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DISSERTATION

COPING STRATEGIES AND ACADEMIC SUCCESS AMONG COLLEGE STUDENTS DIAGNOSED WITH ATTENTION DEFICIT HYPERACTIVITY DISORDER

Submitted by

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Department of Psychology

In partial fulfillment of the requirements

for the degree of Doctor of Philosophy

Colorado State University

Fort Collins, Colorado

Summer 1999

COLORADO STATE UNIVERSITY

June 17, 1999

WE HEREBY RECOMMEND THAT THE DISSERTATION PREPARED UNDER OUR SUPERVISION BY PATRICK MICHAEL TURNOCK ENTITLED: "COPING STRATEGIES AND ACADEMIC SUCCESS AMONG COLLEGE STUDENTS DIAGNOSED WITH ATTENTION DEFICIT HYPERACTIVITY DISORDER" BE ACCEPTED AS FULFILLING, IN PART, REQUIREMENTS FOR THE DEGREE OF DOCTOR OF PHILOSOPHY.

Committee on Graduate Work

Advisor

Department Head

ABSTRACT

COPING STRATEGIES AND ACADEMIC SUCCESS AMONG
COLLEGE STUDENTS DIAGNOSED WITH
ATTENTION DEFICIT HYPERACTIVITY DISORDER

The relationship between coping resources and academic success in college among 41 students with Attention Deficit Hyperactivity Disorder (ADHD) was investigated. Participants completed the Coping Resources for Stress scale and gave investigators access to their academic records. Intelligence was assessed with the Wonderlic Personnel Test so that intellectual capability could be statistically controlled. Results indicated that, contrary to expectation, students with lower grade point averages reported more coping resources than did students with better grades. Potential explanations for these paradoxical findings and directions for future research are discussed.

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Introduction

Attention deficit hyperactivity disorder (ADHD) is a chronic disorder affecting approximately 3-6% of elementary school-aged children (Barkley, 1990; Weiss & Hechtman, 1993). It was once widely believed among clinicians familiar with the disorder that ADHD was common only in childhood, with the symptoms gradually disappearing through adolescence. While the prevalence of ADHD symptoms does, in fact, decline with age among clinically-referred samples (Barkley, 1990; Biederman, et al., 1996; Cantwell, 1996; Hill and Schoener, 1996; Klein & Mannuzza, 1991), numerous longitudinal studies carried out over the last 18 years indicate a continuance of the disorder beyond childhood for a significant proportion of those affected (Barkley, 1990; Barkley, Fischer, Edelbrock & Smallish, 1991; Biederman, 1991; Cadoret & Stewart, 1991; Denckla, 1991; Garfinkel & Amrami, 1992; Murphy, 1995a; Weiss & Hechtman, 1993). In fact, 30 to 80% of ADHD children still meet the full diagnostic criteria for the disorder in adolescence (Biederman, 1991; Klein & Mannuzza, 1991). Additionally, one well-controlled study found that 66% of ADHD children still had at least one disabling ADHD symptom as adults (Weiss & Hechtman, 1993). Recent studies among university undergraduates provide additional evidence of continuing ADHD symptoms beyond childhood (Ramirez, et al., 1997; Turnock, Rosen, & Kaminski, 1998; Weyandt, Linterman, & Rice, 1995).

Significant problems in academic and social functioning have received considerable attention among researchers studying ADHD children, but until recently,

have been largely overlooked among older individuals with ADHD (Weiss & Hechtman, 1993). It stands to reason that as ADHD people age, new challenges will continue to present special problems for them. One situation in which lingering symptoms of ADHD may pose particular difficulty is the university setting. The scant empirical literature examining ADHD college students suggests that they have more academic trouble than their non-ADHD peers (Turnock, et al., 1998), yet some ADHD students nonetheless do appear to succeed (Quinn, 1993; Nadeau, 1994). This study attempts to identify factors related to academic success among college students with ADHD.

Characteristics of ADHD

The Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV; American Psychiatric Association [APA], 1994), the most widely accepted psychiatric manual in use in the United States, describes criteria for the diagnosis of ADHD. Currently, diagnosis of the disorder requires the onset of symptoms before age seven and the presence of impairment in more than one setting. Although diagnostic criteria for ADHD is based exclusively on data drawn from children and adolescents (APA, 1994; Lahey, et al., 1994), symptoms of adult ADHD are believed to represent each of the three major symptom categories observed in children: inattention, impulsivity, and hyperactivity (Barkley, 1990; Biederman, 1996; Murphy, 1995b; Weiss & Hechtman, 1993).

The inattention which is characteristic of the disorder is evident in the difficulty that individuals with ADHD tend to have in completing tasks—especially those that are uninteresting, repetitive, or that require sustained mental effort (Barkley, 1990; Goldstein, 1997). Additionally, these individuals usually experience trouble organizing and

completing work correctly, when they complete it at all (Goldstein, 1997; Silver, 1992). Moreover, school work is often messy, and done in a careless manner (APA, 1994). According to the DSM-IV, the ADHD child often gives the impression (not incorrectly) that he or she is not listening or has not heard what has been said. Being easily distracted, tending to lose or misplace things, and being frequently forgetful or absentminded are additional aspects of the inattention characteristic of those with ADHD (Barkley, 1988; Hallowell & Ratey, 1992).

Impulsivity, a second major diagnostic cornerstone of ADHD, can be seen in the individual who speaks out of turn, interrupting others' conversations or otherwise speaking at inappropriate times (Barkley, 1990; Silver, 1992). Those with ADHD may engage in dangerous acts -- not necessarily with dangerous intent -- but because of lack of forethought (Weiss & Hechtman, 1993). A child may, for example, dash out into the street to retrieve a ball without looking for oncoming traffic—or an adult may race around a slower vehicle at the first opportunity--not taking into consideration the blind curve just ahead. Feelings of impatience, an explosive temper, affective lability, and an intolerance for stress are additional manifestations of impulsivity in some patients with ADHD (APA, 1994; Barkley, 1988; Ramirez, et al., 1997; Wender, 1981).

The third primary component of ADHD, hyperactivity, is believed by many clinicians to manifest most blatantly during childhood and to fade considerably during adolescence and adulthood (APA, 1994; Goldstein, 1997; Hallowell & Ratey, 1994). Behaviors among hyperactive children are likely to include excessive squirming, running, playing with objects, and difficulty remaining quiet or seated (APA, 1994; Barkley, 1990; Weiss & Hechtman, 1993). Barkley (1988) describes hyperactive children as constantly

in motion, "as if driven by a motor." They may seem to be in nonstop motion from the moment they awaken until they go to sleep. Among adults, whose overt hyperactivity is likely to have mellowed over time, fidgeting and feelings of restlessness are still common (APA, 1994).

Childhood Outcomes

Disturbances in multiple facets of the lives of children with ADHD often lead to significant emotional problems. Children exhibiting ADHD tend to have particular difficulty at school, where organization, attention, and orderly behavior are expected and necessary. Lowered self-esteem and poor self-concept may be the result of below average performance in school despite adequate cognitive ability (Barkley, 1988; Kaplan & Shachter, 1991; Murphy, 1995b; Silver, 1992). Problems related to ADHD are not limited to the classroom, however, and consequences of the disorder usually apply to peer relationships and home life as well (Mannuzza, et al., 1991; Silver, 1992). Poor peer relationships and tense home situations, where the ADHD child seems always to be getting in trouble, may also have serious negative effects on the child's self-esteem and self-concept (Faigel, 1995; Murphy, 1995b; Silver, 1992). Additionally, ADHD often goes undiagnosed or is not diagnosed until well after the onset of negative patterns of relating to significant adults and peers (Kaplan & Shachter, 1991; Ratey, Greenberg, Bemporad & Lindem, 1992; Richard, 1995). Lacking a diagnosis, it stands to reason that the ADHD child's misbehavior may be more readily attributed to carelessness, thoughtlessness or willfulness rather than being seen as symptomatic of a disorder over which the child has little control.

Adult Outcomes

Problems associated with ADHD for children also appear to impair academic, social and emotional adjustment in adults (Barkley, Murphy, & Kwasnik, 1996; Biederman, et al., 1993; Denckla, 1993; Fischer, Barkley, Fletcher & Smallish, 1993; Klein & Mannuzza, 1991; Litfin, 1996; Turnock, et al., 1998). The academic environment, as with children, is considered especially difficult for older students with ADHD. Throughout their schooling, and independent of differences in IQ, ADHD individuals tend to have more academic problems. These include lower grades, more failed or repeated grades, and fewer years of education completed (Biederman, et al., 1994; Hechtman, Weiss & Perlman, 1984; Hechtman, 1991; Lambert, 1988; Mannuzza et al., 1991; Mannuzza, et al., 1997; Slomkowski, Klein & Mannuzza, 1995; Wilson and Marcotte, 1996). In fact, Mannuzza and colleagues (1993) found that approximately 25% of ADHD participants (vs. 2% of controls) never completed high school (Mannuzza, Klein, Bessler, Malloy, & LaPadula, 1993). Similarly, Turnock and colleages (1998) found a significantly higher drop-out rate among undergraduate university students with symptoms of ADHD in comparison with their non-symptomatic counterparts. Many adults with ADHD report a sense of not being able to perform to the level of their abilities and a feeling of lack of control over their lives (Hallowell & Ratey, 1994; Heiligenstein & Keeling, 1995; Murphy, 1995b; Ratey et al., 1992). One result of all of these problems may be lower self-esteem, which several studies have linked to ADHD among adolescents and adults (Dooling-Litfin & Rosen, 1997; Hechtman, 1991; Murphy, 1995a; Slomkowski, Klein, & Mannuzza, 1995). Additionally, self-perceptions of failure—like those accompanying school failure and poor job appraisal—have been

linked to greater levels of depression and emotional stress (Sacco & Beck, 1995). Moreover, it has now been well-established that high levels of stress are associated with reduced levels of performance (Holroyd & Lazarus, 1982; Mandler, 1982). A self-perpetuating cycle of stress, failure, and increased stress can therefore readily be envisioned for those with this disorder.

If, as some researchers and clinicians suggest, people with ADHD deal with stress less well (Blum, Cull, Braverman, & Cumings, 1996; Weiss, 1991; Wender, Reimherr, & Wood, 1981) or, put another way, if lower levels of stress overwhelm those with ADHD, then it would follow that given some level of stress at which normal people could still function appropriately (e.g., the college academic environment), those with ADHD would be more likely to find themselves operating with a coping resource deficiency. Unable to keep up with the demands of the environment, adequate functioning would then break down. In such a resource-demanding environment, we might expect to see ADHD college students emerge who had found some way to either conserve their resources or who had found additional resources upon which to draw.

Indirect support for this hypothesis is found among ADHD adults who have achieved successful outcomes. In fact, a significant minority of ADHD adults attain normal or better levels of achievement in social, occupational and academic settings. For instance, while ADHD individuals have more frequent job changes and attain lower occupational rankings, the *rate* of employment for ADHD and normal participants is the same (Denckla, 1991; Mannuzza et al., 1993; Mannuzza, Klein, Bessler, Malloy & Hynes, 1997). Furthermore, a subset of adults with ADHD manage to achieve exceptional success, including professional athletes and corporate executives (Hallowell

& Ratey, 1994; Hechtman, 1991; Murphy, 1995a). Clearly, there must be some factor or factors that significantly contribute to the wide range of outcomes. Moreover, if behavioral factors affecting the course and prognosis for adjustment could be isolated, the possibility exists of teaching compensatory behavioral strategies or abilities to poorly-performing ADHD individuals to improve their adjustment.

Coping in ADHD College Students

While adults with symptoms of ADHD struggle, by definition, across a variety of settings (APA, 1994), Mannuzza and colleagues (1991) have noted that the nature of ADHD symptoms makes the school environment particularly aversive to those with this disorder. Consistent with this observation, Weiss, Hechtman, Milroy and Perlman (1985) found, in their 15-year followup study of ADHD children, that fewer than five percent of the adults with ADHD had completed college, while more than 40 percent of their normal peer group had. Other studies indicate significant impairments in emotional and psychosocial functioning among ADHD students in college (Litfin, 1996; Ramirez, et al., 1997; Slomkowski, et al., 1995). While very little is presently known about the prevalence or effect of ADHD in the university setting, clinicians suggest a positive educational outcome for some ADHD college students (Hallowell & Ratey, 1994; Nadeau, 1994; Quinn, 1993). For example, in separate longitudinal studies of ADHD probands, Mannuzza and colleagues (1993; 1997) found that 12% and 15% of their ADHD samples, respectively, had completed a bachelor's degree. Additionally, while Hill and Schoener (1996) have projected a 0.8% prevalence of ADHD among college-age adults based on mathematical extrapolation from existing studies, other recent evidence suggests a considerably higher prevalence of ADHD among this population (Ramirez, et

al., 1997; Turnock, et al., 1998; Weyandt, Linterman & Rice, 1995). Some investigators have hypothesized that a subset of ADHD students cope with their symptoms and so achieve a measure of academic success (Faigel, 1995; Hallowell & Ratey, 1994; Heiligenstein and Keeling, 1995; Kaplan and Schachter, 1991; Nadeau, 1994; Quinn, 1993). While the use of symptom-specific coping strategies among ADHD students has not received empirical support (Turnock, et al., 1998), it may be that successful ADHD students employ, instead, a number of coping resources which enable them to endure stresses which overwhelm less-resilient individuals (Wheaton, 1983). If true, this raises the possibility that ADHD students struggling academically can employ methods of coping with stress, thereby freeing cognitive resources and enhancing focus on academic work (Mandler, 1982).

The current study proposes to examine this hypothesis empirically. The research hypothesis predicts that adult college students with ADHD who demonstrate academic success will tend to have more coping resources which enable them to function effectively amid the stresses of college life.

Chapter II

Method

Participants

Participants were forty-one undergraduate male and female college students at a small, liberal arts college in the Eastern United States. Students were recruited through the Office of Disabled Student Services, and by way of fliers, bulletins and class announcements. In order to be selected to participate, students were to have been previously diagnosed as having ADHD by a qualified professional (i.e., psychologist, psychiatrist, pediatrician, etc.). The diagnosis of ADHD was subsequently re-confirmed by clinical interview and symptom checklists before each research participant was finally admitted into the study. Participation was on a voluntary basis, and a 2-hour seminar titled, "ADHD in college students" was made available to interested students, regardless of whether they ultimately chose to participate in the study.

The ages of research participants ranged from 18 to 28 years, with both a mean and a median age of 21 (SD = 2.4 years). The average age of research participants at the time of their initial diagnosis was 13.1 years (SD = 6.3 years). Ninety-five percent (N = 39) of the participants identified themselves as Caucasian, while five percent (N = 2) identified themselves as Black. Eighteen (43%) of the participants were female; twenty-three (57%) were male. Seventeen of the 41 research participants (41.5%) reported that they were currently taking medication specifically for attention deficit hyperactivity disorder. Twenty-four participants (58.5%) indicated that they were not taking medication for their ADHD.

Measures

Demographic Information

Demographic information was gathered using the Demographic Information Form that has been used in a previous study (Turnock, et al., 1998) (see Appendix A). Information collected included gender, age, date of birth, year in school, ethnicity, parents' level of education and occupations, annual family income and high school GPA. Questions also addressed past professional diagnosis of ADHD and whether medication was currently being prescribed for ADHD.

Diagnostic Assessment

Only students who had been professionally diagnosed as having ADHD were recruited for participation in this study. Where possible, documentation was provided by the university Office of Disabled Student Services or from school and medical records provided by the student. In all cases, participants completed symptom checklists for current and retrospective child ADHD symptoms. Information regarding the number and severity of current symptoms was collected using the Adult Behavior Rating Scale-Self Report of Current Behavior (ABRS-IV-Self) (see Appendix B). In addition to confirming diagnosis, this measure allowed us to statistically control for the expected effect of symptom severity on GPA. This instrument is a symptom check-list based on DSM-IV ADHD criteria, and for which norms are now available (DuPaul, Anastopoulos, Power, Reid, Ikeda, & McGoey, 1996). Participants were asked to describe their behavior over the past 6 months based on 26 symptoms ranging from 0 (Never or Rarely) to 3 (Very Often). To confirm childhood symptoms of ADHD, participants were asked to retrospectively endorse items using the Adult Behavior Rating Scale-Report of Childhood

Behavior (ABRS-IV-Child) (see Appendix C). Although many of the leading researchers in the field of ADHD have recently made strong calls for the liberalization of the DSM-IV age-of-onset criteria (Applegate, Lahey, Hart, Biederman, Hynd, et. al, 1997; Barkley & Biederman, 1997), childhood onset remains a valid diagnostic indicator and is, therefore, important to determine.

In order to screen out research participants with significant comorbid disorders, the Symptom Checklist (SCL-90-R) (Derogatis, 1994) was employed (See Appendix D). The SCL-90-R is a 90-item paper-and-pencil measure of psychological symptoms. The subject responds to "how much discomfort that problem has caused you" on a Likert scale ranging from 0 to 4 for each item, where 0 indicates "Not at all" and 4 indicates "Extremely." Items load onto 9 clinical subscales: Somatization, Obsessive-Compulsive, Interpersonal Sensitivity, Depression, Anxiety, Hostility, Phobic Anxiety, Paranoid Ideation, and Psychoticism. In addition, the following three general scores are obtained: 1) the "Global Sensitibity Index" (GSI) is a measure of the average rating given to all items; 2) the "Positive Symptom Total" (PST) is a count of the number of items (out of 90) which were rated anything other than "Not at all"; 3) the "Positive Symptom Distress Index" (PSDI) is the average rating given to all positively endorsed symptoms. High levels of internal consistency and test-retest reliability have been reported (Derogatis, 1994). Internal consistency reliabilities of the subscales range from .77 to .90. Test-retest reliability coefficients are similarly high, ranging from .78 to .90 at a 1-week followup. In general, the SCL-90 has been found to be a reliable self-report measure of psychopathology (Derogatis, 1994).

Academic Success

Academic success was determined based on each participant's cumulative grade point average (GPA). This measure was intended to provide a broad measure of academic success across a range of courses. In order to avoid complete reliance on self-reported data, student grades were accessed through the university's Department of Admissions and Records. Students were divided into "High Success" and "Low Success" groups based on their GPA falling above or below the median GPA (2.67) for the sample.

Coping

Coping resources are defined as factors which are present and available before stressors occur, and which can be drawn upon to lessen the costs of dealing with them (Wheaton, 1983). The Coping Resources Inventory for Stress (CRIS; Matheny, Curlette, Aycock, Pugh & Taylor, 1987) is an instrument designed to measure those dimensions (see Appendix E). According to the authors, while other stress coping instruments tend to assess coping responses (reactions to stressful events and situations), the CRIS is unique in that it measures coping resources available to the individual before the onset of stress (Matheny, Aycock, Curlette & Junker, 1993).

The CRIS is composed of 280 true-false items intended to measure a "comprehensive array of perceived coping resources" (p. 816). In addition to an overall measure of coping effectiveness, the CRIS has 3 composite scales and 12 primary scales. The composite scales are Cognitive Restructuring, Functional Beliefs, and Social Ease. Descriptions of these scales as well as the 10 primary scales used in the present study are presented in Table 1. Scores for each scale have a possible range from zero to 100, with higher numbers indicating larger perceived coping resources.

The current version of the CRIS has been normed on a representative sample (by race, gender, age & income) of 1,200 participants in the United States. Internal consistency reliabilities of the subscales range from .84 to .97 (Mdn = .88). Test-retest reliability coefficients are similarly high, ranging from .76 to .95 (Mdn = .87) at a 4-week followup. Subscale intercorrelations have been found to range from low to moderate (.05 to .62, M = .35, Mdn = .33) (Curlette, Aycock, Matheny, Pugh & Taylor, 1990). This indicates that the underlying constructs being measured by each subscale are unique. Additionally, more than fifty studies support the consistently high validity of the CRIS across sample populations and subscale constructs (Mattheny, et al., 1993).

Table 1.

CRIS Scales

Scale:	Domain Measured:
Composite Scales (3):	
Cognitive Restructuring (CR)[a]	The ability to change one's thinking in the interest of reducing stress
Functional Beliefs (FB)[a]	Beliefs that are helpful in preventing stressful situations and in lowering stressful arousal
Social Ease (SE)[a]	The degree of comfort one experiences in the presence of others
Primary Scales (10):	
Self-Disclosure (SD)	The tendency to disclose freely one's feelings, faults, troubles, thoughts and opinions
Self-Directedness (SDI)	The degree to which persons respect their own judgment for decision-making and, therefore, demonstrate assertiveness in interpersonal relationships
Confidence (CN)	The ability to cope successfully, that is, to gain mastery over one's environment and to control one's emotions in the interest of reaching personal goals
Tension Control (TC)	One's ability to lower arousal through relaxation procedures and thought control
Acceptance (AC)	The degree to which persons accept their shortcomings and imperfections and maintain a positive and tolerant attitude towards others and the world at large
Social Support (SS)	The availability and use of a network of caring others (usually family members and friends), which acts as a buffer against stressful life events
Physical Fitness (PF)	One's personal health practices, especially physical exercise
Stress Monitoring (SM)	One's awareness of tension build-up, situations and events that are likely to prove stressful, and one's optimal stimulation range
Structuring (ST)	The ability to organize and manage resources such as time and energy
Problem Solving (PS)	The ability to resolve personal problems including problem definition, considering alternative solutions, execution, and evaluating results

Open Forum Form

Consistent with the exploratory nature of this area of research, each participant was asked to answer several free response questions following the completion of the structured questionnaires. These "Open Forum" questions were designed to elicit comments about any other personal, environmental or social factors which the respondent felt may have been responsible for aiding or impeding their academic performance (see Appendix F).

Intelligence

Previous research has indicated that intelligence tends to significantly co-vary with measures of academic success (Fischer et al., 1992; Lambert, 1988; Turnock, et al., 1998). In order to statistically control for this potentially confounding variable, intelligence was measured by the Wonderlic Personnel Test, (Wonderlic, 1988) a brief (12 minute), paper and pencil cognitive ability test (see Appendix G). Callans (1993) reports a high correlation (.92) with the full scale IQ of the Wechsler Adult Intelligence Scale, Revised.

Procedure

Interested participants contacted the investigator in response to announcements regarding a study of ADHD college students. After receiving more information regarding the general nature of the study, students were presented with the opportunity to volunteer to participate. Participants were informed that the study would be investigating factors related to successfully making it into college with ADHD. Additionally, participants were told that their participation would involve approximately 1.5 hours for completing several

questionnaires, that their responses would be held in complete confidence, and that they would be free to terminate their participation in the study at any time.

Research participants completed questionnaire packets in a university classroom in the presence of this investigator or an assistant. The number of participants completing packets in the same location and at one time was limited to three in order to reduce distractions. Upon completion of an informed consent form (see Appendix H), questionnaire packets were distributed to each research participant. Each questionnaire packet included the following forms: 1) Demographic Information Form, 2) Wonderlic Personnel Test (Wonderlic, 1988), 3) the Coping Resources Inventory for Stress (Matheny, et al., 1987), 4) Adult Behavior Rating Scale-Self Report of Current Behavior (RS-IV-Self), 5) Adult Behavior Rating Scale-Report of Childhood Behavior (RS-IV-Child), 6) Symptom Checklist – 90 – Revised (Derogatis, 1994), 7) General Opinion Questionnaire, 8) Open Forum form.

Following completion of the questionnaire packet, participants were asked to take a few moments to verbally elaborate on their written Open Forum responses. Notes from these interviews were included with the written free response data. Quotes will be included in the results section.

Chapter III

Results

Data were analyzed in three steps. First, a t-test was used to determine if High Success (HS) and Low Success (LS) ADHD college students differed with respect to their overall Coping Resource Effectiveness score. Next, two multivariate analyses of variance (MANOVAs) were employed to determine differences in the reported availability of coping resources between success groups. Success group (high or low) served as the fixed factor for these MANOVAs. The dependent variables were the three composite scores of the CRIS for one MANOVA and the CRIS primary scales for the second MANOVA. The intended covariate, IQ, was not included in the analysis because it was not significantly correlated with GPA ($r = .115$, $p = .467$), and significant IQ differences did not exist between groups, $t(40) = -.661$, $p = .512$ (Tabachnick & Fidell, 1996).

A t-test indicated that HS students did, in fact, differ from LS students with respect to the overall coping resource measure, $t(39) = 2.175$, $p < .05$, $Eta^2 = .108$. The mean overall coping score for the LS group ($M = 65.24$, $SD = 16.60$) was significantly higher than the mean for the HS students ($M = 55.54$, $SD = 11.63$).

The result of the composite-scale MANOVA was not significant. The omnibus test for the primary-scale MANOVA was significant, revealing a large effect for success group, $F(10, 30) = 2.39$, $p < .05$, $Eta^2 = .44$. This indicates that academic success level accounted for 44% of the variance in coping resources. Examination of the univariate F-statistics revealed significant effects for three primary scales: Self-Directedness, $F(1, 39)$

= 4.79, $p < .05$, $Eta^2 = .109$; Confidence, $F(1, 39) = 4.69$, $p < .05$, $Eta^2 = .107$; and Physical Fitness $F(1, 39) = 4.75$, $p < .05$, $Eta^2 = .109$ (see Table 2). Univariate effect sizes for the influence of success level on each of these coping resource subscales are moderate, ranging from 10.7% to 10.9%. Group means indicate that High Success students perceive themselves as having significantly lower levels of Self-Directedness (M = 49.76, SD = 26.67); Confidence, (M = 46.31, SD = 26.00); and Physical Fitness (M = 46.44, SD = 33.71) than do Low Success students (M = 65.91, SD = 19.91; M = 64.71, SD = 28.37; and M = 69.50, SD = 33.99, respectively).

Table 2.

Summary of Univariate Statistics for CRIS Primary by Success Group MANOVA

	Success Group					
	Low		High			
Coping resource	M	SD	M	SD	F^a	Eta^2
Self-disclosure	65	30.4	69	27.4	0.25	.006
Self-directedness	66	19.9	50	26.7	4.78*	.109
Confidence	65	28.4	46	26.1	4.69*	.107
Tension control	52	24.1	43	21.4	1.81	.044
Acceptance	56	27.2	43	23.3	2.77	.066
Social support	83	19.3	71	27.9	2.34	.057
Physical fitness	69	34.0	46	33.7	4.75*	.109
Stress monitoring	66	28.4	50	29.0	3.09	.073
Structuring	48	30.7	47	24.8	0.01	.000
Problem solving	65	30.4	69	27.4	0.25	.006

[a]df = 1, 39 for all tests.

* $p < .05$

Exploratory Analyses

ADHD symptom severity did not differ significantly between success groups, $t(40) = .480$, $p = .634$ or correlate significantly with cumulative GPA ($r = .059$, $p = .713$).

A Pearson's Correlation Procedure was conducted to determine correlations between ADHD symptoms and coping resources. Overall ADHD symptom severity was not significantly correlated with any of the coping resource measures. When symptoms of inattention were considered independent of hyperactive or impulsive symptoms, however, symptom severity did significantly and negatively correlate with the following coping resource scales: Coping Resource Effectiveness (r = -.313, p = .044), Cognitive Restructuring (r = -.352, p = .022), and Tension Control (r = -.380, p = .013). Severity of the hyperactive/impulsive symptoms of ADHD was significantly and positively correlated only with the Social Ease composite scale (r = .322, p = .038).

Open Forum and Interview Responses

While responses varied considerably from person to person on the free response section of the questionnaire, a number of common themes emerged. The factor mentioned most frequently as contributing to the successful admission to college and subsequent progress for these ADHD students was "determination." This theme was mentioned as important by 80% of respondents. One student stated, "I have done well mostly because I have made a huge effort in school. I strive to be the best, no matter how often I fail or how frustrated I get." Often the drive to succeed was discussed in conjunction with "not disappointing" oneself or significant others (usually parents). Comments illustrating this feeling included, "With people I don't know, I couldn't care less what they think about me -- I hardly even notice. But I hate to look like a failure in the eyes of other people that know me, or to feel like I failed myself. I drive myself to succeed so I won't look like an idiot." Eleven students also associated their striving with the idea of needing to "prove" themselves, particularly in response to criticism from parents or teachers. Of additional

interest, nine students cited having a specific goal (e.g. teach 5th graders, go to medical school) in association with their determination. Every one of these nine students was among the High Success group.

The second most commonly identified issue (mentioned by 26 students) which participants felt contributed toward their success was emotional support from others, including family and/or friends. Eleven students stated that others helped in more direct ways as well. For example, one student stated, "I ask teachers if I can talk to them or borrow their notes all the time because I forget what they say before I can write it down." Another feels that his very organized girlfriend is his "own personal angel, sent straight from heaven."

Another common theme emerging from the Open Forum responses (mentioned by 12 students) associated stress with motivation. Usually, this was in conjuction with procrastination or with feeling overwhelmed by too much work. Pertinent comments from students include, "...stress freaks me out, but that helps," "[Procrastination] helps with my papers; it contributes to my fluidity," and "I procrastinate until I'm pushed into a corner. The pressure builds and finally motivates me."

Sixteen students said they attempted to use specific planning or organizing strategies such as day-planners or lists. Half of these individuals also noted having difficulty using the strategies consistently, however. Fourteen participants reported exercising five or more times per week. Other factors which were mentioned repeatedly included reliance on spirituality (8 students), using positive self-talk (7), developing self-awareness (7), taking frequent study breaks (6), and fidgeting with objects (5).

Chapter IV

Discussion

Based on the stress and coping literature as well as reports from clinicians experienced in working with ADHD adults, we expected to find support for the hypothesis that ADHD college students with more available coping resources would demonstrate greater academic success than students reporting fewer coping resources. Study results did not support this hypothesis. Instead, the most successful ADHD college students in our sample reported the lowest availability of coping resources.

Explaining Differences in Coping Resources

Possibly the most obvious explanation for this surprising finding is a ceiling effect. That is, only those ADHD students already most able to cope with the stresses of academic life are in college and available for this research. Given that ADHD students are significantly more likely to fail grades and drop out of high school, it is possible that any remaining differences in coping ability among ADHD college students may retain little discriminatory power in relation to GPA. Other results presented here, however, contradict the rationale of the ceiling effect. Specifically, levels of coping resources do vary among ADHD college students; students with lower GPAs report being significantly more able than students with higher GPAs to cope with stress.

A second explanation for these findings is that academic success reduces stress levels so that high-achieving ADHD college students actually need fewer coping resources. Poor grades among Low-Success students however, may cause higher levels of stress and generate greater need for coping resources. According to this view, the

generation of coping resource reservoirs may be driven, over time, by failure and the stress resulting from it. Stated another way, achieving high grades may be a form of coping in itself. It would follow that students who do not achieve academic success need alternative sources of coping such as those measured by the CRIS. Perhaps such alternate coping resources encourage poor students to stay in school, while their classmates who also struggle but lack coping resources tend to drop out. This hypothesis does not attempt to explain factors associated with achieving high or low grades.

A third possible explanation of fewer coping resources among more successful students is that mechanisms or resources which have been shown to promote coping for a general population sample are not useful for individuals with ADHD or, perhaps, lack utility for this population in an academic setting specifically. For example, higher levels of stress may somehow benefit college students with ADHD[1]. Although this notion is counter-intuitive, it is not without precedent. A number of clinicians working with adult ADHD students have commented that stress caused by impending deadlines often results in a period of intense focus and productivity (Weiss, 1992).

Specific Coping Resources and Success

Significant differences between High-success and Low-success students were found on three of the ten CRIS primary scales included in the MANOVA. Specifically, ADHD students with lower GPAs had significantly healthier scores than did higher-achieving students on the Self-Directedness, Confidence, and Physical Fitness scales. Students who score high on these coping resource scales are typically described as being

[1] While the presence of coping resources have been linked to reductions in measures of both physiological and emotional stress (Cameron & Michenbaum, 1982; Johnson & Sarason, 1979; Lazarus, 1966; McGrath, 1970), no direct measure of stress was used in this study. The following discussion is based on the assumption that lower levels of stress accompany greater perceived coping resources for this population.

independent, confident, appropriately assertive, and physically active. They respect their own judgment, feel in control of their lives and expect to succeed. In addition, they rarely feel overwhelmed by their emotions and regularly use exercise to reduce their level of perceived stress.

These results strongly contradict the second hypothesis discussed earlier (i.e., that lower achievers use coping resources because they experience more stress as a result of their poor performances). According to their CRIS scores, the less successful students in this sample are neither anxiety-ridden nor disappointed in themselves. Instead, these results strengthen the third hypothesis. The more successful ADHD students are actually less sure of themselves and feel more overwhelmed than their peers with below-average GPAs. Yet, these insecure and stressed students are able to earn superior grades. Returning to the third hypothesis, perhaps their stress, either directly or indirectly, enhances their academic performance. Although interpretation of these results remains speculative, a number of potential explanations will be discussed.

Stress, Arousal, and Attention

The increased arousal hypothesis discussed above requires further elaboration. It is well-known that stimulants are the medications which are typically most effective in treating symptoms of ADHD (Barkley, 1990; Cantwell, 1996; Hechtman, Weiss, & Perlman, 1984; Murphy, 1995b; Ratey, Greenberg, & Lindem, 1991). One pharmacokinetic action of stimulants is to increase levels of catecholamines (e.g., dopamine, norepinephrine) in the brain, which, in turn, enhance cortical functions such as attention and planning (Bezchlibnyk-Butler & Jeffries, 1998; Bhandary, Fernandez, Gregory, Tucker, & Masand, 1997). The frontal lobes, limbic system and hind brain are

particularly affected (Blum, Cull, Braverman, & Comings, 1996; Halperin, et al., 1997; Zametkin, et al., 1990). Interestingly, when humans experience an acute stress response, the net result is increased levels of catecholemines in those same areas of the brain (Gray, 1971; Seyle, 1982). It is possible, therefore, that the procrastination-induced performance discussed previously actually has a physiological explanation. In a sense, ADHD students with poor coping resources may inadvertently "self-medicate" when they trigger their stress response. In theory, this "medication" could temporarily reduce their ADHD symptoms and allow them to produce academic work more effectively than if they were not under stress.

This hypothesis is consistent with arousal theories of motivation, which suggest that people are intrinsically motivated to behave in ways that maintain what is, for them, an "optimal" level of stress or arousal (Mandler, 1982). This optimal level of arousal is described by the "arousal-performance relationship" as the intensity of arousal necessary for peak performance on a given task (Hebb, 1955). Research suggests that, in general, most people perform best when experiencing moderate levels of arousal, with task performance deteriorating significantly at both high and low levels of arousal (Freeman, 1940;Yerkes & Dodson, 1908). Very low levels of arousal are associated with mental fatigue, lassitude, and low motivation. Significantly, many clinicians and researchers specializing in ADHD believe that ADHD is primarily a disorder of under-arousal (Barkley, 1990; Cantwell, 1996; Silver, 1992; Weiss & Hechtman, 1993). The performance of students who lack resources to reduce stress may, in fact, benefit by having their level of arousal elevated into the "optimal" range, while students who are able to reduce stress remain under-aroused and under-achieving.

Limitations and Directions for Future Research

This study has a number of limitations. The most significant limitation is the homogeneity of the research population. Participants were predominantly Caucasian and from affluent and highly-educated families. Furthermore, the students in the present study attend a small, selective, church-affiliated liberal arts college. Additionally, because all participants were enrolled at the time of data collection, and therefore demonstrated at least a minimal level of academic success, the range of the outcome variable was narrowed. While some of these similarities help support the findings by essentially holding a number of demographic variables, such as SES and race, constant, the generalizability of the results to other populations is limited. Future research could address the issue of external validity by examining the relationship of coping resources to academic success among a large, heterogeneous sample of college students.

The size of the sample in this study, while adequate to identify an overall difference and several specific differences the availability of coping resources between groups, may have failed to provide sufficient statistical power to reveal other group differences. For example, group differences on two coping resource scales: Acceptance, and Stress Monitoring, approached but did not reach statistical significance. Replication studies with greater statistical power are needed to determine whether patterns of behavior leading to academic success for ADHD students are qualitatively different from the patterns of non-ADHD students. Results would be further enhanced with the addition of experimental comparison groups (e.g., non-ADHD college students).

A number of puzzling findings emerged from this study. Among them is the lack of an IQ difference between Hi-success and Low-success students in our sample. Given

that research with different student populations, including an earlier study with high-symptom college students, has found a relationship between measures of intelligence and GPA (Fischer et al., 1992; Lambert, 1988; Turnock, et al., 1998), we are left to speculate regarding this discrepant finding. The current study is the first to examine the relationship between intelligence and academic success among ADHD college students. One explanation, therefore, is that ADHD college students differ from the general student population such that factors other than intelligence predict academic success to such a degree that differences in IQ become irrelevant. Alternatively, it may be that academic success groups differ with respect to intelligence, but that these differences were obscured in the present study by confounding variables. For example, students with greater academic success tended to score higher on a measure of obsessive traits and were more likely to positively endorse items such as, "Having to do things very slowly to insure correctness," and, "Having to check and double-check what you do." Habits such as these would clearly influence scores on a time-limited test such as the Wonderlic, which was employed as the IQ measure for this study. Anxiety is another factor which data suggest is associated with academic success for this population and which has been shown to reduce performance on timed tests (Sarason, 1984). Future research could clarify the association of IQ and GPA among ADHD college students through the use of a more comprehensive IQ measure that is less likely to be affected by extraneous factors (e.g. WAIS-III).

As mentioned previously, stress levels were incorporated into several hypothesized explanations of these findings. Although no direct measure of stress was incorporated, it was assumed that the inverse relationship between stress and coping

resources held to exist among the general population (Curlette, et al., 1990) also exists among ADHD college students. Studies attempting to replicate these findings would be well served by including galvanic skin response or other direct measures of stress.

Conclusion

Results of the current study provide evidence that successful college students with ADHD may respond to the stresses of an academic setting in ways which appear to be paradoxical. Other research has revealed similarly surprising and counter-intuitive findings among those with ADHD. Milich and Okazaki (1991) conducted a study examining locus of control (internal vs. external) and persistence on academic tasks among ADHD and normal boys. Results indicated differing patterns for the experimental and control groups; for ADHD boys, factors related to learned helplessness (e.g. low confidence, anxiety) were linked to greater effort, persistence and enjoyment on academic tasks. These findings and those in the present study, if borne out by future research, have significant implications for training and intervention strategies. Namely, programs aimed at strengthening self-efficacy or developing strategies for lowering arousal may not be effective for this population.

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APPENDICES

Appendix A

GENERAL INFORMATION

Please answer the following items as carefully and completely as possible. All of the information you give us will be kept strictly confidential.

1. Gender 1) Female_____ 2) Male_____

2. What is your age?_____

3. What is your date of birth?_____

4. What is your year in school? (circle one): FR SO JR SR

5. Are you... (mark only one)
   1) _____Caucasion/White
   2) _____Native American
   3) _____Black or African American
   4) _____Hispanic or Mexican American
   5) _____Asian American
   6) _____International Student
   7) _____Other (please explain)_____

6. What is the highest level of education completed by your:

MOTHER:
   1)_____Less than a high school degree
   2)_____High school degree or GED
   3)_____Some college - no degree
   4)_____College degree
   5)_____Master's degree
   6)_____Doctoral degree

FATHER:
   1)_____Less than a high school degree
   2)_____High school degree or GED
   3)_____Some college - no degree
   4)_____College degree
   5)_____Master's degree
   6)_____Doctoral degree

8. What is your mother's occupation? _____

9. What is your father's occupation? _____

10. What is your family's approximate income level?
   1)_____Less than $12,000
   2)_____$13,000- 24,000
   3)_____$25,000- 36,000
   4)_____$37,000- 48,000
   5)_____$49,000- 65,000
   6)_____$66,000- 90,000
   7)_____Over 90,000

11. What was your high school grade point average (GPA)?_____

12. Please estimate your GPA for the current semester _____ and your cumulative GPA _____

13. Have you ever been officially diagnosed as having Attention Deficit-Hyperactivity Disorder? (circle one) YES NO

   If yes, by whom? When?

   Please list any medication (including dosages) you are currently taking for this condition:

Appendix B

CODE#_____

ADULT BEHAVIOR RATING SCALE-SELF REPORT OF CURRENT BEHAVIOR

Instructions: Circle the number that *best describes* your behavior over the past 6 months.

		Never or rarely	Sometimes	Often	Very often
1.	Fail to give close attention to details or make careless mistakes in job tasks or schoolwork	0	1	2	3
2.	Have difficulty sustaining attention in tasks or leisure activities	0	1	2	3
3.	Do not seem to listen when spoken to directly	0	1	2	3
4.	Do not follow through on instructions and fail to finish work	0	1	2	3
5.	Have difficulty organizing tasks and activities	0	1	2	3
6.	Avoid tasks (e.g.,job tasks, schoolwork) that require mental effort	0	1	2	3
7.	Lose things necessary for tasks or activities	0	1	2	3
8.	Easily distracted	0	1	2	3
9.	Forgetful in daily activities	0	1	2	3
10.	Fidget with hands or feet or squirm in seat	0	1	2	3
11.	Leave seat in situations in which remaining seated is expected	0	1	2	3
12.	Move about excessively in situations in which it is inappropriate; hyperactive; subjective feelings of restlessness	0	1	2	3
13.	Have difficulty engaging in leisure activities quietly	0	1	2	3
14.	"On the go" or act as if "driven by a motor"	0	1	2	3
15.	Talk excessively	0	1	2	3
16.	Blurt out answers before questions have been completed	0	1	2	3
17.	Have difficulty awaiting turn	0	1	2	3
18.	Interrupt or intrude on others	0	1	2	3
19.	Lose temper	0	1	2	3
20.	Argue with others	0	1	2	3
21.	Actively defy or refuse to comply with requests or rules	0	1	2	3
22.	Deliberately annoy people	0	1	2	3
23.	Blame others for my own mistakes or misbehavior	0	1	2	3
24.	Touchy or easily annoyed by others	0	1	2	3
25.	Angry and resentful	0	1	2	3
26.	Spiteful or vindictive	0	1	2	3

Are you currently taking medication for ADHD? (circle one) YES NO

If yes, please use the reverse side of this form to estimate your behavior WITHOUT medication.
If no, leave the reverse side blank.

ADULT BEHAVIOR RATING SCALE-SELF REPORT OF CURRENT BEHAVIOR

Instructions: Circle the number that *best describes* your behavior over the past 6 months. w/o meds

		Never or rarely	Sometimes	Often	Very often
1.	Fail to give close attention to details or make careless mistakes in job tasks or schoolwork	0	1	2	3
2.	Have difficulty sustaining attention in tasks or leisure activities	0	1	2	3
3.	Do not seem to listen when spoken to directly	0	1	2	3
4.	Do not follow through on instructions and fail to finish work	0	1	2	3
5.	Have difficulty organizing tasks and activities	0	1	2	3
6.	Avoid tasks (e.g.,job tasks, schoolwork) that require mental effort	0	1	2	3
7.	Lose things necessary for tasks or activities	0	1	2	3
8.	Easily distracted	0	1	2	3
9.	Forgetful in daily activities	0	1	2	3
10.	Fidget with hands or feet or squirm in seat	0	1	2	3
11.	Leave seat in situations in which remaining seated is expected	0	1	2	3
12.	Move about excessively in situations in which it is inappropriate; hyperactive; subjective feelings of restlessness	0	1	2	3
13.	Have difficulty engaging in leisure activities quietly	0	1	2	3
14.	"On the go" or act as if "driven by a motor"	0	1	2	3
15.	Talk excessively	0	1	2	3
16.	Blurt out answers before questions have been completed	0	1	2	3
17.	Have difficulty awaiting turn	0	1	2	3
18.	Interrupt or intrude on others	0	1	2	3
19.	Lose temper	0	1	2	3
20.	Argue with others	0	1	2	3
21.	Actively defy or refuse to comply with requests or rules	0	1	2	3
22.	Deliberately annoy people	0	1	2	3
23.	Blame others for my own mistakes or misbehavior	0	1	2	3
24.	Touchy or easily annoyed by others	0	1	2	3
25.	Angry and resentful	0	1	2	3
26.	Spiteful or vindictive	0	1	2	3

Appendix C

CODE#_____

ADULT BEHAVIOR RATING SCALE-SELF REPORT OF CHILDHOOD BEHAVIOR

Instructions: Please circle the number that *best describes* your behavior as a child (ages 5-12 years). Please describe behavior while you were NOT on Ritalin or other medication for ADHD.

		Never or rarely	Sometimes	Often	Very often
1.	Failed to give close attention to details or made careless mistakes in schoolwork	0	1	2	3
2.	Had difficulty sustaining attention in tasks or play activities	0	1	2	3
3.	Did not seem to listen when spoken to directly	0	1	2	3
4.	Did not follow through on instructions and failed to finish work	0	1	2	3
5.	Had difficulty organizing tasks and activities	0	1	2	3
6.	Avoided tasks (e.g., schooiwork, homework) that required mental effort	0	1	2	3
7.	Lost things necessary for tasks or activities	0	1	2	3
8.	Easily distracted	0	1	2	3
9.	Forgetful in daily activities	0	1	2	3
10.	Fidgeted with hands or feet or squirmed in seat	0	1	2	3
11.	Left seat in classroom or in other situations in which remaining seated was expected	0	1	2	3
12.	Ran about or climbed excessively in situations in which it was inappropriate; hyperactive	0	1	2	3
13.	Had difficulty engaging in play activities quietly	0	1	2	3
14.	"On the go" or acted as if "driven by a motor"	0	1	2	3
15.	Talked excessively	0	1	2	3
16.	Blurted out answers before questions had been completed	0	1	2	3
17.	Had difficulty awaiting turn	0	1	2	3
18.	Interrupted or intruded on others	0	1	2	3
19.	Lost temper	0	1	2	3
20.	Argued with adults	0	1	2	3
21.	Actively defied or refused to comply with requests or rules	0	1	2	3
22.	Deliberately annoyed people	0	1	2	3
23.	Blamed others for own mistakes or misbehavior	0	1	2	3
24.	Touchy or easily annoyed by others	0	1	2	3
25.	Angry and resentful	0	1	2	3
26.	Spiteful or vindictive	0	1	2	3

Appendix D

INSTRUCTIONS:

Below is a list of problems people sometimes have. Please read each one carefully, and blacken the circle that best describes HOW MUCH THAT PROBLEM HAS DISTRESSED OR BOTHERED YOU DURING THE PAST 7 DAYS INCLUDING TODAY. Blacken the circle for only one number for each problem and do not skip any items. If you change your mind, erase your first mark carefully. Read the example before beginning, and if you have any questions please ask them now.

EXAMPLE

	NOT AT ALL	A LITTLE BIT	MODERATELY	QUITE A BIT	EXTREMELY	HOW MUCH WERE YOU DISTRESSED BY:
1	⓪	①	②	●	④	Bodyaches

	NOT AT ALL	A LITTLE BIT	MODERATELY	QUITE A BIT	EXTREMELY	HOW MUCH WERE YOU DISTRESSED BY:
1	⓪	①	②	③	④	Headaches
2	⓪	①	②	③	④	Nervousness or shakiness inside
3	⓪	①	②	③	④	Repeated unpleasant thoughts that won't leave your mind
4	⓪	①	②	③	④	Faintness or dizziness
5	⓪	①	②	③	④	Loss of sexual interest or pleasure
6	⓪	①	②	③	④	Feeling critical of others
7	⓪	①	②	③	④	The idea that someone else can control your thoughts
8	⓪	①	②	③	④	Feeling others are to blame for most of your troubles
9	⓪	①	②	③	④	Trouble remembering things
10	⓪	①	②	③	④	Worried about sloppiness or carelessness
11	⓪	①	②	③	④	Feeling easily annoyed or irritated
12	⓪	①	②	③	④	Pains in heart or chest
13	⓪	①	②	③	④	Feeling afraid in open spaces or on the streets
14	⓪	①	②	③	④	Feeling low in energy or slowed down
15	⓪	①	②	③	④	Thoughts of ending your life
16	⓪	①	②	③	④	Hearing voices that other people do not hear
17	⓪	①	②	③	④	Trembling
18	⓪	①	②	③	④	Feeling that most people cannot be trusted
19	⓪	①	②	③	④	Poor appetite
20	⓪	①	②	③	④	Crying easily
21	⓪	①	②	③	④	Feeling shy or uneasy with the opposite sex
22	⓪	①	②	③	④	Feelings of being trapped or caught
23	⓪	①	②	③	④	Suddenly scared for no reason
24	⓪	①	②	③	④	Temper outbursts that you could not control
25	⓪	①	②	③	④	Feeling afraid to go out of your house alone
26	⓪	①	②	③	④	Blaming yourself for things
27	⓪	①	②	③	④	Pains in lower back
28	⓪	①	②	③	④	Feeling blocked in getting things done
29	⓪	①	②	③	④	Feeling lonely
30	⓪	①	②	③	④	Feeling blue
31	⓪	①	②	③	④	Worrying too much about things
32	⓪	①	②	③	④	Feeling no interest in things
33	⓪	①	②	③	④	Feeling fearful
34	⓪	①	②	③	④	Your feelings being easily hurt
35	⓪	①	②	③	④	Other people being aware of your private thoughts
36	⓪	①	②	③	④	Feeling others do not understand you or are unsympathetic
37	⓪	①	②	③	④	Feeling that people are unfriendly or dislike you

OVER

	NOT AT ALL	A LITTLE BIT	MODERATELY	QUITE A BIT	EXTREMELY	HOW MUCH WERE YOU DISTRESSED BY:
38	0	1	2	3	4	Having to do things very slowly to insure correctness
39	0	1	2	3	4	Heart pounding or racing
40	0	1	2	3	4	Nausea or upset stomach
41	0	1	2	3	4	Feeling inferior to others
42	0	1	2	3	4	Soreness of your muscles
43	0	1	2	3	4	Feeling that you are watched or talked about by others
44	0	1	2	3	4	Trouble falling asleep
45	0	1	2	3	4	Having to check and double-check what you do
46	0	1	2	3	4	Difficulty making decisions
47	0	1	2	3	4	Feeling afraid to travel on buses, subways, or trains
48	0	1	2	3	4	Trouble getting your breath
49	0	1	2	3	4	Hot or cold spells
50	0	1	2	3	4	Having to avoid certain things, places, or activities because they frighten you
51	0	1	2	3	4	Your mind going blank
52	0	1	2	3	4	Numbness or tingling in parts of your body
53	0	1	2	3	4	A lump in your throat
54	0	1	2	3	4	Feeling hopeless about the future
55	0	1	2	3	4	Trouble concentrating
56	0	1	2	3	4	Feeling weak in parts of your body
57	0	1	2	3	4	Feeling tense or keyed up
58	0	1	2	3	4	Heavy feelings in your arms or legs
59	0	1	2	3	4	Thoughts of death or dying
60	0	1	2	3	4	Overeating
61	0	1	2	3	4	Feeling uneasy when people are watching or talking about you
62	0	1	2	3	4	Having thoughts that are not your own
63	0	1	2	3	4	Having urges to beat, injure, or harm someone
64	0	1	2	3	4	Awakening in the early morning
65	0	1	2	3	4	Having to repeat the same actions such as touching, counting, or washing
66	0	1	2	3	4	Sleep that is restless or disturbed
67	0	1	2	3	4	Having urges to break or smash things
68	0	1	2	3	4	Having ideas or beliefs that others do not share
69	0	1	2	3	4	Feeling very self-conscious with others
70	0	1	2	3	4	Feeling uneasy in crowds, such as shopping or at a movie
71	0	1	2	3	4	Feeling everything is an effort
72	0	1	2	3	4	Spells of terror or panic
73	0	1	2	3	4	Feeling uncomfortable about eating or drinking in public
74	0	1	2	3	4	Getting into frequent arguments
75	0	1	2	3	4	Feeling nervous when you are left alone
76	0	1	2	3	4	Others not giving you proper credit for your achievements
77	0	1	2	3	4	Feeling lonely even when you are with people
78	0	1	2	3	4	Feeling so restless you couldn't sit still
79	0	1	2	3	4	Feelings of worthlessness
80	0	1	2	3	4	The feeling that something bad is going to happen to you
81	0	1	2	3	4	Shouting or throwing things
82	0	1	2	3	4	Feeling afraid you will faint in public
83	0	1	2	3	4	Feeling that people will take advantage of you if you let them
84	0	1	2	3	4	Having thoughts about sex that bother you a lot
85	0	1	2	3	4	The idea that you should be punished for your sins
86	0	1	2	3	4	Thoughts and images of a frightening nature
87	0	1	2	3	4	The idea that something serious is wrong with your body
88	0	1	2	3	4	Never feeling close to another person
89	0	1	2	3	4	Feelings of guilt
90	0	1	2	3	4	The idea that something is wrong with your mind

Appendix E

INSTRUCTIONS

This inventory is designed to help you better understand your stress coping resources. Its value to you will depend on your honesty and accuracy in completing it.

The inventory consists of a series of items. **Answer each item either TRUE (T) or FALSE (F) as applied to you.**

Please do not write in this booklet. Place your answers on the sheet given you for this purpose using only a #2 pencil. Fill in your name and other requested information. Then blacken the circles with the corresponding letter or number below each item. Make heavy marks and blacken each space completely. Try to answer all the items starting with number one on the top of the next page going down the columns. Do not begin until told to do so.

CRIS Form A
Quality of Life Series from Health PRISMS, Inc.
Health Psychology Research Institute for Stress and Management Services

200 Piedmont Avenue, N.E., Suite 257
P.O. Box 347190, Atlanta, GA 30334-7190

COPING RESOURCES INVENTORY FOR STRESS

1. I freely share my thoughts and feelings with others.
2. I have a satisfying loving relationship with someone.
3. I'm very good at standing up for my rights.
4. I try too hard to get people's approval.
5. I do not expect too much of myself.
6. My overall health is excellent.
7. I'm satisfied with my time management skills.
8. I have financial problems because I manage money poorly.
9. I often reduce my stress through physical activity.
10. I'm good at recognizing the early signs of tension build-up in my body.
11. When I'm under pressure, I seldom take time out for rest.
12. I slow down my breathing to become less emotional.
13. I rarely schedule my daily activities.
14. Often I lower my stress by controlling my thoughts.
15. I feel at ease in most social situations.
16. If I don't complete a task on time, I become greatly upset.
17. I'm good at asserting myself.
18. I'm good at quickly sizing up situations which are likely to be stressful.
19. My health does not restrict my daily activities.
20. I often find myself dreading situations for fear I cannot handle them.
21. I do not mind asking for what I want.
22. When a problem arises, I tend to exaggerate how it will affect me.
23. I cannot tell my family members how I really feel.
24. I feel nervous most of the time.
25. When under stress, I sometimes relax by picturing myself in a very peaceful situation.
26. When the pressure on me begins to build, I quickly notice it.
27. I'm often afraid to express myself to others.
28. I engage in an exercise program for stretching.
29. I'm less physically fit than the average person my age.
30. I usually don't try to hide my true feelings.
31. When compared with others, my coping ability is excellent.
32. I take medicine on a regular basis for a health problem.
33. I do not get enough affection from those persons closest to me.
34. My faults are hard for me to accept.
35. I become very upset when machines don't work right.
36. When facing frightening tasks, I have learned to rehearse past successes to help calm myself.
37. I often spend hours at a task without getting anything done .
38. I'm not good at taking care of details.
39. I suffer some from ill-health.
40. I tend to make poor decisions about how to spend my money.

41. Sometimes I become angry with others.

42. I'm involved in a weight training program for my muscles at least once a week.

43. I often take action on a problem before I fully understand it.

44. My income is enough for my lifestyle.

45. I don' t feel needed in my family as much as I would like to be.

46. I have a health problem which causes me to worry.

47. During my free time I'm more physically active than most people.

48. I tend to do what others want rather than upset them.

49. I always go back and correct my mistakes.

50. I can feel good about myself even if some people are unhappy with me.

51. I have trouble handling problems.

52. I do not know what to say to myself to calm down.

53. I manage my time better than most people.

54. In my daily routine I move smoothly from one task to another.

55. I cope with difficult situations better than most people do.

56. Members of my family are not emotionally close.

57. I could solve several major problems in my life if I had more money.

58. There have been times I could not talk fast enough to keep up with my thinking.

59. People seldom have trouble getting to know me.

60. I can easily accept not getting my work done on time if I've tried hard.

61. I have a health problem which causes me pain.

62. When faced with a problem, I carefully consider how each possible solution might affect me.

63. I feel free to share my problems with family and/or friends.

64. I'm an impulsive spender.

65. I am willing to try new things even when others don't approve.

66. Praying or meditating helps me calm down.

67. I do not tire easily.

68. I have difficulty staying with my goals.

69. I'm in poor physical condition.

70. I'm good at seeing what the possible results of my options are before making a decision.

71. If someone has taken advantage of me, I seldom say anything to them about it.

72. I sometimes use crash diets to lose weight.

73. There have been times when I have felt worthless.

74. I'm often bothered by muscle tension.

75. Lack of money often causes me stress.

76. I cannot seem to stay with an exercise program for more than a week or so.

77. I start projects by doing the most important things first.

78. When I feel the pressure mounting, I usually practice a relaxation technique.

79. Sometimes I resent not getting my own way.

80. I worry about money quite often.

81. When under stress, I take time to notice my thoughts and feelings.

82. It's hard for me to behave independently of the opinions of others.

83. Sometimes I do not finish the tasks I start.

84. Sometimes when highly stressed, I have calmed myself down by sitting quietly and breathing slowly.

85. My body clearly tells me when the pressure is too great.

86. It bothers me to share my feelings with others.

87. I'm very good at putting my problems in proper perspective.

88. I engage in jogging, swimming, cycling, or other fast-paced exercises on a regular basis.

89. It's easy for me to admit it when I'm wrong.

90. I feel uneasy if I'm in a conversation that becomes personal.

91. I often go more than two or three days without exercising.

92. Most people seem better at recognizing stress symptoms than I am.

93. I do not engage in a sport or an exercise program.

94. I'm a good problem solver.

95. When I'm stressed, I do not get a lot of relief at home.

96. Emotionally, I'm not a very stable person.

97. When things go wrong, there aren't many people I can ask for help.

98. I try too hard to please other people.

99. Sometimes I feel like breaking things.

100. When I do poorly on a task, I feel bad for a long time.

101. I like myself the way I am.

102. I usually do not complete the tasks I start.

103. Exercise helps me cope with stress.

104. I do not let others get away with criticizing me unfairly.

105. I get along well with my relatives.

106. I get very upset when others don't meet me on time.

107. I take time to examine my priorities.

108. My family usually handles anger very well.

109. When solving problems, I usually delay making decisions until I get the facts I need.

110. People generally can tell how I'm feeling.

111. I have a hard time accepting the fact that many things are different than I would like them to be.

112. I have great confidence in my abilities.

113. When arguing, I give in too easily.

114. I'm good at recognizing my stressful thinking.

115. I strive to maintain good health.

116. When facing stressful situations, I know how to become calm by sitting quietly and turning my mind inward.

117. When tension builds, I'm helpless to control it.

118. I'm probably more secretive than most people I know.

119. I often get into stressful situations with other people before I recognize it.

120. My body is like a well-oiled machine, with all parts working smoothly.

121. I have less patience in handling problem situations than other people.

122. I generally feel at ease when I meet people.

123. I keep good muscle tone throughout my body.

124. When dealing with scary situations, I often have racing thoughts and runaway emotions.

125. After solving a problem I usually take time to review what happened.

126. There have been a few times when I have given up trying something because I've doubted my ability.

127. I have a health problem which limits my physical movements.

128. I have debts that I worry about quite often.

129. My family is not as supportive of what I do as I would like them to be.

130. I'm often so lacking in energy that my work suffers.

131. I'm willing to tell my faults to other people.

132. I have a hard time saying "no" to others.

133. I would like to change some things about myself.

134. When under stress, I have difficulty asking for help.

135. I often waste time complaining about problems rather than seeing them as challenges.

136. I don't have more than two alcoholic drinks a day.

137. When under tension, I'm good at turning my thoughts to less stressful things.

138. If anyone disapproves of me, I try very hard to change my behavior.

139. I keep enough money saved for emergency needs.

140. I keep my troubles to myself.

141. I'm pleased with my physical appearance.

142. I feel hurt when I'm criticized.

143. I have a life-threatening illness.

144. It doesn't bother me at all when others dislike what I do.

145. Members of my family do not treat each other fairly.

146. I'm especially good at recognizing situations that are stressful to me.

147. If I don't like what someone is doing, I usually say so.

148. I am often depressed.

149. I know when the pressure on me is about right.

150. I cannot seem to get my bills paid off.

151. It's important that everyone approves of me.

152. I am good at carrying out my plans.

153. My physical health is a problem to me.

154. It's often hard to identify the thoughts that cause me stress.

155. I do not care if other people talk about my problems.

156. I often get angry.

157. At times I distrust people.

158. I would really like to change my physical appearance.

159. When members of my family are hurting, they often talk to me about it.

160. When I'm upset, I have no ways of calming down.

161. I'm embarrassed by the shape of my body when I see myself in a mirror.

162. I can accept my mistakes.

163. I can manage most stressful situations very well.

164. I'm usually shy when talking to people I don't know.

165. I live within my financial means.

166. There have been occasions when I have felt jealous of others' good luck.

167. I seem to get sick more often than most people.

168. I often reduce tension by directly confronting the source of my tension.

169. When under pressure, I often fail to see possible choices because I assume things can be done only certain ways.

170. My friends would say I lack self confidence.

171. I have more trouble accepting life's disappointments than I should.

172. I'm often afraid of meeting people.

173. I have a hard time giving criticism, even when it's needed.

174. I pace myself so that I'm not too busy some times while having very little to do at other times.

175. When I'm under stress, I seldom examine my thinking.

176. Often my feelings get the best of me.

177. I don't always stand up for my rights.

178. I have sleeping problems.

179. I need everyone to like me.

180. If asked, I would have some trouble telling you whether I'm tense or relaxed.

181. I tend to view things as being much worse than they are.

182. When I'm afraid, I often regulate my breathing to get control of myself.

183. Stressful signals from my body must become quite severe before I notice them.

184. I cannot relax myself by controlling my thinking.

185. I practice good financial management skills.

186. I easily notice problems when they begin to arise.

187. I know when I'm under even a little pressure.

188. My past experiences cause me to doubt myself.

189. I do not dwell on situations I cannot change.

190. I know which situations are going to be too much for me.

191. I often do something physical such as walking or running to calm down.

192. I keep my feelings to myself more than most people do.

193. I almost always plan my tasks on a daily basis.

194. I am very good at guessing what will work in a problem situation.

195. I do not know much about exercises for various muscle groups.

196. I drink more than four caffeine drinks a day.

197. I assign priorities to daily matters and stay with them.

198. Sometimes I become angry but do not tell anyone.

199. I'm very good at handling stress.

200. When solving problems, I spend too much time considering courses of action which are not realistic.

201. I'm not good at handling my finances.

202. I think of myself as being in good health.

203. Other people adjust to stressful situations better than I do.

204. I have enough money to meet my needs.

205. Members of my family do not encourage one another.

206. Even when it's necessary, it upsets me to have to settle for less-than-perfect performance.

207. I am a well organized person.

208. In stressful situations, I put things in perspective better than most persons do.

209. Sometimes I do not let people know how I really feel.

210. I'm seriously overweight.

211. I have financial problems.

212. When someone is angry with me, I usually feel that it's my fault.

213. I do not let other people get to know me.

214. I do not have any long term illnesses (such as ulcers, heart or breathing problems, migraine headaches, problems in movement, or backaches).

215. I rarely tell anyone the things I imagine.

216. I am dissatisfied with my family.

217. After solving a problem, I think about the long range effects of what I did.

218. I do not engage in a muscle building program.

219. I have a hard time carrying out a plan of action.

220. I'm comfortable in sharing my deepest feelings with one or more persons.

221. When I have a problem, I actively search for information that may be helpful in solving it.

222. I seldom monitor my body to see if I'm tense.

223. Often I don't know why I get so angry and grouchy.

224. I do not have enough money to feel secure.

225. There are many things in my life I cannot talk about.

226. I'm not motivated to exercise.

227. I seldom examine problems from several points of view.

228. I plan my tasks to insure a steady pace.

229. I cannot accept being let down by someone I know well.

230. One of my biggest problems is lack of money.

231. I use tranquilizers or sleeping pills.

232. I can state my goals for this year.

233. When solving problems, I try very hard to define them clearly.

234. I usually delay the difficult tasks to last.

235. I do not find it difficult to accept the mistakes of others.

236. When I sense the tension building, I practice a system of deep muscle relaxation by first tensing and then relaxing my muscles.

237. I cannot easily tell when I'm under stress.

238. It's hard for me to talk openly about myself to others.

239. It's difficult for me to admit to failure.

240. I have an exercise program for strengthening my heart and other muscles.

241. I do not have enough money for the nicer things in life.

242. When things are going badly, I'm reluctant to express my opinions.

243. I'm good at recognizing the stressful aspects of situations.

244. I have a health problem which limits my daily activities to a great extent.

245. I often catch myself worrying about things.

246. I exercise to improve my coordination.

247. I have headaches at least once a week.

248. Often I do not get the important things done.

249. Sometimes I am stressed for a long time before noticing it.

250. I put up with a lot more from others than most persons.

251. When I achieve something, members of my family seem very pleased.

252. I can handle my emotions very well.

253. I approach problems in a logical, step-by-step fashion.

254. Usually I can accept it when a friend disappoints me.

255. I have some breathing problems.

256. I do not have any physical handicaps.

257. I do not smoke or use tobacco in other forms.

258. I'm deeply hurt when others criticize me.

259. I can tell you exactly how my body responds to stressful situations.

260. Members of my family help each other.

261. I'm too hasty in making decisions.

262. I have an eating disorder.

263. I have enough money to do most of the things I want to do.

264. I am capable of coping with just about any situation that might arise.

265. Members of my family are seldom willing to compromise.

266. When I'm nervous, I often take action on a problem before getting enough information.

267. I seldom let people know what I'm thinking.

268. In trying to solve problems, I hurry too much and make mistakes.

269. I do not get enough exercise.

270. Members of my family are not willing to listen to my problems.

271. I have enough money to take the kinds of vacations I want.

272. I do not mind telling other people how I feel.

273. I receive a great amount of emotional support from friends.

274. Usually I feel very bad when I fail to do some thing right.

275. When upset, I usually tell myself good things in order to calm down.

276. I usually feel full of energy.

277. My eating habits are based only on good nutritional principles.

278. Even when a course of action is clear, I delay too long in making a decision.

279. Members of my family do not respect my rights as much as they should.

280. I can keep up physical exercise longer than most persons my age.

Appendix F

Code #:_____

OPEN FORUM:

This research is helping us understand how people with ADHD cope with the stresses of college. Hopefully, your thoughtful responses to this survey will aid in the development of programs to guide ADHD students who may struggle. Would you take a moment now to consider any factors (past or present) which have been helpful to your success? Did the survey questions miss anything important? In other words,

What has helped you get where you are?

Some possible memory cues:

- **Daytimer?**
- **Other Gadgets?**
- **Significant People?**
- **Particular Attitudes?**
- **Spirituality?**
- **Exercise?**
- **Study Habits?**
- **Hobbies?**
- **Toys?**
- **Study Breaks?**

What gets in your way?

What motivates you?

How do you handle your stress?

(Use Back Side If Needed)

Appendix G

WONDERLIC

PERSONNEL TEST

FORM A

NAME ..... Date .....
(Please Print)

READ THIS PAGE CAREFULLY. DO EXACTLY AS YOU ARE TOLD.
DO NOT TURN OVER THIS PAGE UNTIL YOU ARE
INSTRUCTED TO DO SO.

PROBLEMS MUST BE WORKED WITHOUT THE AID OF A CALCULATOR
OR OTHER PROBLEM-SOLVING DEVICE.

This is a test of problem solving ability. It contains various types of questions. Below is a sample question correctly filled in:

PLACE ANSWERS HERE

REAP is the opposite of
1 obtain, 2 cheer, 3 continue, 4 exist, 5 sow ..... [5]

The correct answer is "sow". (It is helpful to underline the correct word.) The correct word is numbered 5. Then write the figure 5 in the brackets at the end of the line.

Answer the next sample question yourself.

Paper sells for 23 cents per pad. What will 4 pads cost? ..... [___]

The correct answer is 92¢. There is nothing to underline so just place "92¢" in the brackets.

Here is another example:

MINER MINOR — Do these words have
1 similar meaning, 2 contradictory, 3 mean neither same nor opposite? ..... [___]

The correct answer is "mean neither same nor opposite" which is number 3 so all you have to do is place a figure "3" in the brackets at the end of the line.

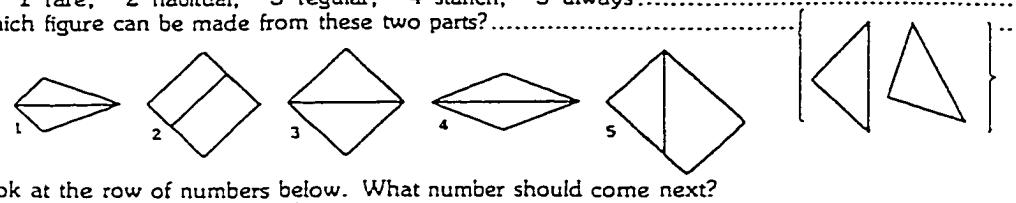
This test contains 50 questions. It is unlikely that you will finish all of them, but do your best. After the examiner tells you to begin, you will be given exactly 12 minutes to work as many as you can. Do not go so fast that you make mistakes since you must try to get as many right as possible. The questions become increasingly difficult, so do not skip about. Do not spend too much time on any one problem. The examiner will not answer any questions after the test begins.

Now, lay down your pencil and wait for the examiner to tell you to begin!

Do not turn the page until you are told to do so.

START HERE | **ANSWERS HERE**

1. The last month of the year is
   1 January, 2 March, 3 July, 4 December, 5 October ..... [____]
2. CAPTURE is the opposite of
   1 place, 2 release, 3 risk, 4 venture, 5 degrade ..... [____]
3. Most of the items below resemble each other. Which one is least like the others?
   1 January, 2 August, 3 Wednesday, 4 October, 5 December ..... [____]
4. Answer by printing YES or NO—Does R.S.V.P. mean "reply not necessary"? ..... [____]
5. In the following set of words, which word is different from the others?
   1 troop, 2 league, 3 participate, 4 pack, 5 gang ..... [____]
6. USUAL is the opposite of
   1 rare, 2 habitual, 3 regular, 4 stanch, 5 always ..... [____]
7. Which figure can be made from these two parts? ..... [____]



8. Look at the row of numbers below. What number should come next?
   8 4 2 1 ½ ¼ ? ..... [____]
9. CLIENT CUSTOMER—Do these words have
   1 similar meanings, 2 contradictory, 3 mean neither same nor opposite? ..... [____]
10. Which word below is related to smell as chew is to teeth?
    1 sweet, 2 stink, 3 odor, 4 nose, 5 clean ..... [____]
11. AUTUMN is the opposite of
    1 vacation, 2 summer, 3 spring, 4 winter, 5 fall ..... [____]
12. A train travels 300 feet in ½ second. At this same speed, how many feet will it travel in 10 seconds ..... [____]
13. Assume the first 2 statements are true. Is the final one:
    1 true, 2 false, 3 not certain?
    These boys are normal children. All normal children are active.
    These boys are active ..... [____]
14. REMOTE is the opposite of
    1 secluded, 2 near, 3 far, 4 hasty, 5 exact ..... [____]
15. Lemon candies sell at 3 for 10 cents. How much will 1½ dozen cost? ..... [____]
16. How many of the five items listed below are exact duplicates of each other? ..... [____]

84721	84721
9210651	9210561
14201201	14210210
96101101	96101161
88884444	88884444

17. Suppose you arranged the following words so that they made a true statement. Then print the last letter of the last word as the answer to this problem.
    always A verb sentence a has ..... [____]
18. A boy is 5 years old and his sister is twice as old. When the boy is 8 years old, what will be the age of his sister? ..... [____]
19. IT'S ITS—Do these words have
    1 similar meanings, 2 contradictory, 3 mean neither same nor opposite? ..... [____]
20. Assume that the first 2 statements are true. Is the final statement:
    1 true, 2 false, 3 not certain?
    John is the same age as Sally. Sally is younger than Bill. John is younger than Bill. ..... [____]
21. A dealer bought some barrels for $4000. She sold them for $5000, making $50 on each barrel. How many barrels were involved? ..... [____]
22. Suppose you arrange the following words so that they make a complete sentence. If it is a true statement, put a (T) in the brackets; if false, put an (F) there.
    eggs lay All chickens ..... [____]
23. Two of the following proverbs have the same meaning. Which ones are they? ..... [____]
    1. Many a good cow hath a bad calf.
    2. Like father, like son.
    3. A miss is as good as a mile.
    4. A man is known by the company he keeps.
    5. They are seeds out of the same bowl.
24. A watch lost 1 minute 18 seconds in 39 days. How many seconds did it lose per day? ..... [____]
25. CANVASS CANVAS—Do these words have
    1 similar meaning, 2 contradictory, 3 mean neither same nor opposite? ..... [____]
26. Assume the first 2 statements are true. Is the final one: 1 true, 2 false, 3 not certain?
    All Quakers are pacifists. Some of the people in this room are Quakers. Some of the people in this room are pacifists. ..... [____]
27. In 30 days a boy saved $1.00. What was his average daily saving? ..... [____]
28. INGENIOUS INGENOUS—Do these words have
    1 similar meanings, 2 contradictory, 3 mean neither same nor opposite? ..... [____]
29. Two men caught 36 fish; X caught 5 times as many as Y. How many fish did Y catch? ..... [____]

CONTINUE HERE

PLACE ANSWERS HERE

30. A rectangular bin, completely filled, holds 800 cubic feet of grain. If the bin is 8 feet wide and 10 feet long, how deep is it? ..... [____]

31. One number in the following series does not fit in with the pattern set by the others. What should that number be? ½ ¼ ⅛ ⅛ ⅛ 1/12 ..... [____]

32. Answer this question by printing YES or NO. Does A.D. mean "In the year of our Lord"? ..... [____]

33. CREDITABLE CREDULOUS—Do these words have
1 similar meaning, 2 contradictory, 3 mean neither same nor opposite? ..... [____]

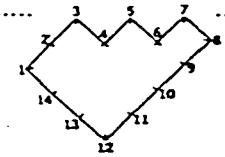
34. A skirt requires 2¼ yards of material. How many can be cut from 45 yards? ..... [____]

35. A clock was exactly on time at noon on Monday. At 2 P.M. on Wednesday, it was 25 seconds slow. At that same rate, how much did it lose in ½ hour? ..... [____]

36. Our baseball team lost 9 games this season. This was ⅜ of all they played. How many games did they play this season? ..... [____]

37. What is the next number in this series? 1 .5 .25 .125 ? ..... [____]

38. This geometric figure can be divided by a straight line into two parts which will fit together in a certain way to make a perfect square. Draw such a line by joining two of the numbers. Then write the numbers as the answer. ..... [____]



39. Are the meanings of the following sentences 1 similar, 2 contradictory, 3 neither similar nor contradictory? A new broom sweeps clean. Old shoes are easiest. ..... [____]

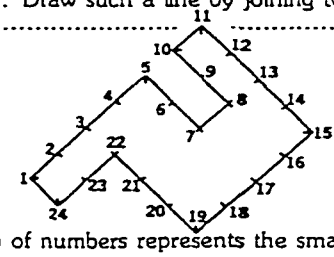
40. How many of the five items listed below are exact duplicates of each other? ..... [____]

Rexford, J. D.	Rockford, J. D.
Singleton, M. O.	Simbleten, M. O.
Richards, W. E.	Richard, W. E.
Siegel, A. B.	Seigel, A. B.
Wood, A. O.	Wood, A. O.

41. Two of the following proverbs have similar meanings. Which ones are they? ..... [____]

1. You cannot make a silk purse out of a sow's ear.
2. He that steals an egg will steal an ox.
3. A rolling stone gathers no moss.
4. You cannot damage a wrecked ship.
5. It is the impossible that happens.

42. This geometric figure can be divided by a straight line into two parts which will fit together in a certain way to make a perfect square. Draw such a line by joining two of the numbers. Then write these numbers as the answer. ..... [____]



43. Which number in the following group of numbers represents the smallest amount?
10 1 .999 .33 11 ..... [____]

44. Are the meanings of the following sentences:
1 similar, 2 contradictory, 3 neither similar nor contradictory?
No honest man ever repented for his honesty. Honesty is praised and starves. ..... [____]

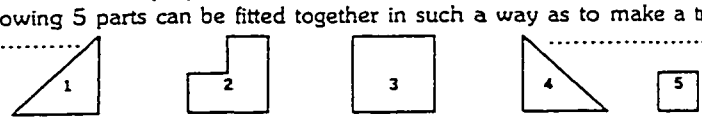
45. For $1.80 a grocer buys a case of fruit which contains 12 dozen. She knows that two dozen will spoil before she sells them. At what price per dozen must she sell the good ones to gain ⅓ of the whole cost? ..... [____]

46. In the following set of words, which word is different from the others?
1 colony, 2 companion, 3 covey, 4 crew, 5 constellation ..... [____]

47. Assume that the first 2 statements are true. Is the final one: 1 true, 2 false, 3 not certain:
Great men are ridiculed. I am ridiculed. I am a great man. ..... [____]

48. Three individuals form a partnership and agree to divide the profits equally. X invests $4500, Y invests $3500 and Z invests $2000. If the profits are $1500, how much less does X receive than if the profits were divided in proportion to the amount invested? ..... [____]

49. Four of the following 5 parts can be fitted together in such a way as to make a triangle. Which 4 are they? ..... [____]



50. In printing an article of 30,000 words, a printer decides to use two sizes of type. Using the larger type, a printed page contains 1200 words. Using the smaller type, a page contains 1500 words. The article is allotted 22 pages in a magazine. How many pages must be in the smaller type? ..... [____]

Appendix H

WITTENBERG UNIVERSITY

Participant Information and Consent Form

Project Title: Coping Strategies and Success

Investigator: Patrick Turnock
Department of Psychology
327-7475 or 828-2002

Objectives of Research: This research project is designed to explore various coping strategies used by adults in an academic environment. By examining the effectiveness of such strategies, we hope to isolate those which appear to be most useful to people. Ideally, these can then be passed on to and used by other adults who are not currently using effective coping strategies in college.

Procedures: To help us understand the best method(s) for coping, we will be asking you to complete a series of questionnaires. Since the information that you give will guide subsequent research and practice, we ask that you take your time, read carefully, and answer all questions as completely as possible.

In order to protect your privacy and the confidentiality of your responses, the information which you provide will be used for purposes of research only. Any written report to be generated from this information will make no reference to any individual participant. Additionally, collected data will be kept secure in a locked cabinet. Because questionnaires will be identified only by code number, we will ask you not to place your name on any of the questionnaire materials unless specifically directed to do so.

As a part of this study, we will need to obtain your grades for the current semester and your SAT/ACT scores. By signing your name at the bottom of this form, you will be giving your consent to this.

Risks: There are no known risks of participating in a study of this kind. While it is not possible to identify all potential risks in an experimental procedure, I believe that reasonable safeguards have been taken to minimize both the known and the potential, but unknown, risks.

You are free to discontinue your participation at any time. If you have any questions or concerns about this research, feel free to contact the individual listed above. If you have any questions about any harm that you think might result from this study, please contact Mr. Gus Geil, Vice President for Business Affairs at Wittenberg, at 327-7022.

Consent to Serve as a Participant in Research

I understand that my participation in this research is voluntary. If I decide to participate in the study, I may withdraw my consent and stop participating at any time without penalty or loss of benefits to which I am otherwise entitled.

I have read and understand the information stated and willingly sign this consent form. By signing, I am indicating that I have received, on the date indicated, a signed copy of this one-page document.

Participant name (printed)	Social Security or Student Number
Participant signature	Date
Investigator signature	Date