Do Symptoms of Sluggish Cognitive Tempo Uniquely Predict Response to Interpersonal

Stress in College Students?

by

Melissa C. Miller

A thesis submitted to the Graduate Faculty of
Auburn University
in partial fulfillment of the
requirements for the Degree of
Master of Science

Auburn, Alabama
May 2, 2020

Copyright 2020 by Melissa C. Miller

Approved by

Steven K. Shapiro, Chair, Associate Professor of Psychology
Elizabeth Brestan-Knight, Professor of Psychology
Alejandro Lazarte, Associate Professor of Psychology

Abstract

SCT has been identified as a distinct construct but highly related to ADHD. SCT also often co-occurs with internalizing disorders. In adults, SCT is associated with interpersonal problems, and the way individuals respond to interpersonal stress is related to further mental health problems. The current study evaluated whether SCT predicted stress responses when controlling for ADHD and internalizing symptoms. Undergraduates (N =412) from Auburn University completed an online survey. SCT was positively related to disengagement coping (voluntary efforts to avoid stressors), involuntary disengagement (involuntary responses acting away from stressors), and involuntary engagement (involuntary responses oriented toward the stressors) and negatively related to primary control coping (responses that act upon/work toward changing the stressors or environment) and secondary control coping (effortful responses to adapt to stressors). Using hierarchical regression analyses, SCT remained a unique predictor of primary control coping and involuntary disengagement. The current study highlights a need to evaluate for symptoms of SCT in individuals that appear to respond to stress in potentially maladaptive ways.

Table of Contents

List of Tables

More interest has been placed on studying Sluggish Cognitive Tempo (SCT) in recent years (Becker, Marshall, & McBurnett, 2014). Initially, SCT was studied as a way to identify a specific type of Attention Deficit/Hyperactivity Disorder (ADHD) that was distinct from inattention, but recent research has provided evidence that SCT is a unique construct, distinct from ADHD (Becker et al., 2016). SCT often co-occurs with internalizing disorders (i.e. anxiety and depression), but researchers do not always account for symptoms of internalizing disorders when examining correlates of SCT. In addition, SCT is associated with a variety of impairments in adults, including lower quality of life, problems with interpersonal relationships, and emotion dysregulation (Combs, Canu, Fulks, & Nieman, 2014; Flannery, Becker, & Luebbe, 2016; Flannery, Luebbe, & Becker, 2017). The transition to college can increase an individual's exposure to interpersonal stress, and the way they respond to stress can put them at increased risk for further development of mental health problems (Coiro, Bettis, & Compas, 2017). Understanding how individuals with SCT symptoms respond to these stressors in college, specifically interpersonal stressors, can help practitioners develop intervention options for college students with SCT symptoms. The aim of this study is to investigate if SCT symptoms uniquely predict the way an individual responds to interpersonal stress in college.

Distinguishing the SCT Construct

SCT was originally conceptualized as a "pure" form of the inattentive presentation of ADHD (ADHD-IN), but recent research has found strong evidence that SCT is a distinct, but highly related, construct from ADHD (Barkley, 2012; Becker et al., 2014; Becker et al., 2016). Specifically, studies have shown that SCT is strongly related to the inattentive presentation of ADHD (ADHD-IN), but not related to or negatively related to the hyperactive-impulsive form of ADHD (ADHD-HI) (Becker et al., 2016; Penny, Waschbusch, Klein, Corkum, & Eskes, 2009).

Within a large adult sample (n= 1249), Barkley (2012) found that 46% of individuals with high SCT symptoms did not report high ADHD symptoms and 54% of individuals with high ADHD symptoms did not report high SCT symptoms. Of the individuals that reported high symptoms of SCT, those that reported high symptoms of ADHD were primarily IN type or combined type (26% and 24%, respectively), with only 4% presenting with HI type (Barkley, 2012). Wood and colleagues also identified a distinction between those with ADHD and SCT, with 9.8% of their college sample reporting high SCT symptoms even in the absence of ADHD symptoms (Wood, Lewandowski, Lovett, & Antshel, 2017). Additionally, SCT and ADHD have unique relationships with external variables (e.g., ADHD was affected by age and ethnicity while SCT was not), giving further evidence of the distinction (Barkley, 2012).

With research indicating the distinction between SCT and ADHD, increased emphasis has been placed on identifying what exactly the SCT construct represents and whether or not it should be included as its own psychiatric disorder in taxonomic systems (Barkley, 2014). Previous research has used a variety of measures to assess symptoms of SCT, with little consistency in the item set. In an extensive review of previous factor analytic studies and their own meta-analyses, Becker and colleagues (2016) identified 18 SCT core symptoms that were used in the extant literature. Setting the stage for subsequent scale development, 13 items loaded on a single SCT factor and were deemed most representative of the SCT construct. Potentially reflecting a different type of attention disorder (e.g., problem with arousal), these symptoms include sluggish, tired/lethargic, slow thinking/processing, loses train of thought/cognitive set, sleepy/drowsy, spacey, in a fog, underactive/slow moving, daydreams, lost in thoughts, stares blankly, easily confused, and apathetic/unmotivated.

To further understand the distinction between ADHD and SCT, more emphasis has been placed on identifying external correlates of SCT symptoms in the absence of ADHD. Studies have identified a significant positive relationship between SCT ratings and internalizing behaviors that remains even when controlling for ADHD-IN (Becker et al., 2016; Burns, Servera, del Mar Bernad, Carrillo, & Cardo, 2013; Leikauf & Solanto, 2017; Penny et al., 2009). SCT remains a significant predictor for both anxiety and depression symptoms even when controlling for the other (i.e. significantly related to anxiety when controlling for depression and vice versa), showing that SCT is a unique predictor for these internalizing domains even after accounting for their high overlap (Becker, Luebbe, Fite, Stoppelbein, & Greening, 2014). Importantly, initial psychometric validation of an adult SCT scale revealed a specific subset of symptoms that was distinct from ADHD-IN and anxiety-depression (Becker et al., 2018). SCT has shown a significant negative relationship or non-existant relationship with externalizing domains (i.e. ADHD-HI and Oppositional Defiant Disorder [ODD]) when controlling for ADHD-IN (Becker et al., 2016; Burns et al., 2013; Penny et al., 2009).

SCT and Impairment

Additionally, SCT remains related to many challenges of daily living, including symptoms of anxiety and depression, social impairment, global impairment, lower self-esteem, and sleep problems, even when controlling for ADHD (Becker, Langberg, Luebbe, Dvorsky, & Flannery, 2014; Becker et al., 2016). SCT has been shown to predict lower quality of life, uniquely contributing to lower self-report ratings of psychological, physical, and overall quality of life beyond ADHD (Combs et al., 2014).

SCT is also related to self-reported deficits in executive functioning in daily life (Barkley 2012; Jarrett, Rapport, Rondon, & Becker, 2017; Leikauf & Solanto, 2017;; Wood et al., 2017).

Specifically, SCT is related to self-reported problems of various facets of EF (i.e., self-motivation, time management, self-organization and problem solving, self-restraint, and self-regulation of emotion) and remains a unique predictor of these areas even when controlling for inattention, hyperactivity, impulsivity, and depression (Jarrett et al, 2017; Wood et al., 2017). Interestingly, Jarrett and colleagues (2017) found that inattention was not a significant predictor of self-regulation of emotion, but SCT was.

Flannery and colleagues (2016) found that emotion dysregulation acted as a mediator between SCT and social impairment, leading the authors to hypothesize that SCT symptoms can impact an individual's ability to regulate their emotions which could lead to increased problems in interpersonal relationships. This relationship is important, considering that SCT is negatively related to interpersonal functioning above and beyond other mental health problems (Becker & Langberg, 2017; Becker et al., 2016; Becker et al., 2014; Burns et al., 2013; Ferretti, King, Hilton, Rondon, & Jarrett, 2019).

Specifically, symptoms of SCT in children predicted poorer peer functioning (i.e, popularity, negative social preference, peer impairment) at a six month follow up, above and beyond ADHD, ODD, conduct disorder, and symptoms of anxiety and depression (Becker 2014). SCT symptoms also predicted higher rates of peer rejection at two year follow ups (del Mar Bernad, Servera, Becker, & Burns, 2016). Children with SCT are more likely to experience social isolation, withdrawal, and loneliness than those without SCT (Becker, Burns, Leopold, Olson, & Willcutt, 2018; Becker, Garner, Tamm, Antonini, & Epstein, 2017; Mikami, Huang-Pollock, Pfiffner, McBurnett & Hangai, 2007; Willcutt et al., 2014). Additionally, children with symptoms of both SCT and ADHD were more likely to be ignored by peers (Willcutt et al., 2014). In a computer task simulating peer interaction, children with ADHD and SCT symptoms

were more socially withdrawn and less attentive to social cues than those with ADHD that did not have SCT symptoms (Mikami et al., 2007).

Compared to children and adolescents, higher rates of SCT are seen in college populations (12-13%; Flannery et al., 2016; Wood et al., 2017). While fewer studies evaluating social functioning of college students with SCT have been identified, symptoms of SCT have been found to be associated with a variety of social impairments in college students, including deficits in social interactions and interpersonal relationships (Barkley, 2012; Flannery et al., 2016; Flannery et al., 2017). Consistent with findings among children and adolescents, symptoms of SCT in adults are related to higher reports of loneliness and lower self-esteem, above and beyond ADHD (Becker et al., 2017). Additionally, college students with SCT also show deficits in their ability to initiate relationships and their ability to assert influence over others (Kirk, 2018).

Interpersonal Stress in College

The transition to college can increase an individual's exposure to interpersonal stress (e.g., moving away from friends and family, added pressure of creating new friendships and relationships; Calvete & Connor-Smith, 2006). The way that college students respond to these stressors can put them at increased risk for further development of mental health problems, such as anxiety and depression (Coiro et al., 2017). Interpersonal stress is defined by Kato (2013) as "stressful episodes between two or more people that involve quarrels, arguments, negative attitudes or behavior, an uncomfortable atmosphere during a conversation or activity, and concern about hurting others' feelings" (p. 100). Interpersonal stress is significantly associated with higher reports of psychological distress, including symptoms of anxiety and depression, and

somatic symptoms (e.g., fatigue, stomach pain, chest aches; Aanes, Mittelmark, & Hetland, 2010).

Hunt and Eisenberg (2010) found that 10% and 17% of college students met screening criteria for anxiety and depression, respectively. Increased social stress in college students is significantly related to symptoms of anxiety and depression, social withdrawal, and aggressive behaviors (Calvete & Connor-Smith, 2006). Importantly, the amount of interpersonal stress an individual experiences is related to the strategies they use to cope with the stress (Coiro et al., 2017).

Defining Coping and Stress Responses

Coping strategies and stress responses are not universal and the evaluation of the response is best understood when also considering the type of stressor the individual is experiencing (e.g., social stress, economic strain, family conflict; Connor-Smith, Compas, Wadsworth, Thomsen & Saltzman, 2000). Coping has been defined and measured in many ways in the past few decades and there has been increased interest in identifying which model is best in understanding the variety of coping strategies and responses (Compas et al., 2017; Connor-Smith et al., 2000; Skinner, Edge, Altman, & Sherwood, 2003). One model derived using confirmatory factor analysis (CFA) that has been highlighted in the coping literature is the control-based model of coping (Connor-Smith et al., 2000).

The control-based model of coping first distinguishes stress responses on the dimension of controllability (e.g. voluntary or involuntary; Compas, Jaser, Dunn, & Rodriguez, 2012; Compas et al., 2017; Connor-Smith et al., 2000; Skinner et al., 2003). Voluntary coping can further be distinguished on a dimension of engagement (e.g., oriented toward the stressor or oriented away from the stressor) - as either primary control engagement responses, secondary

control engagement responses, or disengagement responses (Compas et al., 2012; Compas et al., 2017; Connor-Smith et al., 2000). Primary control coping includes responses that directly act upon or work towards changing the stressor or the environment, such as problem solving, emotion regulation, and emotional expression. Secondary control coping includes effortful responses to adapt to stressors, such as positive thinking, cognitive restructuring, acceptance, or distraction (Compas et al., 2017; Connor-Smith et al., 2000; Skinner et al., 2003). While engagement coping responses act toward accepting or modifying the stressor or environment, disengagement coping responses include the efforts to avoid the stressor, such as denial, avoidance, or wishful thinking (Connor-Smith et al., 2000).

Involuntary responses to stress are also distinguished on a dimension of engagement, with involuntary engagement responses including rumination, intrusive thoughts, and physiological arousal; and involuntary disengagement responses including emotional numbness, inaction, and cognitive interference (Compas, Connor, Osowiecki, & Welch, 1997; Connor-Smith et al., 2000). It has been suggested that an individual's involuntary responses to stress can inhibit their ability to develop or use voluntary coping strategies, so the understanding of both voluntary and involuntary responses to stress is important (Compas et al., 1997; Connor-Smith et al., 2000).

In reviewing methods used to construct category systems of coping, the use of the control-based model of coping was supported by a thorough critique conducted by Skinner and colleagues (2003). These researchers suggested that the best way to understand coping is by viewing it through a hierarchical framework. At the highest level, coping can be seen as adaptive processes, which contain different families of coping. These families of coping then contain

ways of coping (i.e., coping strategies), which organize individual instances of coping that an individual uses on a day-to-day basis.

Conceptualizations of coping have been derived from two approaches: a bottom-up approach and a top-down approach (Skinner et al., 2003). The bottom-up approach groups individual items (i.e., instances of coping) into lower-order ways of coping (e.g., problem solving, avoidance, distraction), which historically has been done using exploratory factor analysis (EFA). Citing commonly highlighted concerns with the EFA approach, Skinner and colleagues (2003) suggest that the best way to identify the lower-order ways of coping is to use confirmatory factor analysis (CFA), allowing researchers to create categories that reflect "conceptual clarity and replicability."

The top-down approach attempts to identify which higher-order families of coping (e.g., approach v. avoidance, engagement v. disengagement) the lower-order ways of coping belong to (Skinner et al. 2003). Skinner and colleagues (2003) identified three major distinctions in the way higher-order families of coping have been discussed: functions of coping (e.g., problem-focused v. emotion-focused), topological characteristics of coping (e.g., active, passive, approach v. avoidance), and higher order action types of coping (e.g., primary v. secondary control coping). Distinguishing higher orders in terms of their functions or their topological characteristics raises concerns, as many of the families of coping within these distinctions are not exhaustive or mutually exclusive (Skinner et al., 2003). According to Skinner and colleagues (2003), the most useful type of higher-order categories are "action" categories, as they bridge the gap between individual instances of coping and adaptive processes through incorporating the behaviors, emotions, attention, and goals of the coping strategies. They identify primary versus

12

secondary coping and involuntary versus voluntary coping as being particularly relevant in understanding the higher order structure of coping.

Because coping functions at a number of different levels, Skinner and colleagues (2003) suggest that identifying the intermediate level of ways of coping is critical in the understanding of coping. Specifically, identifying these ways of coping can assist in organizing the overwhelming amount of instances of coping with respect to their adaptive function. This can be done by merging the bottom-up and top-down approaches, in that it combines the identified lower order categories of coping with the higher order categories of coping, providing us with empirically and theoretically driven intermediate factors that encompass the lower-level strategies of coping (Skinner et al., 2003).

Despite the overwhelming amount of conceptualizations of coping, few have successfully developed a theoretically driven hierarchical framework of coping that has been empirically tested through CFA procedures (Skinner et al., 2003). The only theoretically based model of coping that identified lower order ways of coping a priori was the control-based model of coping as operationalized by the Responses to Stress Questionnaire (RSQ; Compas, Connor-Smith, Saltzman, Thomsen, & Wadsworth, 2001; Connor-Smith et al., 2000; Skinner et al., 2003). Additional support for the control-based model of coping has been demonstrated across a number of populations, including multiple cultures, various stressors, and throughout the lifespan (Coiro et al., 2017; Compas et al., 2017).

Coping Styles and Impairment

The control-based model of coping has been used to evaluate how individuals respond to a variety of stressors, including economic strain, chronic pain, family conflict, and social stress (Andreotti et al., 2013; Calvete & Connor-Smith, 2006; Compas et al., 2017; Raviv &

Wadsworth, 2002; Wadsworth & Compas, 2002). Overall, both primary control coping and secondary control coping have demonstrated a negative relationship with internalizing and externalizing behaviors (Connor-Smith et al., 2000; Raviv & Wadsworth, 2010; Wadsworth & Compas, 2002), while disengagement coping has been positively related to these problems (Connor-Smith et al., 2000). Additionally, involuntary disengagement has been shown to be related to higher reports of internalizing and externalizing symptoms (Raviv & Wadsworth, 2010). Specifically in college students, the use of primary and secondary control coping is related to lower levels of anxiety and depression (Andreotti et al., 2013; Yao et al., 2010), while disengagement, involuntary disengagement, and involuntary engagement are related to higher levels of these symptoms (Yao et al., 2010). The use of secondary control coping in college students is also positively related to executive functioning (Bettis et al., 2017) and specifically working memory abilities (Andreotti et al., 2013).

The relationship between coping and symptoms of psychopathology may be different when considering the different stressors (Connor-Smith et al., 2000). College students experiencing higher levels of interpersonal stress are less likely to use engagement styles of coping and more likely to use disengagement coping (Coiro et al., 2017). Coiro and colleagues (2017) found that the use of engagement styles of coping accounted for a significant portion of the relationship between interpersonal stress and symptoms of these internalizing disorders. Additionally, college students that have higher perceived social support are less likely to to use disengagement coping and more likely to use primary and secondary control coping (Calvete & Connor-Smith, 2006).

The Current Study

Despite the increase in literature on the relationship between SCT and interpersonal stress, there is no known literature on how individuals with SCT cope with these problems. Additionally, there is information on how individuals with internalizing and externalizing symptoms cope, and SCT is highly related to but distinct from a variety of these other psychopathologies (i.e., anxiety, depression, ADHD). Understanding how individuals with SCT respond to stressful social interactions, above and beyond other mental health problems, could help inform possible intervention or prevention approaches for college students with SCT. In addition, very few studies in the SCT literature have used the Adult Concentration Inventory, the most recent and validated measure of SCT for adults (Becker et al., 2018).

The following hypotheses will be evaluated:

1) Individuals experiencing higher amounts of stress will be more likely to engage in voluntary disengagement coping, involuntary disengagement, and involuntary engagement.

2) Higher amount of stress will be positively related to symptoms of ADHD, SCT, and internalizing symptoms.

3) Internalizing symptoms will be positively related to disengagement coping and involuntary stress responses and negatively related to primary and secondary control coping.

4) Because of the commonly occurring relationship between ADHD and deficits in executive function and the positive relationship seen between executive functioning and secondary control coping, it is hypothesized that symptoms of ADHD-IN and ADHD-HI will be negatively related to secondary control coping.

5) As previously reviewed, individuals with higher perceived social support are more likely to use primary and secondary control coping, and individuals with SCT report

experiencing social isolation, loneliness, and deficits in initiating relationships. Because of this, it is predicted that symptoms of SCT will be negatively related to primary and secondary control coping.

6) It is hypothesized that, after accounting for commonly comorbid and associated characteristics (i.e., ADHD, internalizing symptoms), SCT symptoms will:

a) be uniquely and positively predictive of disengagement coping, involuntary engagement stress responses, and involuntary disengagement stress response; and

b) be uniquely and negatively predictive of primary control coping and secondary control coping.

Methods

Participants and Procedure

The sample consisted of 412 undergraduate students at Auburn University enrolled in a psychology course, recruited via the online research participation database, SONA. Participants ranged in age from 18 to 23 years (M = 19.66, SD = 1.25). Freshman students made up the majority of the sample (43%), followed by sophomores (24%), juniors (16.5%), and seniors (16.3%). The majority of the sample self-identified as White (89.1%), Not Hispanic/Latino (96.1%), and female (79.6%). Table 1 provides a complete description of the study's sample characteristics.

Before starting the study, participants read an Information Letter and provided informed consent. Participants completed the Institutional Review Board (IRB) approved study through Qualtrics on an electronic device of their choice. Participants received ½ hour of extra credit for a course of their choice.

Measures

   Responses to Stress Questionnaire – Peer Social Stress College Version (RSQ-SSV).

The Responses to Stress Questionnaire (RSQ; Connor-Smith, et al., 2000) is a self-report

measure created to assess how much stress an individual is experiencing, in what way the

individual responds to the interpersonal stressors, and how often they respond in those ways.

The RSQ begins with 14 items inquiring about the individual's level of interpersonal stress that

they have experienced in the past six months. Response scale for these items ranges from 1 *(Not

at all)* to 4 (*Very*). The responses will be summed to calculate the amount of stress the individual

is experiencing.

   Additionally, the RSQ-SSV includes 57 items that inquire about how they respond to

interpersonal stress and how often. The RSQ-SSV consists of three factors that evaluate

cognitive and behavioral coping responses (Primary Control Coping, Secondary Control Coping,

and Disengagement) and two factors that evaluate cognitive, behavioral, physiological, and

emotional involuntary stress responses (Involuntary Engagement and Involuntary

Disengagement). The response scale for each item ranges from 1 (*Not at all*) to 4 (*A lot*). As

recommended by the developers, proportion scores for the factors will be calculated to account

for response bias and differences in base rates of item endorsements (Connor-Smith et al., 2000).

The RSQ has exhibited acceptable internal consistency on all five factors (α=.73-.89) and has

been well supported through CFA procedures in multiple populations, including various

countries, ethnic groups, and age groups (Compas et al., 2017; Connor-Smith et al., 2000;

Skinner et al., 2003). Within college samples, the voluntary factors of the RSQ have exhibited

good internal consistency (r = .67-.84; Bettis et al., 2017; Coiro et al., 2017).

In the current study, 55 items were used to calculate the five factors evaluating responses to interpersonal stress. Specifically, one item from the 12-item Secondary Control Coping and one item from the 12-item Involuntary Disengagement factor were inadvertently omitted. In the present study, internal consistency was adequate for Secondary Control Coping (α=.71) and good for Involuntary Disengagement (α=.80), which is relatively consistent with previous findings (α=.80, α=.81, respectively; Conner-Smith et al., 2000). Internal consistencies for Primary Control Coping and Disengagement Coping were adequate (α=.78, α=.74, respectively), while internal consistency for Involuntary Engagement was excellent (α=.92).

Barkley Adult ADHD Rating Scale - IV (BAARS-IV). The Barkley Adult ADHD Rating Scale-IV (BAARS-IV; Barkley, 2011) is an 18-item self-report measure that evaluates symptoms of ADHD in adults based on the *Diagnostic and Statistical Manual of Mental Disorders* (4th edition; DSM-IV). The symptoms used to assess a diagnosis of ADHD did not change from DSM-IV to DSM-5 (APA, 2013). The BAARS-IV items load on three distinct factors: inattention, hyperactivity, and impulsivity. Item responses range from 1 (*Never or Rarely*) to 4 (*A lot*). The BAARS-IV has demonstrated good internal consistency in samples of adults with ADHD (ADHD Inattention α=.902; ADHD Hyperactive–Impulsive α=.798) and adequate test-retest reliability (ADHD Inattention α=.66, ADHD Hyperactive-impulsive α=.74; Barkley, 2011). The use of the BAARS-IV is also supported through research documenting its construct validity, discriminant validity, criterion-related validity and rating relationship with adverse outcomes in several domains. In the current study, internal consistency was good for ADHD-IN (α=.86) and adequate for ADHD-HI (α=.75).

Depression Anxiety Stress Scales – 21 (DASS-21). The Depression Anxiety Stress Scales-21 (DASS-21; Lovibond & Lovibond, 1995) is a 21 item self-report measure that assesses

an individual's level of depression and anxiety. Item responses range from 1 (*did not apply to me at all*) to 4 (*applied to me very much or most of the time)*. The DASS-21 has demonstrated high internal consistency in samples of college students (Anxiety α=.80, Depression α=.91). Consistent with previous SCT literature, nine items were used to create a single internalizing factor. In the present study, internal consistency for the 9-item internalizing factor was excellent (α=.92).

Adult Concentration Inventory (ACI). The Adult Concentration Inventory (ACI; Becker et al., 2018) is a 16-item self-report measure assessing SCT symptoms in adults in the past six months. The ACI includes 13 items identified as being representative of the SCT construct from a meta-analysis (Becker et al., 2016) and three items identified as being important in identifying mental confusion symptoms of SCT (McBurnett et al., 2014). Item responses range from 0 (*Not at all*) to 3 (*Very often*). Through confirmatory factor analyses, 10 items on the ACI demonstrated good convergent and discriminant validity in distinguishing SCT from ADHD-inattention, anxiety, and depression. The 10-item ACI exhibited good reliability (α=.89) and good concurrent validity in correlating with external constructs that have been previously identified as being related to SCT (i.e., executive dysfunction, functional impairment, and socioemotional adjustment) (Becker et al., 2018). In the current study, internal consistency for the 10-item ACI was excellent (α=.91).

Demographics. A demographics questionnaire will be created to assess descriptive characteristics of interest such as age, race, ethnicity, year in college, and gender. The availability of this demographic information allowed for exploration of the associations with interpersonal stress response.

Data Analytic Approach

　　To account for individuals that responded in a careless manner, data screening strategies from Meade and Craig (2012) were used. Five "bogus" items were placed throughout the survey to identify individuals that were presumed to not be paying attention to the questionnaire content or were answering randomly (e.g., "How good are you at holding your breath underwater for five hours?"). In addition, a question asking how honest their responses were was included at the end of the survey. Participants were informed that they should complete the survey in one sitting to reduce the potential impact of situational interpersonal problems. Individuals who kept the survey's link open for more than 24 hours were excluded. The preceding methods removed 23.11% of the original study participants. Furthermore, because we were interested in evaluating responses to stress in a college sample, individuals that reported no experiences of stress or were enrolled for less than six months at the time of the survey were excluded (6.33%). There were no identified patterns within the demographics or the study variables for the excluded individuals.

Statistical Analyses

　　Bivariate correlations were conducted to investigate the relationship between independent variables (symptoms of SCT, ADHD-IN, ADHD-HI and internalizing problems), demographic variables (age, race, and gender) and the dependent variables of interest (amount of interpersonal stress and responses to interpersonal stress). Hierarchical regressions were conducted with variables that demonstrated a significant bivariate relationship in order to examine to what extent each variable was uniquely associated with stress. Specifically, demographic variables, symptoms of ADHD, and internalizing symptoms were entered in a blockwise fashion to examine the extent that SCT uniquely predicted response to interpersonal stress. There were no

violations of the main assumptions of linear models, as assessed by plotting residuals, examining the spread of scores, and checking variance inflation factors (VIF) and tolerance values.

Results

Table 2 presents the descriptive statistics and correlations for the demographics and the study variables. Perceived stress demonstrated a negative relationship with age and race, but a positive relationship with ADHD-HI, ADHD-IN, internalizing symptoms, and SCT. Both primary control coping and secondary control coping were significantly negatively correlated with the independent variables (i.e., ADHD-HI, ADHD-IN, internalizing symptoms, and SCT), though the demographics they correlated with differed. While primary control coping was negatively related to race, it was positively correlated with age. Secondary control coping was negatively correlated with sex. The other RSQ factors (i.e., disengagement coping, involuntary engagement, and disengagement coping) were significantly positively correlated with the independent variables (i.e., ADHD-HI, ADHD-IN, internalizing symptoms and SCT), with the exception of disengagement coping not demonstrating a significant correlation with ADHD-HI. Regarding demographics, disengagement coping was significantly positively correlated with race, involuntary engagement was significantly positively correlated with sex, and involuntary disengagement was significantly negatively correlated with age.

Results of the hierarchical regression with perceived stress as the outcome variable are presented in Table 3. Age accounted for 1% of the variance in perceived stress (Step 1). Including ADHD-HI and ADHD-IN in the model (Step 2) accounted for an additional 19% of the variance and age was no longer significant. In Step 3, internalizing symptoms were added to the model, accounting for an additional 12% of the variance. With internalizing symptoms included, ADHD-IN no longer remained significantly related to perceived stress. While the

overall model remained significant when SCT was added (Step 4), including SCT did not

produce a significant change in the accounted variance. ADHD-HI and internalizing symptoms

remained as significant independent predictors of perceived stress.

Table 4 depicts the results of the hierarchical regression with primary control coping as

the outcome variable. Age and race accounted for 3% of the variance. Both demographics

remained significant once ADHD-IN and ADHD-HI were added in the model (Step 2). Including

ADHD-IN and ADHD-HI accounted for an additional 17% of the variance. Both were

significant predictors in the model, with ADHD-IN having the stronger effect in the model. In

Step 3, internalizing symptoms were added, accounting for an additional 7% of the variance.

With the addition of internalizing symptoms, ADHD-HI and race no longer remained significant

predictors in the model, and internalizing symptoms and ADHD-IN remained the most impactful

in the outcome. The addition of SCT (Step 4) accounted for an additional 1% of the variance.

Age, ADHD-IN, and internalizing symptoms remained as significant independent predictors in

the model. Internalizing symptoms continued to have the strongest effect on primary control

coping.

The results of the hierarchical regression with secondary control coping as the outcome

variable is presented in Table 5. In Step 1, sex accounted for 5% of the variance. The addition of

ADHD-IN and ADHD-HI (Step 2) accounted for an additional 12% of the variance, though

ADHD-HI had a relatively smaller effect than the other predictors. ADHD-IN and ADHD-HI

were no significant predictors in the model once internalizing symptoms were added (Step 3),

which accounted for an additional 20% of the variance. The overall model remained significant

once SCT was added (Step 4), but it did not produce a significant increase in the amount of

accounted variance. SCT was not significant in the model and internalizing symptoms continued to have the strongest impact on secondary control coping.

Table 6 contains the results of the hierarchical regression with disengagement coping as the outcome variable. Including race in Step 1 accounted for 2% of the variance. In Step 2, ADHD-IN was added and the model accounted for an additional 2% of variance in the outcome. ADHD-IN was no longer a significant predictor in the model once internalizing symptoms were added (Step 3), which accounted for an additional 2% of the variance. SCT was added in Step 4, but it did not produce a significant effect on disengagement coping.

The results of the hierarchical regression with involuntary engagement as the outcome variable is presented in Table 7. Gender accounted for 4% of the variance in the model in Step 1. Including ADHD-IN and ADHD-HI (Step 2) accounted for an additional 13% of the variance, and all three predictors remained significant, with ADHD-IN having the biggest impact. The inclusion of internalizing symptoms in Step 3 was significant, accounting for an additional 15% of the variance. Internalizing symptoms had the largest impact in the model, followed by sex and ADHD-HI; ADHD-IN no longer remained a significant predictor. SCT (Step 4) was not a significant unique predictor.

The results of the hierarchical regression with involuntary disengagement as the outcome variable is presented in Table 8. In Step 1, age accounted for 1% of the variance in the model. ADHD-IN and ADHD-HI were added in Step 2 and accounted for an additional 18% of the variance. ADHD-IN had a stronger impact in the model than ADHD-HI, and age was no longer significant. The addition of internalizing symptoms (Step 3) accounted for an additional 12% of the variance in the model. ADHD-HI was no longer a significant predictor in the model, and internalizing symptoms had the largest effect. SCT (Step 4) accounted for an additional 1% of

variance. Age and ADHD-IN were no longer significant in the model and internalizing symptoms continued to have the largest impact.

Discussion

With evidence that SCT is a unique and distinct construct, more focus has been placed on determining the external correlates of this clinical entity (Becker et al., 2016). SCT has been shown to be highly related to ADHD-IN, but negatively or not related to ADHD-HI. Additionally, SCT is significantly positively related to internalizing disorders (i.e., anxiety and depression; Becker et al., 2016). SCT is associated with many facets of impairment in adults, including overall lower quality of life (Combs et al., 2014), executive dysfunction (i.e., self-motivation, time management, self-organization/problem solving, self-restraint, self-regulation of emotion; Jarrett et al., 2017), and interpersonal difficulties (e.g., increased loneliness, lower self-esteem, difficulty initiating relationships; Barkley, 2012; Becker et al., 2017; Flannery et al., 2016; Flannery et al., 2017; Kirk, 2018). Furthermore, Flannery and colleagues (2016) identified emotion dysregulation as a mediator between SCT and social impairment, suggesting that symptoms of SCT could be impacting one's ability to regulate their emotions, leading to increased interpersonal difficulties. While there is information on how individuals with internalizing and externalizing symptoms respond to interpersonal stress (Coiro et al., 2017), there is no known information on how individuals with SCT respond. The current study evaluated the unique impact of SCT on the amount of interpersonal stress an individual experiences and how the individual responds to the interpersonal stress, while controlling for ADHD and internalizing symptoms.

As hypothesized, the amount of interpersonal stress an individual reported was significantly related to higher utilization of voluntary disengagement coping (e.g., efforts to

avoid a stressor, such as denial, avoidance, or wishful thinking), involuntary disengagement (e.g., involuntary responses that act away from the stressor, such as emotional numbness, inaction, and cognitive interference), and involuntary engagement (e.g., involuntary responses oriented toward the stressor, including rumination, intrusive thoughts, or physiological arousal). Coiro and colleagues (2017) found a similar relationship between voluntary disengagement coping and interpersonal stress, but this is the first known study to evaluate the relationship between amounts of interpersonal stress with involuntary stress responses. While considering the exact type of stressor is important (Connor-Smith et al., 2000), similar relationships have been identified between involuntary engagement and other types of stress (e.g., poverty-related family stress; Wadsworth & Berger, 2006).

The second hypothesis, which proposed that higher amounts of interpersonal stress would be positively related to symptoms of ADHD, SCT, and internalizing symptoms, was supported. Both ADHD-HI and ADHD-IN symptoms demonstrated significant moderate correlations with interpersonal stress. These findings are consistent with previous literature. Specifically, higher levels of ADHD symptoms are related to increased social impairment (Hoza, 2007; Sacchetti & Lefler, 2017), increased social concerns (Blase et al., 2009), and lower levels of self-esteem (Canu & Carlson, 2007; Shaw-Zirt, Popali-Lehane, Chaplin, & Bergman, 2005) in college students.

A moderate positive correlation was seen between SCT and amount of interpersonal stress. This is unsurprising, as symptoms of SCT have been found to be associated with deficits in social interactions, interpersonal relationships, and overall social functioning (Barkley, 2012; Flannery et al., 2016; Flannery et al., 2017). However, amount of interpersonal stress was found to have a slightly stronger relationship with internalizing symptoms. This is consistent with

previous literature that has identified a significant positive relationship between interpersonal stress and anxiety, depression, and somatization in college students (Coiro et al., 2017).

The third hypothesis, which suggested that internalizing symptoms would be positively related to voluntary disengagement coping and involuntary stress responses and negatively related to primary control coping (e.g., responses that directly act upon or work toward changing the stressor or the environment, such as problem solving, emotion regulation, and emotional expression) and secondary control coping (e.g., effortful responses to adapt to stressors, such as positive thinking, cognitive restructuring, acceptance, or distraction), was supported. A moderate positive correlation was observed between internalizing symptoms and involuntary engagement and involuntary disengagement, suggesting that involuntary stress responses may be maladaptive. Primary control coping and secondary control coping, on the other hand, may be more adaptive, as negative correlations were observed between these factors and internalizing symptoms. Lastly, a weak significant positive correlation was observed between internalizing symptoms and disengagement coping. Considering depression and anxiety from an emotion regulation perspective, they appear to be the result of dysregulation in response to stress, with individuals that have anxiety or mood disorders more likely to utilize ineffective coping strategies and stress responses (e.g., avoidance, withdrawal, suppression) than those that do not have a disorder (Campbell-Sills & Barlow, 2007; Gross & Muñoz, 1995). Thus, increased levels of internalizing symptoms may impact the way an individual is able to employ a coping strategy. The weak relationship between internalizing symptoms and disengagement coping may highlight that disengagement coping may not be as linked to emotional problems as one would think. In fact, utilizing disengagement coping strategies may be beneficial in providing an individual with

the time and energy to engage with the stressor later on in a more adaptive way (Skinner et al., 2003).

Because of the well-established relationship between ADHD and executive dysfunction, and because of the positive relationship seen between executive functioning and secondary control coping (Andreotti et al., 2013; Bettis et al., 2017), the fourth hypothesis proposed that ADHD would be negatively related to secondary control coping. This was supported, as ADHD-HI and ADHD-IN symptoms were observed to have significant, but weak, negative correlations with secondary control coping. While a significant relationship was found, it may be that there is variability in executive functioning deficits in individuals with ADHD, and some executive functions may have a higher impact on coping than others. Utilizing secondary control coping strategies requires intact executive functioning skills. Specifically, one may have to inhibit their initial response to a stressor, reduce attention to nonessential stimuli, and employ cognitive control to focus on utilizing positive thinking or cognitive restructuring. Many studies have demonstrated a negative relationship between ADHD and multiple executive functions that could be essential to utilizing secondary control coping responses (e.g., inhibition, emotional control, sustained attention) in adults. Hocking and colleagues (2010) found that selective attention, defined as "the ability to efficiently identify important elements of stimuli and resist distraction" (Manly, Robertson, Anderson, & Nimmo-Smith, 1999, p. 65), was significantly related to the use of secondary control coping in a sample of individuals with chronic pain, but found no relationship between overall executive function and secondary control coping. Additionally, Andreotti and colleagues (2010) identified a positive relationship between working memory and secondary control coping, further suggesting that different executive functions may have different relations with secondary control coping.

The fifth hypothesis, which proposed that symptoms of SCT would be negatively related to primary and secondary control coping, was supported. The control based model of coping distinguishes ways of coping based on a level of engagement (e.g. oriented toward the stressor or oriented away from the stressor), with primary and secondary control coping being oriented toward the stressor (Compas et al., 2012; Compas et al., 2014; Connor-Smith et al., 2000). Because symptoms of SCT are associated with social impairments (Becker et al., 2017; Flannery et al., 2016; Flannery et al., 2017; Kirk, 2018), and specifically related to increased social isolation and withdrawal (Becker et al., 2018; Becker et al., 2017; Mikami et al., 2007; Willcutt et al., 2014), it follows that SCT would be negatively related to engagement styles of coping (i.e., primary and secondary control coping).

The final hypothesis proposed that, after accounting for commonly comorbid and associated characteristics (i.e., ADHD, internalizing symptoms), SCT would demonstrate a unique relationship with the five different coping and stress response factors. Overall, SCT uniquely contributed to the prediction of primary control coping and involuntary disengagement, but did not account for additional variance for secondary control coping, voluntary disengagement, or involuntary engagement.

SCT was found to uniquely contribute to the prediction of primary control coping after accounting for other characteristics, though internalizing symptoms contributed the most unique variance in the final model. ADHD-IN remained significant in the full model, but became less significant once SCT was added. As previously mentioned, lower levels of internalizing symptoms are related to increased utilization of primary control coping, meaning they are directly acting or working on changing the stressor or their environment (Connor-Smith et al., 2000; Raviv & Wadsworth, 2010; Wadsworth & Compas, 2002). Individuals with anxiety may

be more likely to avoid situations that increase their stress or anxious symptoms, actively choosing not to engage in primary control coping. Additionally, depression often produces behaviors that are maladaptive to an individual's function, including a lack of action or low energy. It may be that these common difficulties that individuals with depression and anxiety have may be influencing their response to stress. Because of the high overlap between ADHD-IN and SCT (Barkley, 2012), it is not surprising that adding in SCT would lower the impact of ADHD-IN in the full model. The full model suggests that several clinical phenomena are related to utilization of primary control coping, though internalizing symptoms appear to have a bigger impact than ADHD-IN or SCT symptoms. Additionally, Kofler and colleagues (2019) found that individuals with parent-reported symptoms of SCT displayed a slower working memory system and a faster inhibition system. They hypothesized that individuals with SCT may appear as sluggish or less alert because their overly inhibited tendency is preventing them from engaging in expected behaviors. It may be that individuals with SCT are not engaging in primary control coping because they're inhibited from acting before their behavior starts.

SCT did not uniquely predict utilization of secondary control coping after accounting for other variables. Additionally, while ADHD-HI and ADHD-IN accounted for unique variance in the model at first, once accounting for shared variance with internalizing symptoms, the latter was the sole unique contributor, along with sex. Secondary control coping are generally adaptive ways to deal with negative situations and emotions. Overall, internalizing symptoms are related to maladaptive ways in dealing with stress, so it is unsurprising that internalizing symptoms account for the largest amount of variance. Symptoms of SCT (e.g., apathetic/unmotivated, slow thinking/processing, loses train of thought/cognitive set) may impact an individual's ability to use some of the strategies included in secondary control coping (e.g., positive thinking, cognitive

restructuring), but may not hinder their ability to use others (e.g., distraction). Analyzing the relationship at the factor level may not be providing the full picture of how individuals with SCT cope with interpersonal stressors.

SCT did not uniquely predict utilization of voluntary disengagement coping after accounting for other variables. Race and internalizing symptoms remained significant unique predictors in the model, contributing almost equally to the use of disengagement coping. As reviewed previously, internalizing symptoms often lead to maladaptive behaviors that are similar to the strategies included in the voluntary disengagement coping factor (e.g., avoidance; Campbell-Sills & Barlow, 2007; Gross & Muñoz, 1995). Additionally, internalizing symptoms have specifically been related to avoidance and denial strategies (Aldao et al., 2010; Compas et al., 2017), while other studies have identified a relationship between internalizing symptoms and the overall voluntary disengagement coping factor (Coiro et al., 2017; Compas et al., 2017). The lack of influence from SCT may be due to the idea that individuals with SCT are not actively choosing to use voluntary disengagement coping, but their actions may be impacted by the overactive inhibition and slower working memory in a given social situation (Kofler et al., 2019).

Overall, internalizing symptoms appeared to have the biggest impact on voluntary coping responses when including other symptoms of psychopathologies in the model. Specifically, a significant positive relationship remained between internalizing symptoms and voluntary disengagement coping, and a negative relationship remained between internalizing symptoms and primary control coping and secondary control coping. Individuals with anxiety and depression have difficulties regulating their emotions in response to stress (Campbell-Sills & Barlow, 2007; Gross & Muñoz, 1995), which would put them at a higher likelihood to respond to

stress with a disengagement style of coping and a lower likelihood to respond in a voluntary engagement style. SCT did not uniquely predict utilization of involuntary engagement after accounting for other variables. While ADHD-IN was significant in the second step of the model, this was due to shared variance with internalizing symptoms, which emerged as an important unique predictor. This is likely due to the high rate of comorbidity and symptom overlap between ADHD-IN and anxiety (O'Rourke, Bray, & Anastopoulos, 2017; Schatz & Rostain, 2006). Sex, ADHD-HI, and internalizing symptoms remained significant in the final step of the model. One of the strategies in the involuntary engagement factor is rumination, which has been highlighted as an important transdiagnostic factor in depression and anxiety (McLaughlin & Nolen-Hoeksema, 2011). Other strategies included in involuntary engagement are commonly seen in individuals with internalizing symptoms. Both anxiety and depression are characterized by an increase of intrusive thoughts, with anxiety being characterized by intrusive catastrophic thoughts and depression being characterized by negative intrusive thoughts about oneself or the world (Harvey, Watkins, Mansell, & Shafran, 2004). Symptoms of physiological arousal are included in the *DSM-5* diagnostic criteria for generalized anxiety disorder (American Psychiatric Association, 2013), but the tripartite model suggests that physiological arousal is a unique characteristic of anxiety, absent from depression (Clark & Watson, 1991). Consistent with previous SCT literature, this study used a single internalizing factor that consisted of a combination of anxiety and depression symptoms, but future research could benefit from analyzing these factors separately. Lastly, because involuntary engagement contains impulsive action, it follows that ADHD-HI would remain a significant, although small, predictor in the final model. Maedgen and Carlson (2000) found that individuals with ADHD combined type, but not individuals with ADHD inattentive type, displayed increased emotional and behavioral

dysregulation. Additionally, adults with ADHD-HI demonstrate overall increased physiological arousal, represented by fidgeting, restlessness, and inability to relax, and increased emotional arousal, represented by increased irritability or frustration when having to wait (Asherson, Ramos-Quiroga, Young, 2018).

In the final regression, SCT uniquely predicted involuntary disengagement stress responses above and beyond other variables, though clearly secondary to internalizing symptoms. Before the addition of SCT to the model, ADHD-IN was significant, which highlights the large overlap and co-occurrence between ADHD-IN and SCT. Phenomena in the involuntary disengagement response factor include cognitive interference (e.g., "My mind goes blank when I have problems with my friends; I can't think at all.") and inaction (e.g., "I just freeze when I have problems with my friends; I can't do anything."). These items seem highly similar to certain symptoms of SCT, including: daydreams, lost in thoughts, stares blankly, and loses train of thought/cognitive set. Kofler and colleagues (2019) identified specific deficits in the cognitive processes in individuals with parent-reported SCT, including overinhibition and slowed working memory. They hypothesized that the combination of overinhibition and decreased working memory may give the appearance of the symptoms represented by SCT (e.g., appears sluggish, daydreaming, lost in thoughts), which are similar to the strategies included in the involuntary disengagement factor. Similar to involuntary engagement, many of the strategies included in the involuntary disengagement factor are maladaptive behaviors or responses that are frequently observed in individuals with depression and anxiety (e.g., emotion numbing, cognitive interference). The contribution of internalizing symptoms in this model is consistent with previous research, in which involuntary disengagement was positively related to depressive and anxious symptoms (Raviv & Wadsworth, 2010; Yao et al., 2010).

Limitations and Future Directions

The current study contributes to the growing SCT literature by evaluating the relationship between SCT and responses to interpersonal stress while controlling for commonly related psychopathologies. Many studies that evaluate SCT do so within a sample of individuals with ADHD. Considering that 46% of individuals with high SCT symptoms do not report high ADHD symptoms (Barkley, 2012), findings from these studies can be limiting. This study sample was derived from a general college population and therefore was not limited to those with ADHD, allowing examination of SCT independent from ADHD. In addition, this study evaluated ADHD-IN and ADHD-HI separately, allowing exploration of the unique contributions of the symptom clusters representing subtypes of ADHD. Because of the high overlap between internalizing symptoms and SCT, this study controlled for internalizing symptoms while evaluating the relationship that symptoms of SCT have with external constructs. In addition, along with other well-validated measures, this study utilized the ACI (Becker et al., 2017) to measure SCT, which is based on a meta-analytic review of the SCT literature, and identified items that were distinguishable between SCT and related constructs (i.e., anxiety, depression, and ADHD). Lastly, this study utilized a model of coping that is theoretically and empirically driven, and evaluates responses to stress in consideration of the stressor, providing a better understanding of the way individuals cope (Compas, Connor-Smith, Saltzman, Thomsen, & Wadsworth, 2001; Connor-Smith et al., 2000; Skinner et al., 2003).

Nonetheless, the results of this study should be evaluated with a few limitations in mind. The current study collected data from college students enrolled in psychology undergraduate courses at a Southern university. The sample consisted of primarily white females in the first year of college, limiting the generalizability of the findings. In addition, this study relied on self-report

measures. It may be that individuals under-reported the amount of interpersonal stress or symptoms of psychopathologies that they were experiencing. While many of the stress responses included in the RSQ are not observable, other studies have utilized heart rate reactivity to substantiate individuals' self-report on the RSQ (Connor-Smith et al., 2000; Dufton, Dunn, Slosky, & Compas, 2011). Future studies examining SCT would benefit from including performance-based measures of attention and executive functions, including working memory and inhibition, to further understand what processes are implicated in SCT and to further differentiate between ADHD and SCT. In addition, future studies would benefit from evaluating internalizing symptoms and ADHD as potential mediators or moderators through longitudinal research in order to evaluate the way these variables impact how individuals with SCT respond to interpersonal stress.

Because internalizing symptoms remained the most significant predictor in each regression, it would be beneficial to more specifically examine the relationship between internalizing disorders and responses to stress. This study utilized a nine-item internalizing factor from the DASS-21, which is consistent with previous SCT literature. These items included in the factor includes six items related to depression and three items related to anxiety. Evaluating the responses to stress using the separate anxiety and depression factors may highlight some of the distinctions and unique features of anxiety and depression. Specifically, many of the items excluded from the original DASS-21 anxiety scale capture physiological symptoms of anxiety. Considering that many responses to stress have a physiological component, excluding these items may have lessened the extent of the relationship between internalizing symptoms and responses to stress.

The way that individuals respond to interpersonal stress is related to mental health symptoms (Coiro et al., 2017). Additionally, college students experiencing increased amounts of interpersonal stress are less likely to use primary and secondary control coping and more likely to use disengagement coping or involuntary engagement or disengagement coping (Coiro et al., 2017). Future research would benefit from evaluating potential interventions targeted at improving college students' coping strategies to decrease the likelihood of experiencing mental health difficulties. Further exploration of the strategies encompassed within the five factors on the RSQ would be beneficial, as it could provide insight into what specific coping methods interventions should utilize.

Additionally, future research should continue to evaluate SCT using validated measures. Despite the recent publication of the ACI, many researchers continue to use different measures to evaluate SCT, making it difficult to compare results between studies. These studies should be done not only within samples of individuals with ADHD, but with individuals without ADHD as well, as many individuals with high SCT symptoms who do not report high ADHD symptoms (Barkley 2012). Individuals with SCT but without symptoms of ADHD may not be seeking treatment to aide in their symptoms, yet may be experiencing impairment in their daily lives. Additional consideration should be given to treatment options for individuals with symptoms of SCT, with and without ADHD.

References

Aanes, M. M., Mittelmark, M. B., & Hetland, J. (2010). Interpersonal stress and poor health: The mediating role of loneliness. *European Psychologist, 15*(1), 3-11. doi:10.1027/1016-9040/a000003.

Aldao, A., Nolen- Hoeksema, S., & Schweizer, S. (2010). Emotion-regulation strategies across psychopathology: A meta-analytic review. *Clinical psychology review, 30*(2), 217-237. doi:10.1016/j.cpr.2009.11.004

American Psychological Association (2013). Highlights of changes from DSM-IV to DSM-5. American Psychiatric Publishing.

Andreotti, C., Thigpen, J. E., Dunn, M. J., Watson, K., Potts, J., Reising, M. M., Robinson, K. E., Rodriguez, E. M., Roubinov, D., Luecken, L. & Compas, B. E. (2013). Cognitive reappraisal and secondary control coping: associations with working memory, positive and negative affect, and symptoms of anxiety/depression. *Anxiety, Stress & Coping, 26*(1), 20-35. doi:10.1080/10615806.2011.631526

Asherson, P., Ramos-Qiroga, J A., & Young, S. (2018). Adult ADHD clinical presentation and assessment. In T. Banaschewski, D. Coghill, & A. Zuddas (Eds.), *Oxford textbook of Attention Deficit Hyperactivity Disorder* (pp. 178-189). Oxford, United Kingdom: Oxford University Press.

Barkley, R. A. (2011). *Barkley Adult ADHD Rating Scale-IV (BAARS-IV)*. New York, NY: Guilford.

Barkley, R. A. (2012). Distinguishing sluggish cognitive tempo from Attention-Deficit/Hyperactivity Disorder in adults. *Journal of Abnormal Psychology, 121*(4), 978-990. doi:10.1037/a0023961

Barkley, R. A. (2014). Sluggish cognitive tempo (concentration deficit disorder?): Current status, future directions, and a plea to change the name. *Journal of Abnormal Child Psychology, 42*, 117-125. doi:10.1007/s10802-013-9824-y

Becker, S. P. (2014). Sluggish cognitive tempo and peer functioning in school-aged children: A six-month longitudinal study. *Psychiatry Research, 38,* 72-78. doi:10.1016/j.psychres.2014.02.007

Becker, S. P., Burns, G. L., Garner, A. A., Jarrett, M. A., Luebbe, A. M., Epstein, J. N., & Willcutt, E. G. (2018). Sluggish cognitive tempo in adults: Psychometric validation of the adult concentration inventory. *Psychological Assessment, 30*(3), 296-310. doi:10.1037/pas0000476

Becker, S. P., Burns, G. L., Leopold, D. R., Olson, R. K., & Willcutt, E. G. (2018). Differential impact of trait sluggish cognitive tempo and ADHD inattention in early childhood on adolescent functioning. *Journal of Child Psychology and Psychiatry, 59*(10), 1094-1104. doi:10.1111/jcpp.12946

Becker, S. P., Garner, A. A., Tamm, L., Antonini, T. N., & Epstein, J. N. (2017). Honing in on the social difficulties associated with sluggish cognitive tempo in children: Withdrawal, peer ignoring, and low engagement. *Journal of Clinical Child & Adolescent Psychology*, 1-10. doi:10/1080/15374416.2017.1286595

Becker, S. P., & Langberg, J. M. (2017). Sluggish cognitive tempo among young adolescents with ADHD: Relations to mental health, academic, and social functioning. *Journal of Attention Disorders, 17*(8), 681-689. doi:10.1177/1087054711435411.

Becker, S. P., Langberg, J. M., Luebbe, A. M., Dvorsky, M. R., & Flannery, A. J. (2014). Sluggish cognitive tempo is associated with academic functioning and internalizing

symptoms in college students with and without attention-deficit/hyperactivity disorder.
Journal of Clinical Psychology, 70(4), 388-403. doi:10.1002/jclp.22046

Becker, S. P., Leopold, D. R., Burns, G. L., Jarrett, M. A., Langberg, J. M., Marshall, S. A.,
McBurnett, K., Waschbusch, D. A., & Willcutt, E. G. (2016). The internal, external, and
diagnostic validity of sluggish cognitive tempo: A meta-analysis and critical review.
Journal of the American Academy of Child & Adolescent Psychiatry, 55(3), 163-178.
doi:10.1016/j.jaac.2015.12.006

Becker, S. P., Luebbe, A. M., Fite, P. J., Stoppelbein, L., & Greening, L. (2014). Sluggish
cognitive tempo in psychiatrically hospitalized children: Factor structure and relations to
internalizing symptoms, social problems, and observed behavioral dysregulation. *Journal
of Abnormal Child Psychology, 42*(1), 49-62. doi:10.1007/s10802-013-9719-y

Becker, S. P., Marshall, S. A., & McBurnett, K. (2014). Sluggish cognitive tempo in abnormal
child psychology: An historical overview and introduction to the special section. *Journal
of Abnormal Child Psychology, 42*(1), 1-6. doi:10.1007/s10802-013-9825-x

Becker, S. P., & Willcutt, E. G. (2019). Advancing the study of sluggish cognitive tempo via
DSM, RdoC, and hierarchical models of psychopathology. *European Child & Adolescent
Psychiatry, 28(*5), 603-613. doi:10.1007/s00787-018-1136-x

Bettis, A. H., Coiro, M. J., England, J., Murphy, L. K., Zelkowitz, R. L., Dejardins, L., Eskridge,
R., Adery, L. H, Yarboi, J., Pardo, D., & Compas, B. E. (2017). Comparison of two
approaches to prevention of mental health problems in college students: Enhancing
coping and executive function skills. *Journal of American College Health*, 65(3), 313-
322. doi:10.1080/07448481.2017.1312411

Blase, S. L., Gilbert, A. N., Anastopoulos, A. D., Costello, E. J., Hoyle, R. H., Swartzwelder, H. S., & Rabiner, D. L. (2009). Self-reported ADHD and adjustment in college: Cross-sectional and longitudinal findings. *Journal of Attention Disorders, 13*(3), 297-309. doi:10.1177/1087054709334446

Burns, G. L., Servera, M., del Mar Bernad, M., Carrillo, J. M., & Cardo, E. (2013). Distinctions between sluggish cognitive tempo, ADHD-IN, and depression symptom dimensions in spanish first-grade children. *Journal of Clinical Child & Adolescent Psychology, 42*(6), 796-808. doi:10.1080/15374416.2013.838771

Calvete, E. & Connor-Smith, J. K. (2006). Perceived social support, coping, and symptoms of distress in American and Spanish students. *Anxiety, Stress, and Coping, 19*(1), 47-65. doi:10.1080/10615800500472963.

Campbell-Sills, L., & Barlow, D. H. (2007). Incorporating emotion regulation into conceptualizations and treatments of anxiety and mood disorders. In J. J. Gross (Ed.). *Handbook of Emotion Regulation* (pp. 542-559). The Guilford Press.

Canu, W. H., & Carlson, C. L. (2007). Rejection sensitivity and social outcomes of young adult men with ADHD. *Journal of Attention Disorders, 10*(3), 261-275. doi:10.1177/1087054706288106

Clark, L. A., & Watson, D. (1991). Tripartite model of anxiety and depression: Psychometric evidence and taxonomic implications. *Journal of Abnormal Psychology, 100*(3), 316-336.

Coiro, M. J., Bettis, A. H., & Compas, B. E. (2017). College students coping with interpersonal stress: Examining a control-based model of coping. *Journal of American College Health, 65*(3), 177-186. doi:10.1080/07448481.2016.1266641

Combs, M. A., Canu, W. H., Fulks, J. J. B., & Nieman, D. C. (2014). Impact of sluggish

    cognitive tempo and attention-deficit/hyperactivity disorder symptoms on adults' quality

    of life. *Applied Research in Quality of Life, 9*, 981-995. doi:10.1007/s11482-013-9281-3

Compas, B. E., Connor, J. K., Osowiecki, D., & Welch, A. (1997). Effortful and involuntary

    responses to stress: Implications for coping with chronic stress. In B.H. Gottlieb (Ed.),

    Coping with chronic stress (pp. 105-130). New York: Plenum. doi:10.1007/978-1-4757-

    9862-3_4

Compas, B. E., Connor-Smith, J. K., Saltzman, H., Thomsen, A. H., Wadsworth, M. E. (2001).

    Coping with stress during childhood and adolescence: Problems, progress, and potential in

    theory and research. *Psychological Bulletin, 127*(1), 87-127. doi:10.1037//0033-

    2909.127.1.87

Compas, B. E., Jaser, S. S., Bettis, A. H., Watson, K. H., Gruhn, M. A., Dunbar, J. P.,

    …Thigpen, J. C. (2017). Coping, emotion regulation, and psychopathology in childhood

    and adolescence: A meta-analysis and narrative review. *Psychological Bulletin, 143*(9),

    939-991. doi:10.1037/bul0000110

Compas, B. E., Jaser, S. S., Dunn, M. J., & Rodriguez, E. M. (2012). Coping with chronis illness

    in childhood and adolescence. *Annual Review of Clinical Psychology, 8*, 455-480. doi:

    10.1146/annurev-clinpsy-032511-143108.

Connor-Smith, J. K., Compas, B. E., Wadsworth, M. E., Thomsen, A. H., & Saltzman, H.

    (2000). Responses to stress in adolescence: Measurement of coping and involuntary

    stress responses. *Journal of Consulting and Clinical Psychology, 68*(6), 976-992.

    doi:10.1037//0022-006X.68.6.976

del Mar Bernad, M., Servera, M., Becker, S. P., & Burns, G. L. (2016). Sluggish cognitive tempo and ADHD inattention as predictors of externalizing, internalizing, and impairment domains: A 2-year longitudinal study. *Journal of Abnormal Child Psychology, 44*(4), 771-785. doi:10.1007/s10802-015-0066-z

Dufton, L. M., Dunn, M. J., Slosky, L. S., & Compas, B. E. (2011). Self-reported and laboratory-based responses to stress in children with recurrent pain and anxiety. *Journal of Pediatric Psychology, 36*(1), 95-105. doi:10.1093/jpepsy/jsq070

Ferretti, N. M., King, S. L., Hilton, D. C., Rondon, A. T., & Jarrett, M. A. (2019). Social functioning in youth with attention-deficit/hyperactivity disorder and sluggish cognitive tempo. *The Yale Journal of Biology and Medicine*, *92*, 29-35.

Flannery, A. J., Becker, S. P., & Luebbe, A. M. (2016). Does emotion dysregulation mediate the association between sluggish cognitive tempo and college students' social impairment? *Journal of Attention Disorders, 20*(9), 802-812. doi:10.1177/1087054714527794

Flannery, A. J., Luebbe, A. M., & Becker, S. P. (2017). Sluggish cognitive tempo is associated with poorer study skills, more executive functioning deficits, and greater impairment in college students. *Journal of Clinical Psychology, 73*(9), 1091-1113. doi:10.1002/jclp.22406

Gross, J. J., & Muñoz, R. F. (1995). Emotion regulation and mental health. *Clinical psychology: Science and practice*, *2*(2), 151-164. doi:10.1111/j.1468-2850.1995.tb00036.x

Hocking, M. C., Barnes, M., Shaw, C., Lochman, J. E., Madan-Swain, A., & Saeed, S. (2010). Executive function and attention regulation as predictors of coping success in youth with functional abdominal pain. *Journal of Pediatric Psychology, 36*(1), 64-73. doi:10.1093/jpepsy/jsq056

Hunt, J. & Eisenberg, D. (2010). Mental health problems and help-seeking behavior among college students. *Journal of Adolescent Health, 46*(1), 3-10. doi:10/1016/j.jadohealth.2009.08.008

Jarrett, M. A., Rapport, H. F., Rondon, A. T., & Becker, S. P. (2017). ADHD dimensions and sluggish cognitive tempo symptoms in relation to self-report and laboratory measures of neuropsychological functioning in college students. *Journal of Attention Disorders, 21*(8), 678-683. doi:10.1177/1087054714560821

Kato, T. (2013). Assessing coping with interpersonal stress: Development and validation of the interpersonal stress coping scale in Japan. *International Perspectives in Psychology: Research, Practice, Consultation, 2*(2), 100-115. doi:10.1037/ipp0000002

Kirk, C. L. (2018). *Do symptoms of sluggish cognitive tempo independently predict social functioning or risky behavior in a college student sample?* (Doctoral dissertation). Retrieved from Auburn University Electronic Theses and Dissertations database.

Kofler, M. J., Irwin, L. N., Sarver, D. E., Fosco, W. D., Miller, C. E., Spiegel, J.A., & Becker, S. P. (2019). What cognitive processes are "sluggish" in sluggish cognitive tempo?. *Journal of consulting and clinical psychology, 87*(11), 1030-1042. doi:10.1037/ccp0000446

Leikauf, J. E. & Solanto, M. V. (2017). Sluggish cognitive tempo, internalizing symptoms, and executive function in adults with ADHD. *Journal of Attention Disorders, 21*(8), 701-711. doi:10.1177/1087054716682337.

Lovibond, S. H., & Lovibond, P. F. (1995). Manual for the Depression Anxiety Stress Scales (2nd ed.). Sydney, Australia: Psychology Foundation of Australia.

Maedgen, J. W., & Carlson, C. L. (2000). Social functioning and emotional regulation in the Attention Deficit Hyperactivity Disorder subtypes. *Journal of Clinical Psychology, 29*(1), 30-42. doi:10.1207/S15374424jccp2901_4

McBurnett, K., Villados, M., Burns, G. L., Hinshaw, S. P., Beaulieu, A., & Pfiffner, L. J. (2014). Structure and validity of sluggish cognitive tempo using an expanded item pool in children with attention-deficit/hyperactivity disorder. *Journal of Abnormal Child Psychology, 42*, 37-48. doi:10.1007/s10802-013-9801-5

McLaughlin, K. A., & Nolen-Hoeksema, S. (2011). Rumination as a transdiagnostic factor in depression and anxiety. *Behaviour research and therapy, 49*(3), 186-193. doi:10.1016/j.brat.2010.12.006

Meade, A. W. & Craig, B. (2012). Identifying careless responses in survey data. *Psychological Method, 17*(3), 437-455. doi:10.1037/a0028085

Mikami, A. Y., Huang-Pollock, C. L., Pfiffner, L. J., McBurnett, K., & Hangai, D. (2007). Social skills differences among attention-deficit/hyperactivity disorder types in a chat room assessment task. *Journal of Abnormal Child Psychology, 35*(4), 509-521. doi:10.1007/s10802-007-9108-5.

O'Rourke, S. R., Bray, A. C., & Anastopoulos, A. D., (2017). Anxiety symptoms and disorders in college students with ADHD. *Journal of Attention Disorders,* doi:10.1177/1087054716685837

Peng, C. Y. J., Harwell, M., Liou, S. M., & Ehman, L. H. (2006). Advances in missing data methods and implications for educational research. In S. S. Sawilowsky (ed.) *Real data analysis* (pp. 31-78). Charlotte, North Carolina: Information Age Publishing.

Penny, A. M., Waschbusch, D. A., Klein, R. M., Corkum, P., & Eskes, G. (2009). Developing a measure of sluggish cognitive tempo for children: Content validity, factor structure, and reliability. *Psychological Assessment, 21,* 380-389. doi:10.1037/a0016600

Raviv, T., & Wadsworth, M. E. (2010). The efficacy of a pilot prevention program for children and caregivers coping with economic strain. *Cognitive Therapy and Research*, *34*(3), 216-228. doi:10.1007/s10608-009-9265-7

Schatz, D. B., & Rostain, A. L. (2006). ADHD with comorbid anxiety: A review of the current literature. *Journal of Attention Disorders, 10*(2), 141-149. doi:10.1177/1087054706286698

Shaw-Zirt, B., Popali-Lehane, L., Chapin, W., & Bergman, A. (2005). Adjustment, social skills, and self-esteem in college students with symptoms of ADHD. *Journal of Attention Disorders, 8*(3), 109-120. doi:10.1177/1087054705277775

Sinclair, S. J., Siefert, C. J., Slavin-Mulford, J. M., Stein, M. B., Renna, M., & Blais, M. A. (2012). Psychometric evaluation and normative data for the depression, anxiety, and stress scales-21 (DASS-21) in a nonclinical sample of US adults. *Evaluation & the Health Professions*, *35*(3), 259-279. doi:10.1177/0163278711424282

Skinner, E. A., Edge, K., Altman, J., & Sherwood, H. (2003). Searching for the structure of coping: A review and critique of category systems for classifying ways of coping. *Psychological Bulletin, 129*, 216-269. doi:10.1037/0033-2909.129.2.216

Wadsworth, M. E., & Berger, L. E. (2006). Adolescents coping with poverty-related family stress: Prospective predictors of coping and psychological symptoms. *Journal or Youth and Adolescence, 35*(1), 54-67. doi:10.1007/s10964-005-9022-5

Willcutt, E. G., Chhabildas, N., Kinnear, M., DeFries, J. C., Olson, R. K., Leopold, D. R., …Pennington, B. F. (2014). The internal and external validity of sluggish cognitive tempo and its relation with DSM-IV ADHD. *Journal of Abnormal Child Psychology, 42*(1), 21-35. doi:10.1007/s10802-013-9800-6

Wood, W. L. M., Lewandowski, L. J., Lovett, B. J., & Antshel, K. M. (2017). Executive

    dysfunction and functional impairment associated with sluggish cognitive tempo in

    emerging adulthood. *Journal of Attention Disorders, 21*, 691-700.

    doi:10.1177/1087054714560822

Yao, S., Xiao, J., Zhu, X., Zhang, C., Auerbach, R. P., Mcwhinnie, C. M., … Wang, C. (2010).

    Coping and involuntary responses to stress in Chinese university students: Psychometric

    properties of the Responses to Stress Questionnaire. *Journal of Personality Assessment*,

    92(4), 356-361. doi:10.1080/00223891.2010.482015

Appendix

Table 1

Sample Demographics

Age	Percent	Frequency
18	17	70
19	37.6	155
20	17.5	72
21	19.4	80
22	7.0	29
23	1.5	6

Sex		
Male	20.1	83
Female	79.6	328

College Level		
Freshman	43.0	177
Sophomore	24.0	99
Junior	16.5	68
Senior	16.3	67
Other	.2	1

Greek Life		
Yes	48.8	201
No	51.2	211

Race		
White	89.1	367
Non-White	10.7	44

Ethnicity		
Hispanic/Latino	3.9	16
Not Hispanic/Latino	96.1	396

Religion		
Christian	85.9	354
Buddhist	.2	1
Jewish	.2	1
Muslim	.2	1
Unaffiliated	6.3	26
Spiritual, but not religious	4.1	17
Prefer not to say	1.7	7

Length of enrollment		
6 months to 1 year	47.6	196
1 to 2 years	21.4	88

2 to 3 years	14.6	60
3 to 4 years	15.5	64
4+ years	1	4

Previous residency

Alabama	61.7	254
Other U.S. state	38.1	157
International	.2	1

Living situation

On campus	38.3	158
Off campus	61.7	254
Live alone	9	37
Live with roommate(s)	85.7	353
Live with significant other	1.9	8
Live with family	3.4	14

Relationship status

Single	75	309
Married	.7	3
In a relationship	24.3	100

Table 2

Descriptive Statistics and Bivariate Correlations for Study Variables

	Mean	SD	Range	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Age	19.66	1.25	18-23	-												
2. Race	--	--	--	.07	-											
3. Sex	--	--	--	-.08	-.05	-										
4. ADHD1	16.07	4.60	9-36	-.01	.04	.01	-									
5. ADHD2	16.09	4.21	9-35	-.11*	.07	.09	.46**	-								
6. INT	14.11	5.94	9-36	-.02	.03	.05	.51**	.32**	-							
7. SCT	22.40	5.93	10-39	-.08	.06	.11*	.71**	.53**	.52**	-						
8. STRESS	24.52	6.73	15-49	-.11*	-.10*	.09	.37**	.39**	.50**	.41**	-					
9. PCC	.20	.04	.11-.30	.14**	-.10*	.01	-.40**	-.29**	-.44**	-.42**	-.33**	-				
10. SCC	.23	.05	.10-.35	.04	.03	-.23**	-.33**	-.26**	-.57**	-.38**	-.44**	.39**	-			
11. DC	.16	.02	.09-.24	-.04	.12*	.06	.15**	.05	.19**	.16**	.16**	-.53**	-.27**	-		
12. IE	.26	.04	.15-.38	-.07	-.06	.19**	.34**	.30**	.52**	.38**	.46**	-.49**	-.84**	.02	-	
13. ID	.16	.03	.09-.25	-.10*	.08	.00	.41**	.28**	.51**	.43**	.29**	-.73**	-.58**	.28**	.42**	-

Note. For Race, 1 = White, 2 = Non-White; For Sex 1 = Male, 2 = Female; ADHD1 = Attention Deficit/Hyperactivity Disorder – Inattentive; ADHD2 = Attention Deficit/Hyperactivity Disorder – Hyperactive-Impulsive; INT = Internalizing symptoms; SCT = Sluggish Cognitive Tempo; STRESS = Total Perceived Stress; PCC = Ratio Primary Control Coping; SCC = Ratio Secondary Control Coping; DC = Ratio Disengagement Coping; IE = Ratio Involuntary Engagement; ID = Ratio Involuntary Disengagement. * $p < .05$, ** $p < .01$, *** $p < .001$.

Table 3

Hierarchical Regression Analyses Predicting Perceived Stress

	Step 1				Step 2				Step 3				Step 4			
	$F(1, 410) = 4.91*$ $R^2 = .01, \Delta R^2 = .01*$				$F(3, 408) = 34.86***$ $R^2 = .20, \Delta R^2 = .19***$				$F(4, 407) = 47.98***$ $R^2 = .32, \Delta R^2 = .12***$				$F(5, 406) = 38.89***$ $R^2 = .32, \Delta R^2 = .00$			
	B	SE	β	*t*	*B*	SE	β	*t*	*B*	SE	β	*t*	*B*	SE	β	*t*
Age	-.59	.27	-.11	-2.22*	-.42	.24	-.08	-1.72	-.41	.22	-.08	-1.82	-.38	.22	-.07	-1.72
ADHD1					.35	.07	.24	4.75***	.08	.08	.06	1.07	.01	.09	.01	.16
ADHD2					.44	.08	.28	5.49***	.38	.08	.23	5.01***	.34	.08	.21	4.37***
INT									.45	.05	.40	8.35***	.43	.06	.38	7.77***
SCT													.10	.07	.09	1.43

Note. ADHD1 = Attention Deficit/Hyperactivity Disorder – Inattentive; ADHD2 = Attention Deficit/Hyperactivity Disorder – Hyperactive-Impulsive; INT = Internalizing symptoms; SCT = Sluggish Cognitive Tempo; * $p < .05$, ** $p < .01$, *** $p < .001$.

Table 4

Hierarchical Regression Analyses Predicting Primary Control Coping

	Step 1				Step 2				Step 3				Step 4			
	$F(2, 408) = 6.45^{**}$				$F(4, 406) = 25.51^{***}$				$F(5, 405) = 29.26^{***}$				$F(6, 404) = 25.41^{***}$			
	$R^2 = .03, \Delta R^2 = .03^{**}$				$R^2 = .20, \Delta R^2 = .17^{***}$				$R^2 = .27, \Delta R^2 = .07^{***}$				$R^2 = .27, \Delta R^2 = .01^{*}$			
	B	SE	β	*t*	*B*	SE	β	*t*	*B*	SE	β	*t*	*B*	SE	β	*t*
Age	.00	.00	.15	2.97**	.00	.00	.13	2.87**	.00	.00	.13	2.93**	.00	.00	.12	2.79**
Race	-.01	.01	-.11	-2.22*	-.01	.01	-.10	-2.27*	-.01	.01	-.08	-1.93	-.01	.01	-.08	-1.90
ADHD1					-.00	.00	-.34	-6.76***	-.00	.00	-.21	-3.86***	-.00	.00	-.13	-2.14*
ADHD2					-.00	.00	-.12	-2.45*	-.00	.00	-.09	-1.85	-.00	.00	-.06	-1.13
INT									-.00	.00	-.30	-5.97***	-.00	.00	-.27	-5.29***
SCT													-.00	.00	-.14	-2.19*

Note. For Race, 1 = White, 2 = Non-White; ADHD1 = Attention Deficit/Hyperactivity Disorder – Inattentive; ADHD2 = Attention Deficit/Hyperactivity Disorder – Hyperactive-Impulsive; INT = Internalizing symptoms; SCT = Sluggish Cognitive Tempo; * $p < .05$, ** $p < .01$, *** $p < .001$.

Table 5

Hierarchical Regression Analyses Predicting Secondary Control Coping

	Step 1				Step 2				Step 3				Step 4			
	$F(1, 409) = 21.99***$ $R^2 = .05, \Delta R^2 = .05***$				$F(3, 407) = 27.37***$ $R^2 = .17, \Delta R^2 = .12***$				$F(4, 406) = 58.34***$ $R^2 = .37, \Delta R^2 = .20***$				$F(5, 405) = 47.20***$ $R^2 = .37, \Delta R^2 = .00$			
	B	SE	β	*t*	*B*	SE	β	*t*	*B*	SE	β	*t*	*B*	SE	β	*t*
Sex	-.03	.01	-.23	-4.69***	-.02	.01	-.21	-4.67***	-.02	.01	-.20	-4.96***	-.02	.01	-.19	-4.77***
ADHD1					-.00	.00	-.28	-5.46***	.00	.00	-.04	-.82	.00	.00	.00	.06
ADHD2					-.00	.00	-.11	-2.10*	-.00	.00	-.06	-1.22	.00	.00	-.04	-.74
INT									-.00	.00	-.52	-11.23***	-.00	.00	-.50	-10.57***
SCT													-.00	.00	-.09	-1.43

Note. For Sex, 1 = Male, 2 = Female; ADHD1 = Attention Deficit/Hyperactivity Disorder – Inattentive; ADHD2 = Attention Deficit/Hyperactivity Disorder – Hyperactive-Impulsive; INT = Internalizing symptoms; SCT = Sluggish Cognitive Tempo; * $p < .05$, ** $p < .01$, *** $p < .001$.

Table 6

Hierarchical Regression Analyses Predicting Disengagement Coping

	Step 1				Step 2				Step 3				Step 4			
	$F(1, 409) = 6.38^*$ $R^2 = .02, \Delta R^2 = .02^*$				$F(2, 408) = 7.75^{***}$ $R^2 = .04, \Delta R^2 = .02^{**}$				$F(3, 407) = 7.33^{***}$ $R^2 = .05, \Delta R^2 = .02^*$				$F(4, 406) = 5.70^{***}$ $R^2 = .05, \Delta R^2 = .00$			
	B	SE	β	*t*	*B*	SE	β	*t*	*B*	SE	β	*t*	*B*	SE	β	*t*
Race	.01	.00	.12	2.53*	.01	.00	.12	2.42*	.01	.00	.11	2.28*	.01	.00	.11	2.30*
ADHD1					.00	.00	.15	3.00**	.00	.00	.08	1.34	.00	.00	.04	.52
INT									.00	.00	.14	2.51*	.00	.00	.13	2.18*
SCT													.00	.00	.06	.91

Note. For Race, 1 = White, 2 = Non-White; ADHD1 = Attention Deficit/Hyperactivity Disorder – Inattentive; INT = Internalizing symptoms; SCT = Sluggish Cognitive Tempo; * $p < .05$, ** $p < .01$, *** $p < .001$.

Table 7

Hierarchical Regression Analyses Predicting Involuntary Engagement

	Step 1				Step 2				Step 3				Step 4			
	$F(1, 409) = 15.85$*** $R^2 = .04$, $\Delta R^2 = .04$***				$F(3, 407) = 27.64$*** $R^2 = .17$, $\Delta R^2 = .13$***				$F(4, 406) = 48.18$*** $R^2 = .32$, $\Delta R^2 = .15$***				$F(5, 405) = 38.95$*** $R^2 = .33$, $\Delta R^2 = .00$			
	B	SE	β	*t*	*B*	SE	β	*t*	*B*	SE	β	*t*	*B*	SE	β	*t*
Sex	.02	.01	.19	3.98***	.02	.01	.16	3.92***	.02	.01	.16	3.92***	.02	.01	.16	3.76***
ADHD1					.00	.00	.25	4.99***	.00	.00	.05	.88	.00	.00	.00	.05
ADHD2					.00	.00	.17	3.27**	.00	.00	.12	2.60*	.00	.00	.10	2.09*
INT									.00	.00	.47	9.56***	.00	.00	.44	8.98***
SCT													.00	.00	.08	1.31

Note. For Sex, 1 = Male, 2 = Female; ADHD1 = Attention Deficit/Hyperactivity Disorder – Inattentive; ADHD2 = Attention Deficit/Hyperactivity Disorder – Hyperactive-Impulsive; INT = Internalizing symptoms; SCT = Sluggish Cognitive Tempo; * $p < .05$, ** $p < .01$, *** $p < .001$.

Table 8
Hierarchical Regression Analyses Predicting Involuntary Disengagement

	Step 1				Step 2				Step 3				Step 4			
	$F(1, 410) = 4.35^*$ $R^2 = .01, \Delta R^2 = .01^*$				$F(3, 408) = 31.57^{***}$ $R^2 = .19, \Delta R^2 = .18^{***}$				$F(4, 407) = 44.98^{***}$ $R^2 = .31, \Delta R^2 = .12^{***}$				$F(5, 406) = 37.35^{***}$ $R^2 = .32, \Delta R^2 = .01^*$			
	B	SE	β	*t*	*B*	SE	β	*t*	*B*	SE	β	*t*	*B*	SE	β	*t*
Age	-.00	.00	-.10	-2.08*	-.00	.00	-.09	-1.97	-.00	.00	-.09	-2.09*	-.00	.00	-.08	-1.94
ADHD1					.00	.00	.37	7.26***	.00	.00	.18	3.52***	.00	.00	.11	1.83
ADHD2					.00	.00	.10	1.98*	.00	.00	.06	1.25	.00	.00	.03	.53
INT									.00	.00	.40	8.33***	.00	.00	.37	7.58***
SCT													.00	.00	.14	2.24*

Note. ADHD1 = Attention Deficit/Hyperactivity Disorder – Inattentive; ADHD2 = Attention Deficit/Hyperactivity Disorder – Hyperactive-Impulsive; INT = Internalizing symptoms; SCT = Sluggish Cognitive Tempo; * $p < .05$, ** $p < .01$, *** $p < .001$.