

# ADHD symptomatology and emotional regulation amongst undergraduate students

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## 1 Introduction

### ADHD

Attention-deficit/hyperactivity disorder is a neurobehavioral disorder characterized by symptoms of inattention, hyperactivity, and impulsivity. The prevalence of ADHD in children and adolescents is 5.9-7.1% and 5% in young adults (Willcutt, 2012).

### Emotion regulation

ADHD has been linked to functional impairments across various life domains, including areas of self-regulation and emotion processing. Gross and Thompson (2007) defined emotional regulation as the set of internal and external strategies that modulate the scale or type of emotions we experience. Research has consistently linked emotional regulation impairments and childhood ADHD; however a better understanding of emotional regulation impairments for ADHD persistent into adulthood is needed.

### Previous research

Past research involving college students and ADHD has principally focused on the academic deficits of ADHD (e.g., Du Paul, Weyandt, O'Dell, & Varejao, 2009; Norwalk, Norvilitis, & MacLean, 2009). However, a recent study concluded that emotional lability is a significant symptom in adulthood ADHD and not explained by the presence of other comorbid disorders (Vidal et al. 2014). Similarly, one study compared 20 college students who had been diagnosed with ADHD with a non-ADHD control group. The ADHD group scored significantly more poorly on scales measuring social adjustment and personal-emotional adjustment (Shaw-Zirt, Popali-Lehane, Chaplin & Bergman, 2005). Both of these studies suggest that emotion regulation abilities may be impaired in college students with ADHD symptoms.

### Present study

The present study examines the relationship between ADHD symptoms and emotional regulation difficulties in a population of undergraduate students. Consistent with previous research, we predicted that higher levels of ADHD symptoms would be associated with greater emotional dysregulation.

## 2 Methods

### Participants

Informed consent was obtained from undergraduate students in the University of Ottawa to participate in this study. Participants were randomly recruited through the Integrated System of Participation in Research (ISPR). The aim of this program is to provide undergraduate students with an opportunity to gain more insight into the research process while also benefiting research. Participants can accumulate up to 4 points of their final grade for their participation.

### Measures

- The *Connor's Behavioral Rating Scale - Self Report* (Conners et al., 1997) was administered to assess ADHD symptoms.
- The *Difficulties in Emotion Regulation Scale* (DERS; Gratz & Roemer, 2004) was administered to assess emotion regulation.

Both measures have robust psychometric properties in clinical and non-clinical samples.

### Statistical analyses

68 participants completed the study. The participants were divided into two groups characterized by a low ADHD status (n=33) and a high ADHD status (n=35) using the distribution's median value as a cut-off score. A two way ANOVA was derived using the General Linear Model (GLM) from SPSS in order to examine the differences in emotional regulation abilities according to the participants' ADHD status (low or high) and gender.

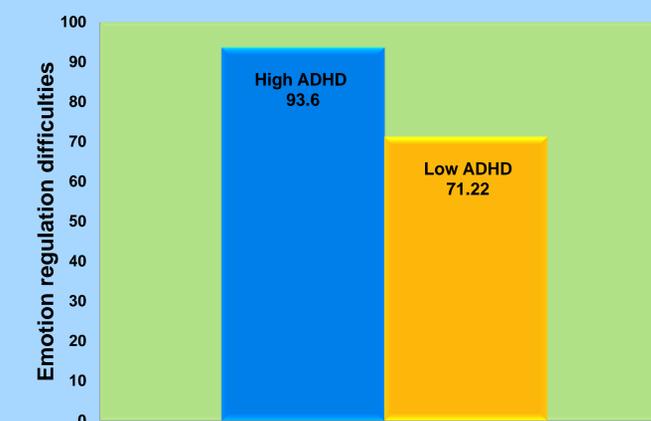
## 3 Results

The GLM analyses revealed a robust statistically significant main effect of ADHD status on emotional regulation ( $F=25.414$ ,  $p<.001$ ). However, there was no significant main effect of gender on emotional regulation ( $F=.459$ ,  $p=.501$ ) and similarly, a non-significant interaction between gender and ADHD status on emotional regulation ( $F=1.506$ ,  $p=.224$ ). Table 1 and Figure 1 present a summary of the findings.

Table 1: Emotion regulation by ADHD status and gender

	Low ADHD			High ADHD			Total		
	M	SE	n	M	SE	n	M	SE	n
Males	72.44	6.38	9	89.4	4.11	20	80.92	3.44	29
Females	70.00	3.09	24	97.80	4.45	15	83.99	2.8	39
Total	71.22	3.35	33	93.63	2.93	35			

Figure 1: Emotion regulation difficulties and ADHD status



## 4 Conclusion

- Consistent with our hypothesis and past research, these findings further illustrate that ADHD symptomatology is associated with higher levels of emotional dysregulation in a university student population.
- This association does not appear to be mediated by gender.

It is important to note these results in the context of the present sample. University students are generally considered as high functioning individuals. Nevertheless, it seems the presence of high levels of ADHD symptoms in this population is significantly associated with emotion regulation difficulties.

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