McKeague, L., Hennessy, E., O’Driscoll, C., & Heary, C. (2015). Retrospective accounts of self-stigma experienced by young people with attention-deficit/hyperactivity disorder (ADHD) or depression. *Psychiatric Rehabilitation Journal, 38*(2), 158–163.

<https://doi.org/10.1037/prj0000121>

This is a qualitative study that sampled 16 adults with depression or ADHD between the age of 18-30. Subjects were asked about their experience with having ADHD or

depression during childhood and/or adolescence. The researchers found that the participants were both aware of being stigmatized by peers and internalized stigmatization in different ways. The authors found three important themes throughout the stories of the participants including “feeling different,” “responses to peer stigmatization,” and “selective disclosure.” The research suggested that the negative stigmatization responses from others contributed to self-stigmatization. The authors concluded that the stigmatization of mental health issues such as ADHD and depression have an effect on the children and adolescents that were aware of it happening in their social circle. These narrative findings suggest that ADHD has a negative effect on social functioning. However, this sample was very small and nonrepresentative of the population, because these participants were in the third level of education. In contrast, the authors provided research that indicated childhood mental illness related to early termination of education.

Miller, M., Ho, J., & Hinshaw, S. P. (2012). Executive functions in girls with ADHD followed prospectively into young adulthood. *Neuropsychology, 26*(3), 278–287.

<https://doi.org/10.1037/a0027792>

This study is the 10-year follow-up to the Berkeley Girls with ADHD Longitudinal Study. This study found that the girls who maintained ADHD diagnosis and the girls who no longer met ADHD diagnostic criteria struggled with executive functioning and more so than the comparison group. Previously, the researchers controlled demographic characteristics, comorbid illness, and the full-scale IQ and still found impairments in executive functioning. However, a discrepancy in the significance of findings developed in adolescence when including the IQ, but the remaining variables remained significant in

adolescence. The researchers are unclear why this discrepancy happens, and performed the analysis both with and without IQ as a covariate. Ultimately, the study found that having childhood ADHD can affect executive functioning in females well into adolescence and young adulthood, even if the symptoms of ADHD have reduced to a point of remittance.

Owens, E. B., & Hinshaw, S. P. (2016). Childhood conduct problems and young adult outcomes among women with childhood attention-deficit/hyperactivity disorder (ADHD). *Journal of Abnormal Psychology, 125*(2), 220–232. <https://doi.org/10.1037/abn0000084>

This study used the sample of 140 girls and 88 comparison girls from the Berkeley Girls with ADHD Longitudinal Study. The findings indicate that childhood and adolescent conduct problems predicted functioning and internalizing problems during young adulthood in females with ADHD, which is consistent with the research findings over the same topic in boys with ADHD. Childhood conduct problems were more notable in predicting young adult functioning than adolescent conduct problems, but both were significant. Adolescent conduct problems were more notable in predicting externalizing problems than childhood conduct problems. The study found that school failure and disciplinary problems had an effect on the relationship between childhood conduct, overall young adult functioning, and externalizing problems. However, peer rejection and internalizing problems had an effect on the relationship between childhood conduct and adult internalizing problems; this particular finding is relevant to the current evaluation.

Owens, E. B., Zalecki, C., Gillette, P., & Hinshaw, S. P. (2017). Girls with childhood ADHD as adults: Cross-domain outcomes by diagnostic persistence. *Journal of Consulting and Clinical Psychology, 85*(7), 723–736. <https://doi.org/10.1037/ccp0000217>

This study is the 16-year follow-up to the Berkeley Girls with ADHD Longitudinal Study that followed 140 girls aged 6-12 diagnosed with ADHD in childhood and 88 girls aged 6-12 matched by age and race. They were tested through self-report and parent-report questionnaires. The authors found that childhood ADHD was related to several negative life factors as adults such as high BMI, increased risk of unplanned pregnancy, educational underachievement, occupational functioning, depression, anxiety, aggression, defiance, and self-injury. This relationship was found to be significant in both ADHD that continued into adulthood and ADHD that was limited to childhood. There was not found to be a relationship between substance abuse and ADHD in this sample. This article addresses the social, executive, and occupational functioning dimensions related to ADHD in adult women, which is relevant to the current systematic review. The authors of this study have also contributed to many other studies related to ADHD in women across various age ranges and are established in this area of research.

Ray, A. R., Evans, S. W., & Langberg, J. M. (2017). Factors associated with healthy and impaired social functioning in young adolescents with ADHD. *Journal of Abnormal Child Psychology*, 45(5), 883–897. <https://doi.org/10.1007/s10802-016-0217-x>

The findings of this research indicate that there are three variables that are associated with social impairment: youth conduct disorder severity, youth depression, and negative parenting. Activity participation (in either activities such as team sports or leisure activities) and parental involvement were found to be able to buffer against risk factors. This study had a mostly male sample which is not uncommon for research on this age group since many females receive an ADHD diagnosis later in life. However, this does mean the application to the current analysis is limited.

Sacchetti, G. M., & Lefler, E. K. (2017). ADHD symptomology and social functioning in college students. *Journal of Attention Disorders, 21*(12), 1009–1019.

<https://doi.org/10.1177/1087054714557355>

This study found that symptoms of ADHD did predict social impairment and trait anger on a significant statistical level. Furthermore, the group classified as “elevated ADHD” exhibited more trait anger than the group classified as “low ADHD,” and this was more noticeably predicted by inattention than hyperactivity. The shortcomings of this study include that it is a small sample size in general, and with regard to the current analysis, only 66.5% of the participants were female. Additionally, only 31 out of the 145 participants had ADHD while the other studies did not. Furthermore, some of the results were consistent with previous literature but some results were not. The authors postulated that their research may not have found a significant result in the predictive value of romantic satisfaction and intimate partner violence because of the sample size and because most participants in their study were aged 18-19 while previous research studied young adults age range up through the thirties. The authors suggest that because their sample was so young, they may not have had any serious romantic relationships yet.