



# An Empirical Analysis of the Relationship between Adult Attention Deficit and the Need for Achievement



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Submission: November 25, 2022; Published: December 19, 2022

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## Abstract

The presence of childhood symptoms for most adults diagnosed with Adult Attention Deficit Disorder (AAD) suggests that key aspects of adult personality receive significant long-term exposure. AAD therefore has the potential to shape core aspects of adult personality and influence general patterns of behavior and performance. The need for achievement is an influential distal influence on motivation and an important determinant of personal performance. This research proposes that AAD creates persistent difficulties with achievement which should erode the need for achievement. One hundred and seventy-seven university students completed assessments of the need for achievement and a multi-dimensional measure of AAD. Multiple regression provided support for the general hypothesis that AAD predicts a lower need for achievement ( $F(5, 172) = 8.08, p = 0.00$ ). All dimensions of AAD were significantly correlated with the need for achievement ( $r = -0.25$  to  $-0.40$ ), except for difficulty managing emotional interference ( $r = -0.13, p = 0.083$ ). The hypothesis that difficulty sustaining energy and effort uniquely predicts a lower need for achievement was supported ( $\beta: p = 0.000$ ). The results suggest that motivating employees with AAD may require addressing psychological constraints on the need for achievement. Future research needs to examine the conditions that moderate the impact of AAD on need for achievement to identify useful interventions.

**Keywords:** Assertiveness; Adult attention deficit; Organizational behavior

## Introduction

Adults are being diagnosed with attention deficit hyperactivity disorder (ADHD) in record numbers. Data released in 2005 by Medco Health Solutions, a pharmacy benefits manager, indicates that approximately 1.5 million adults between the ages of 20 and 64 are taking medication for attention problems. They also report that the use of medication for ADHD from 2000 to 2004 increased 57% for children/adolescents and 98% for adults. ADHD is a neurological condition that impacts physical, social and emotional functioning [1]. Symptoms include difficulties with staying focused, attending to details, remaining organized, following through on instructions, completing tasks, forgetfulness, restlessness, excessive talking and impulsiveness.

It is estimated that approximately 40% to 70% of children with ADHD will continue to experience symptoms as adults [2-5]. A recent population screen of 966 adults suggests prevalence's of 2.9% for narrowly defined ADHD and 16.4% using a broader definition [6].

Adults with ADHD face a number of challenges. A national survey conducted by Harris Interactive on behalf of the national attention deficit disorder association and the Eli Lilly company found that large numbers of adults with ADHD believed that the disorder had constrained them from achieving long-term goals (87%), short-term goals (80%) and pursuing their dreams (80%). Many ADHD adults reported difficulty with romantic relationships (77%), ability to follow through on things (85%), attain educational achievement (64%), succeed in the workplace (64%) and handle stress (64%). Young adults with ADHD attain lower occupational ranking, socioeconomic status and social class standing when compared with their peers [7]. On June 7<sup>th</sup>, 2004, the U.S. Senate unanimously passed Resolution 370, designating September 7 as National Attention Deficit Disorder Awareness Day. The resolution states that the lack of public knowledge and understanding of the disorder plays a significant role in the overwhelming numbers of undiagnosed and untreated cases of

ADHD. The resolution states that 85% of adults with ADHD are undiagnosed.

Adult ADHD has important implications for the workplace, as indicated by a recent national survey that measured the prevalence and effects of ADHD on work performance in a nationally representative sample of workers. The survey found that 4.2% of workers had ADHD resulting in 120 million days of annual lost work in the U.S. labor force, equivalent to \$19.5 billion lost human capital [8]. They concluded ADHD is a common and costly workplace condition. Most US courts have treated adult ADHD as a disability covered by the Americans with Disabilities Act (ADA) however recent supreme court decisions have limited the coverage of the disability statutes.

Research on the relationship between adult attention deficit (AAD) and important organizational behaviors is in its infancy.

A significant change is taking place in organization design with greater emphasis on flatter organizations and employee empowerment [9-12]. Such organizations rely more on employee self-motivation and self-regulation than the traditional forms of external leadership and control [13]. This has increased the importance of identifying reliable determinants of individual self-regulation and performance. The general theory of job performance suggests three basic determinants of individual performance: declarative knowledge (knowledge of basic facts and principles necessary for performance), procedural knowledge and skills (knowing how and being able to perform the required tasks), and motivation (the combined effect of arousal, direction and persistence of effort) [14-16]. This research focuses on the motivational aspect of performance. Kanfer [17] distinguishes between proximal and distal factors when describing the influence of individual differences on personal motivation. Distal factors, like the need for achievement, affect long term patterns of behavior across situations by operating at the level of intention formation. Proximal factors, like self-efficacy influence processes closer to actual behavior, like the translation of intention into action [18]. This suggests that the need for achievement is a fundamental and enduring aspect of personality that forms the foundation for individual motivation across time and situations.

This research proposes a relationship between the need for achievement in adults and AAD. The need for achievement is considered to have pre-verbal roots but continues to be shaped by post-verbal dynamics [19]. An association between AAD and the need for achievement appears likely given the enduring constraints that AAD places on successful achievement and the underlying motivation to achieve. The pressures, constraints and responsibilities of adult life are likely to put significant pressure on mitigating strategies increasingly the likelihood of an eventual reduction in the need to achieve. This may be offset by increasing pressures to achieve in adult life, but if the ability to achieve is unavailable, the need to achieve is likely to be dampened given the need for dissonance reduction.

## Background

### Adult attention deficit

The Diagnostic and Statistical Manual of Mental Disorders-Fourth Edition (DSM-IV) defines ADHD (attention deficit and hyperactivity disorder) as “a persistent pattern of inattention and/or hyperactivity-impulsivity that is more frequent and severe than is typically observed in individuals at a comparable level of development” (APA, 1994, pg. 78). In the DSM-IV there are two ADHD subdomains – hyperactivity/impulsivity and inattention, but disagreement remains about the content, boundaries, and dimensions of the disorder [20,21] particularly in adults. Strict reference to the symptoms of inattention, hyperactivity and impulsivity may not capture some of the important symptoms of attention deficit disorder in adults [22]. Symptoms like hyperactivity often diminish, or be non-existent in many adults, while other cognitive symptoms of ADHD remain [23,24]. Treating ADHD as categorical diagnosis, as opposed to a dimensional construct with varying levels of severity, may also promote simplistic use and interpretation of the construct [25,26]. A useful definition and measure of AAD must capture the key symptoms experienced by adults and provide for sufficient dimensional variation. This research study makes use of the Brown Adult Attention Deficit Scale [27] which is a validated dimensional measure of AAD based on the following dimensions:

- a) Difficulty organizing and activating to work.
- b) Difficulty sustaining attention and concentration.
- c) Difficulty sustaining energy and effort.
- d) Difficulty managing emotional interference.
- e) Difficulty utilizing working memory and recalling information.

### Current research on AAD in the workplace

A recent national household survey (n = 3198, ages 18 - 44) concluded that 4.2% of workers were attention disordered [8]. Attention related disorders was associated with 35 days of annual lost work performance which represents 120 million days of annual lost work in the U.S. labor force, equivalent to \$19.5 billion lost human capital. A recent study using data from Fortune 200 companies found that absenteeism and medical costs for employees diagnosed with ADHD were 48% higher compared to employees without the condition [28]. Most US courts have treated adult ADHD as a disability covered by the Americans with Disabilities Act (ADA) however recent supreme court decisions have limited the coverage of the disability statutes.

Attention disordered adults are more likely to change jobs and engage in part time employment [29]. The condition is also associated with higher accident rates, lower productivity and difficulty keeping a job [30,31]. Workers with this condition have difficulty focusing on their problem behavior and without help

will often fall into a chain of failures [32]. Disordered adults are more likely to seek jobs that do not require sustained periods of concentration [33]. They are also perceived by their employers as less able to complete assignments on time and in need of greater supervision [34]. They are more likely to spontaneously terminate their employment [35]. Wender [36] warns us that the impact of attention related disorders on work performance varies considerably from situation to situation and from individual to individual. He suggests that generalizations about the impact of adult attention disorders on work performance must be made with caution.

Attention related disorders may also be associated with positive behaviors like ingenuity, creativity and determination [7], which may explain the greater likelihood of attention disordered adults becoming entrepreneurs [37]. In fast paced work environments, attention disordered adults may perform just as well, if not better, as non-disordered employees [38]. Hartman [39] encourages a more encompassing view of adult workers with attention related disorders by suggesting that employers consider both the negative and positive behaviors associated with the condition.

### Need for achievement

Motivation theory is based on the fundamental premise that behavior is the result of attempts to satisfy unmet needs. The content theories of motivation assume a universal set of needs that exist beyond culture, whereas McClelland [40] suggests that cognitive processing of social information can influence the human need system. In particular, McClelland focuses on the culturally determined, or at least influenced, need for achievement. He suggests links between need for achievement and a variety of outcomes ranging from entrepreneurship [41] to the economic growth and decline of civilizations [42].

Achievement motivation theory states that “people are motivated according to the strength of their desire either to perform in terms of a standard of excellence or to succeed in competitive situations” [43]. Jackson [44] states that an individual with a high need for achievement “aspires to accomplish difficult tasks, maintains high standards and is willing to work toward distant goals” (pg. 6). In general, the research suggests that individuals with a high need for achievement want to self-select moderately challenging tasks, take personal responsibility for performance, have opportunities to try new ways of doing things, engage in problem solving, and receive immediate feedback on performance [45].

The social determinants of the need for achievement begin with early childhood experiences in the family of origin but also include all other achievement related social forces throughout a person’s life. McClelland, Koestner & Weinberger [19] suggest that the foundation of the need for achievement (implicit

motives) is stored in the preconscious mind and is influenced by life experiences beginning with the emotional experiences of pursuing natural incentives in the preverbal stage. McClelland [19] proposes a second category of personality dispositions referred to as self-attributed motives which represent the value of specific achievement activities to individuals that arise out of interactions between self and social influences in the post verbal stage. Research has linked the need for achievement with choosing challenging goals [5,15,40,46-48], goal commitment [49,50] and task performance [40,51,52].

### Hypotheses

The model guiding this research proposes that AAD predicts the need for achievement in adults. The childhood origins of the condition suggests that adults with attention deficit experience difficulties with task completion and achievement for most of their lives. This should eventually lower the need for achievement if no mitigating strategies can be developed or maintained. The pressures, constraints and responsibilities of adult life are likely to put significant pressure on mitigating strategies, increasing the likelihood of an eventual reduction in the need to achieve. Such a reduction may be offset by using additional personal resources and external support. However, if such personal abilities are unavailable and no mitigating forms of support are present, the need to achieve is likely to be dampened given the need for dissonance reduction.

#### **H1: Adult attention deficit will be negatively related to the need for achievement in adults**

Difficulty getting organized and starting work activities should eventually produce unmanageable backlogs of tasks, especially for adults who face increasing responsibilities, constraints and demands for efficiency. Without effective and enduring ways of getting organized and started on important tasks, a reduction in task engagements and the underlying need for achievement seems likely.

#### **H1a: Difficulty organizing and activating to work will be negatively related to the need for achievement in adults**

The need to attend to a variety of simultaneous and constantly evolving activities within the modern workplace and family is a considerable challenge for adults who have difficulty sustaining attention and concentration. The inability to focus under increasingly demanding conditions should eventually require a reduction in task engagements and the underlying need for achievement.

#### **H1b: Difficulty sustaining attention and concentration will be negatively related to need for achievement in adults**

Difficulties with concentration, short-term working memory, emotional interference, activating to work and getting organized may be accommodated if the additional energy and effort required

to overcome these obstacles can be sustained. This seems unlikely given the increased demands for efficiency in modern life. When the energy and effort required to sustain current levels of achievement can no longer be sustained, pressure to reduce the need for achievement is likely to increase.

## **H1c: Difficulty sustaining energy and effort will be negatively related to the need for achievement in adults**

The complex social dynamics, expectations and stressors of adult life requires emotional intelligence [53]. Emotional intelligence is generally defined as the ability to effectively regulate your own emotions and the emotions of others in order to promote higher levels of personal and social functioning. Difficulty managing affective interference will reduce achievement in tasks requiring effective self-regulation and social behavior. The inability to prevent affective interference should eventually reduce opportunities for achievement and encourage a reduction in task engagements and the need for achievement.

## **H1d: Difficulty managing affective interference will be negatively related to the need for achievement in adults**

Life in a rapidly changing knowledge-oriented society requires increasing abilities to process, organize and recall a wide variety of information. This presents a considerable challenge for adults who have difficulty utilizing working memory and accessing recall. In order to cope with becoming overwhelmed, demands on working memory will have to be reduced. Once again, this should encourage a reduction in task engagements and ultimately the need for achievement.

## **H1e: Difficulty utilizing working memory and accessing recall will be negatively related to the need for achievement in adults**

Whatever strategies are employed to overcome the additional challenges of AAD it is likely that such strategies will require the sustained use of additional energy and effort. This suggests that the ability to sustain energy and effort is uniquely important in predicting the impact of AAD on the need for achievement.

## **H2: Difficulty sustaining energy and effort will be negatively related to the need for achievement in adults, controlling for the effects of all the other dimensions of adult attention deficit**

### **Methods**

#### **Participants and procedure**

Participants were 177 (94 women and 83 men) university students attending a university in the north-west United States. The average age was 24.5 and sixty nine percent of the participants reported that they worked (in addition to their studies) more than 10 hours per week. Each of the participants completed measures of adult attention deficit and the need for achievement as part of

distinctly different course exercises (conducted at different times and as parts of different exercises).

### **Measures**

Adult Attention Deficit (ADD). The Brown [27] attention deficit disorder scale was used to measure adult attention deficit. The measure contains 40 items that measure symptoms of attention deficit and has been designed and tested for use with adults 18 years and older. The 40 self-report items on the Brown ADD scales are grouped into 5 clusters of conceptually related symptoms of ADD:

1. Organizing and activating to work: measures difficulty in getting organized and started on work related tasks. An example item is: I am disorganized; I have excessive difficulty keeping track of plans, money, or time. Cronbach alpha reliability coefficient for the validation study is  $\alpha = 0.88$  and the current study is  $\alpha = 0.84$ .

2. Sustaining attention and energy: measures problems in sustaining attention to work-related tasks. An example item is: I listen and try to pay attention (e.g., in a meeting, lecture, or conversation) but my mind often drifts; I miss out on desired information. Cronbach alpha reliability coefficient for the validation study is  $\alpha = 0.92$  and the current study is  $\alpha = 0.87$ .

3. Sustaining energy and effort: measures problems in keeping up consistent energy and effort for work-related tasks. An example item is: I "run out of steam" and don't follow through; my effort fades quickly. Cronbach alpha reliability coefficient for the validation study is  $\alpha = 0.87$  and the current study is  $\alpha = 0.84$ .

4. Managing affective interference: measures difficulty with moods and sensitivity to criticism. An example item is: I become irritated easily; I am "short-fused" with sudden outbursts of anger. Cronbach alpha reliability coefficient for the validation study is  $\alpha = 0.80$  and the current study is  $\alpha = 0.77$ .

5. Utilizing "working memory" and accessing recall: measures forgetfulness in daily routines and problems in recall of learned material. An example item is: I intend to do things but forget (e.g., turn off appliances, get things from store, return phone calls, keep appointments, pay bills, do assignments). Cronbach alpha reliability coefficient for the validation study is  $\alpha = 0.79$  and the current study is  $\alpha = 0.76$ .

Participants indicated the frequency with which each item occurred in their own lives using a 4-point scale (1=never, 2=once a week, 3=twice a week, 4=almost daily)

Need for Achievement: The need for achievement was measured using 5 items taken from the social needs assessment questionnaire [54]. An example item is: I push myself to be all that I can be. The Cronbach alpha reliability for the validation study is  $\alpha = 0.79$  and the current study is  $\alpha = 0.73$ . Items were measured on a 5-point Likert scale (1=strongly disagree to 5=strongly agree).



Results

Descriptives

Means, standard deviations and correlations among the

variables appear in Table 1. Zero order correlations reveal that many of the variables are related to one another and adequate variance on the measures was obtained.

Table 1: Means, standard deviations and intercorrelations between variables.

	Mean	S.D.	(1)	(2)	(3)	(4)	(5)	(6)
1. Need for Achievement	21.35	2.48	-0.83					
2. Difficulty Organizing and Activating to Work	20.12	5.5	-0.27	-0.84				
3. Difficulty Sustaining Attention and Concentration	21.94	5.63	-0.32	0.77	-0.87			
4. Difficulty Sustaining Energy and Effort	17.71	5.54	-0.4	0.83	0.77	-0.84		
5. Difficulty Managing Affective Interference	13.44	4.09	-0.13	0.67	0.55	0.6	-0.77	
6. Difficulty Utilizing Working Memory and Accessing Recall	12.04	3.86	-0.25	0.69	0.7	0.72	0.55	-0.76

Internal consistency reliabilities are shown in parentheses on the diagonal  
All correlations are significant at the level  $p < 0.01$  (2-tailed)

Empirical tests of hypotheses

Hypothesis 1: multiple regression was used to test hypothesis 1 (Table 2). The ANOVA for the regression model is highly significant ( $F(5, 172) = 8.08, p = 0.00$ ) suggesting that adults with

AAD have a lower need to achieve. Zero order correlations were used to test the hypotheses regarding an association between the need for achievement and the various dimensions of adult attention deficit (Table 1).

Table 2: Results of regressing all dimensions of ADD on Need for Achievement.

R	R Square	Adjusted R Square					
0.44	0.19	0.17					
	Sum of Squares	df	Mean Square	F	Sig.		
Regression	201.68	5	40.34	8.08	0		
Residual	858.68	172	4.99				
Total	1060.36	177					
	B	Std. Error	Beta	t	Sig.	Zero-order	Part
(Constant)	24.09	0.72		33.25	0		
1. Difficulty organizing and activating to work	0.07	0.06	0.15	1.07	0.29	-0.27	0.07
2. Difficulty sustaining attention and concentration	-0.05	0.05	-0.12	-1.04	0.3	-0.32	-0.07
3. Difficulty sustaining energy and effort	-0.25	0.06	-0.56	-4.1	0	-0.4	-0.28
4. Difficulty managing affective interference	0.08	0.06	0.14	1.51	0.13	-0.13	0.1
5. Difficulty utilizing working memory	0.04	0.07	0.06	0.57	0.57	-0.25	0.04

Hypothesis 1a: test of hypothesis 1a ( $r = -0.27, p = 0.000$ ) suggests that adults who have difficulty organizing and activating to work have a lower need for achievement.

Hypothesis 1c: test of hypothesis 1c ( $r = -0.40, p = 0.000$ ) suggests that adults who have difficulty sustaining energy and effort have a lower need for achievement.

Hypothesis 1b: test of hypothesis 1b ( $r = -0.32, p = 0.000$ ) suggests that adults who have difficulty sustaining attention and concentration have a lower need for achievement.

Hypothesis 1d: test of hypothesis 1d ( $r = -0.13, p = 0.083$ ) which suggests that adults who have difficulty managing effective interference have a lower need for achievement was not supported.

*Hypothesis 1e:* test of hypothesis 1e ( $r = -0.25, p = 0.000$ ) suggests that adults who have difficulty utilizing working memory and accessing recall have a lower need for achievement.

*Hypothesis 2:* multiple regression was used to test hypothesis 2 (see table 2). A significant beta coefficient ( $\beta = -0.56, p = 0.000$ ) for difficulty sustaining energy and effort suggests that this dimension is uniquely predictive of a lower need for achievement, after controlling for all the other dimensions of adult attention deficit. A relatively smaller difference between zero order and partial correlation (zero order  $r = -0.40$ , partial  $r = -0.30$ ) and a significant partial correlation provides support for hypothesis 2.

## Discussion

Attention deficit-hyperactivity disorder is no longer a condition that exclusively afflicts children and adolescents. Adults are being diagnosed with ADHD in record numbers with prevalence estimates for U.S. adults ranging from 2.9% to 16.4%. A recent national survey concluded that ADHD is a common and costly workplace condition resulting in 120 million days of annual lost work. Research has shown that adults with ADHD have difficulty keeping a job and are involved in more workplace accidents. However, they may also perform more effectively in fast paced environments and are more likely to become entrepreneurs. There is little research on the relationship between ADHD and important organizational behaviors. This research employs a more encompassing definition of adult attention deficit (AAD) than the DSM-IV definition and proposes that the condition is associated with a lower need for achievement. The need for achievement is considered to be an important distal determinant of individual task performance. This proposition is based on the belief that AAD, in the absence of mitigating strategies, extraordinary personal resources and external supports, constrains successful task completion. The persistence of such performance conditions should dampen the need for achievement given the need for dissonance reduction. A measure based upon a more encompassing definition of attention deficit-hyperactivity disorder [27] was used to measure the correlations between the multidimensional construct of AAD and the need for achievement. All dimensions of AAD were significantly correlated with the need for achievement, except difficulty managing affective interference. Difficulty sustaining energy and effort was unique in predicting a lower need for achievement. In conclusion, AAD is associated with a lower need for achievement which may represent a serious threat to national productivity given the significant prevalence rates within the U.S. adult population.

## Implications for education institutions and organizations implementing work teams

Organizations seeking to motivate their employees and achieve higher levels of productivity need to be more aware of the effects of AAD on the need for achievement. Providing employees with specific kinds of support and helping them

develop useful mitigating strategies may be necessary to improve and sustain such employees. Avoiding such responsibilities may not be possible given the high prevalence rates identified in a recent national survey of the US workforce. Specific cognitive, affective and behavioral strategies that mitigate the effects of the condition on motivation need to be identified in order to help such employees. Identifying the types of external support needed by such employees and educating both AAD and non-AAD employees about the effects of the condition may encourage better understanding and responses to struggling members. Identifying how to shape job content and conditions may help to improve a person's job fit. Depending on the extent to which AAD is covered by the Americans with Disabilities Act, employers may be required to make reasonable accommodations and need to be ready to do so. Making employees and managers more generally aware of the symptoms of AAD and the treatment options may provide the education necessary to reduce the extent to which the condition remains untreated.

Education institutions, like management programs within universities, need to assist potential managers to recognize and respond to the symptoms of AAD in both them and others. Early diagnoses and treatment may help to prevent the exacerbating cycles of failure that often accompany the condition. Such programs also need to include in their course work non-medical techniques for addressing AAD.

## Suggestions for future research and limitations

Although most students were actively employed at the time of the study, the study is limited by the use of university students and needs to be replicated with a more representative sample of the workforce. Future research models need to include the suggested moderators of personal mitigating strategies, extraordinary personal resources and external supports. Inclusion of suggested mediators like task backlogs, desktop management, role overload, reduction in task demands and emotional intelligence may help to better understand the mechanisms by which AAD influences the need for achievement. This may also help to reveal opportunities for intervention. This research study has revealed an association between AAD and the need for achievement, which is an important determinant of personal task performance.

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DOI: [10.19080/GJIDD.2022.11.555802](https://doi.org/10.19080/GJIDD.2022.11.555802)

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