A PILOT STUDY TO EXPLORE THE USE OF EXPRESSIVE WRITING TO REDUCE ANXIETY AND PSYCHOLOGICAL THREAT IN AN ACADEMIC SETTING

by

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ABSTRACT

A Pilot Study to Explore the Use of Expressive Writing to Reduce Anxiety and Psychological
Threat in an Academic Setting

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The purpose of this study was to investigate if the use of Pennebaker's short-term expressive writing intervention would have a positive effect on the academic performance of a group of third semester underperforming freshmen. This is a relatively brief and simple intervention pioneered by J. W. Pennebaker (1997) who conducted numerous studies using the procedure. Most of the research has involved having subjects write about traumatic, stressful or emotional events for 15 – 20 minutes (the maximum) over 3 – 5 days. In contrast, the studies by Wilson (2006) and Cohen et al (2006) used self-affirmations for writing. For this study self-affirmation directions were given to the experimental group, and the control group was instructed to write about their goals and objectives for the future. Both the experimental and control groups was instructed to write for 15 minutes each day for three days.

Results of the short-term expressive writing intervention were investigated using a variety of measures and instruments. Academic performance was measured by obtaining records of the participant's overall GPA and midterm grades. For the purposes of this study, the physical health complaints of participants were measured by scores on the *Pennebaker Inventory of Limbic Languidness* (PILL). Furthermore, psychological well-being was measured by subscale scores on *The Multiple Affect Adjective Checklist-Revised* (MAACL-R). The *Adjective Checklist* (ACL) assessed personality characteristics. College adjustment was measured by subscales on *The College Adjustment Test* (CAT) and scores on the *College Activities and Behavior*

Questionnaire (CABQ).   Participates were third semester underperforming freshmen students participating in the University College Academic Success Program. Participants were recruited using the sections of the University 110 classes. The participants (N=122) were assigned to the experimental group (n=23), the control group (n=24), and the non-writing group (n=75) based on what section they were enrolled in. Discussion of the results and how they relate to the literature are included. Implications of the investigation and recommendations for future research are also included.

This dissertation is dedicated to Mattie Thomas, my grandmother, Louise Brooks, my

aunt and Candace Matchem, my niece, who showed me unconditional love.

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CHAPTER ONE

INTRODUCTION

Attending college for the first-time can be a time of academic and emotional

adjustment for freshman students. The new demands of course requirements and

developing a social support system can be seen as a "harsh" reality for some students.

This difficulty in adjusting can take the form of poor academic performance and often

increased medical complaints. Research has shown that freshman students experience a

great deal of stress related to adjusting to college (Kadison, DiGeronimo, 2004).

Although university settings are stressful for almost all students according to (Cohen

et.al, 2006) for African American students the academic environment can involve an

extra degree of threat not experiences by non minority students. Successful adjustment to

college during the first year is an area of increasing concern for most higher education

institutions (McGrath, Braunstein, 1997, Tinto, 1993). Since according to (Tinto,1993)

75% of students who dropout of college do so within the first two years and the greatest

proportion of these students dropout after the first year, it is critically important to

understand the complex forces that influence successful academic adjustment during the

first year.

IMPORTANCE OF THE STUDY

A study by Johnes & Taylor (1991) found that non-completers of degree courses

earned less than graduates and that there was little evidence of the gap narrowing over

time. The non-graduates also experienced longer durations of unemployment. The costs

incurred were not only financial; Pervin (1966) found that withdrawn students often felt guilty and ashamed of dropping out and that this could change over time to depression and lack of self-esteem. The consequences and costs can be equally serious for the institution.

A student's withdrawal represents a loss to educational institutions of a future graduate due to the anticipated revenue from tuition. Full-time enrollments are critical to an institution's continued survival, and high levels of attrition adversely affect an institution's funding, facilities planning, and long-term planning for the curriculum. Declining enrollments, for instance, leave unused building capacity. Large numbers of part-time or academically underprepared students increase the average cost per student. Furthermore, high rates of no completion among others in the general student body magnify the problem (Jones, & Wilson, 1990).

BACKGROUND

Freshmen students beginning college usually have expectations about college life before leaving home. Some students look forward to college and are eager to experience more freedom and adventure. Other individuals may be enthusiastic about college initially, but then discover that the actual experience falls short of their expectations. For students who go to universities away from home the transition usually reduces their contact and support from family and friends. The pressure of increased academic

demands and forming new social relationships can be a source of strain and acute stress for freshmen students.

Handling these stressors associated with the transition may lead to increased psychological distress and decreased academic performance. Assessment of stress levels in college students is a topic that has been examined by previous studies. Friedlander, (2007), examined the joint effects of stress, social support, and self-esteem on adjustment to college. Undergraduate students reported stress was the most common health factor impacting their academic performance (American College Health Association, 2006). (Dwyer & Cummings, 2001; Fisher & Hood, 1988), results show that stress adversely affects psychological and physical health. Demakis and McAdams (1994) found that undergraduate students who reported heightened levels of stress had significantly more physical health problems and less satisfaction compared with those reporting lower levels of stress. Wintre and Yaffe (2000) found that increases in stress during the first year predicted decreased overall adjustment and lower grade point average (GPA) at the end of the year.

Research has shown that the anxiety associated with the concept of "stereotype threat" may also be a factor for minority students and females that influence their academic performance. Steele & Aronson, (1995) first developed the notion of stereotype threat to identify how everyone is vulnerable to stereotype threat, at least in some circumstances. Everyone is a member of at least one group that is characterized by some type stereotype, and any salient social identity can affect performance. Researchers have shown that the consequences of stereotype threat go beyond underachievement on an academic task for example according to Stone, (2002) it can lead to self-handicapping

strategies ,such as reduced time practicing for a task. In education it can influence students to choose not to pursue the domain of study, and consequently limit the range of their professional endeavors that will be successful.

In long-term effects this lack of success can contribute to educational and social inequality (Schmader, Johns, & Barquissau, 2004). Some student's have concerns based upon loss of future income as a result of having withdrawn from college before receiving a degree. Employees with college degrees earn more money than do employees with only high school diplomas (Sydow & Sandel, 1998). Therefore, students who withdraw from college before graduation typically will earn less money over their lifetime than will college graduates. Thus, retention of students remains a concern for the survival of institutions and students.

Some institutions have expanded their curricula to include special courses for their high-risk students. While some changes in curriculum have been directly related to colleges' and universities' efforts to reduce attrition, other changes have been indirect. For example, the majors that students choose and the changes they make in majors affect the development of curricula. Similarly, academically underprepared students who choose majors they perceive as less academically challenging affect the development of curricula, because as the university enrolls fewer students choosing "difficult" majors and more students choosing "easy" majors, its curriculum becomes thus shaped over time (Jones, & Wilson, 1990).

Setting

Old Dominion University is a large, public university in Norfolk, Virginia. It was founded in 1930 as a division of the College of William and Mary, and became an independent institution in 1962 and a university in 1969. Old Dominion University has a diverse student body learning alongside an award-winning faculty in 70 undergraduate programs. In 2007 Old Dominion University admitted 2,058 freshmen students. Of these total 1,496 freshmen students were retained, giving Old Dominion University a 72.7% retention rate according to the State Council for Higher Education for Virginia (SCHEV). Old Dominion University has a commitment to retention of college students as does all the educational institutions in the state of Virginia. The State Council for Higher Education for Virginia mandates that "educational institutions improve student retention such that students progress from initial enrollment to a timely graduation, and that the number of degrees conferred increases as enrollment increases".

PURPOSE OF THE STUDY

The purpose of this mixed method model research design will be to explore if the use of a brief written intervention using self-affirmations will improve the academic performance of a sample freshmen students.

RATIONALE

Expressive writing is a brief writing intervention that has shown positive outcomes on a variety of subjects for a variety of conditions. For example, significant benefits have been found for students' grade point average (Pennebaker & Francis, 1996;

Cameron & Nicholls, 1998; Cohen et. al. 2006, and Wilson, 2006); working memory (Klein & Boals, 2001); self-reported health outcomes (Cameron & Nicholls, 1998; Park & Blumberg, 2002); and medical conditions (Symth 1998; Rosenberg et. al. 2002). Most research has involved subjects writing about traumatic, stressful or emotional events for 15-20 minutes (the maximum) over 3-5 days. In contrast, the studies by Wilson (2006) and Cohen et.al, (2006) used self-affirmations for writing. In this study, I believe that a brief writing intervention using self-affirmations will improve the academic performance and physical health of a sample group of college freshmen students.

THEORETICAL FOUNDATION

Boulter (2002) showed that "self-concept" was a predictor of college freshman academic adjustment. She relates that the terms self-concept, self-perception or self-worth are all interchangeable with the concept of self-esteem (Byrne, 1996). In understanding how self-esteem can predict academic success researchers have looked at the theory of social psychology. Gordon All port's definition of social psychology states"...an attempt to understand and explain how the thought, feelings, and behavior of individuals are influenced by the actual, imagined, or implied presence of others" (Allport, 1954).

Wilson (2006) and Cohen et al (2006) describe how a brief theory -based intervention of expressive writing improved students' grades. Social psychological theory is used to explain the self-perpetuating "exacerbation cycle" that leads to poor performance for some students, and seems to be especially relevant for minority students. The exacerbation cycle follows the following pattern; poor performance confirms self-

fear about adequacy -anxiety increases-future and subsequent performance is affected -

results confirm fears. These studies provided evidence that psychological threat can be

lessened by affirmations of personal adequacy or self-integrity.

In understanding the concept of "stereotype threat" Claude Steele took a look at

how dealing with stereotype threat for college students that are minorities can perpetuate

increased anxiety about confirming to a negative stereotype about one's group. The

theory proposes that self-perceptions are internalized on personal interpretations of the

social world and their place in it, and how they perceive that others view them. Thus,

there can be damaging effects of stereotype about one's group on individual performance

(Steele, 2002).

OVERVIEW OF STUDY

The participants of this study will be a sample of freshmen students at Old

Dominion University in the University 110 (Academic Success) class. Old Dominion

University is committed to assisting students in achieving their academic goals.

Therefore, freshman students on academic warning are required to participate in a

success program sponsored by University College in their next semester of attendance.

The subjects for this study therefore are third semester freshmen students. University

College coordinates the academic services designed to ensure student success and

enhance undergraduate retention. These services include orientation, placement testing,

academic advising, parent programs, mentoring and tutoring, learning communities,

career management, experiential learning evaluation, development course offerings,

academic continuance, transfer student services and student success programs.

Freshmen students will be randomly assigned to either the experimental group, control group, or the no writing group. This proposed study intends to use the self-affirmations directions for the experimental group's expressive writing, and the control group will be instructed to write about their goals and objectives for the future. The third group will not do any writing and will only complete the demographic survey and the pre and post test for the instruments. Both the experimental and control groups will write for 15 minutes each day for three days. Each participant will be asked to complete a short demographic survey used to gather information about, age, gender, race/ethnic group, highest education for mother and father, number of siblings, if first generation college attendee , and proposed or actual major. Four instruments will be used pre and post expressive writings:

1 .Pennebaker Inventory of Limbic Languidness (PILL) (Pennebaker, 1982). This is a 54-item scale which taps the frequency of occurrence of a group of common physical symptoms and sensations.

2. College Adjustment Test (CAT) (Pennebaker, 1990) this 19-item survey taps the degree to which students have experienced a variety of thoughts and feelings about being in college.

3..Multiple Affect Adjective Check List (MAACL-R), Zuckerman and Lubin (1980) developed the MAACL to measure anxiety either as a state, a trait, or something intermediate such as daily, weekly, or monthly level. The test form is a single sheet with 132 adjectives. Participants are to check the box in front of the adjective that describes

their feelings. Five unique scales are scored: Depression, Anxiety, Hostility, Positive Affect and Sensation Seeking.

4. The Adjective Check List (Gough, 1980) will be administrated to each participant. The Adjective Checklist consists of 300 adjectives and adjectival phrases that are used to describe a person's attributes. The ACL consists of 300 adjectives comprising 37 scales that include measures of psychological needs based on Murray's (1938) needs. Fifteen scales assessing psychological needs or wants are provided including Achievement, Dominance, Endurance, Order, Intraception, Nurturance, Affiliation, Heterosexuality, Exhibition, Autonomy, Aggressions, Change, Succorance, Abasement, and Deference.

5. College Activities and Behavior Questionnaire this questionnaire is a general inventory of objective behaviors and activities commonly performed by students. Most behaviors reflect social activity and health-related behaviors.

The Adjective Checklist (ACL) will only be used once to assess personality characteristics associated with academic performance.

RESEARCH DESIGN

The proposed study will use mixed-model research design that utilizes a repeated measures experimental design and content analysis. The repeated measure experimental data will be used to investigate if there is a significant difference between the

experimental group, control groups and the no writing group, and the pre and post intervention on scores obtained on the CAT, MAACL, PILL, ACL, and CABQ. Participants will be randomly assigned to the experimental group, control group or no writing group. Participants will be equally distributed among the three groups with projected number of participants to be 255 total participants. There are 17 sections in the University 110 class with 15 students in each class ($n=85$ experimental group; $n=85$ control group, and 85 no writing group). Due to random assignment into groups, there is a possible confound of groups differing on the demographic variable of interest (e.g., racial/ethnic group).

Data analysis will be conducted using SPSS Data Analysis System. The dependent variable will be Grade Point Average (GPA) and the independent variable will be scores obtained from the five instruments pre and post test and the information obtained from the demographic survey. The nominal data from the demographic survey will be coded based on the grouping variables. The grouping variables are gender, race/ethnic, first time college attendee, experimental, control and no writing group and pre and post test of the MAACL-R, CAT, PILL, ACL, and CABQ. Statistical analyses will include an MANOVA between experimental, control, and no writing groups on pre and post assessment instruments. Multiple step-wise regression analyses will be conducted to determine which variables contribute to the prediction of grades, physical symptoms, and college adjustment.

A content analysis from the obtained writing samples will be conducted utilizing the Linguistic Inquiry Word Count (LIWC2001). Research has shown the way that individuals talk and write provide windows into their emotional and cognitive worlds.

Studies done by Gottschalk, Glaser, 1969, Rosenberg, Tucker, 1978, and Stiles, 1992 suggest that people's physical and mental health can be predicted by the words they use. A large number of studies have found that having individuals write or talk about deeply emotional experiences is associated with improvements in mental and physical health (e.g., Pennebaker, 1997, Smyth, 1997).

Text analyzed in these studies indicated that those individuals who benefit the most from writing tend to use relatively high rates of positive emotion words, a moderate number of negative emotion words and most importantly an increase number of cognitive or thinking words from the first to the last days of writing (e.g. Pennebaker, Francis, 1996, Pennebaker, Mayne, Francis, 1997). Linguistic Inquiry and Word Count (LIWC) was used for the content analysis of these writing tasks. LIWC analysis has demonstrated good internal consistency across different writing samples and topics and external validity is demonstrated by high correlations between independent judges' ratings of written text and the LIWC output. People's word usage patterns measured by LIWC2001 satisfy the basic psychometric requirements of stability over time and consistency across context (Balke, Wilhelm, Johnson, Boskovic et.al. 2006).

The LIWC2001 Dictionary is composed of 2,290 words and word stems. Each word or word-stem defines one or more word categories or sub dictionaries. For example, the word 'cried' is part of four word categories: sadness, negative emotion, overall affect, and a past tense verb. Hence, if it is found in the target text, each of these four sub dictionary scale scores will be incremented. As in this example, many of the LIWC2001 categories are arranged hierarchically. All anger words, by definition, will be categorized

as negative emotion and overall emotion words. Each of the 74 preset LIWC2001

categories is composed of a list of dictionary words that define that scale.

RESEARCH QUESTION

1. Can a short expressive writing intervention improve academic performance and reduce

physical health complaints for a sample of third semester freshmen students?

LIMITATIONS

1. Students enrolled in Academic Success classes not the general student body.

2. The effects of different abilities, courses and their requirements, and different

instructors and instructional styles.

3. Academic performance is limited to overall GPA and performances in two subject

areas, English and Mathematics.

ASSUMPTIONS

1. Freshmen students at Old Dominion University will have the same responses to the

interventions as did college students in previous studies

2. Reducing psychological threat positively impacts academic performance.

3. A major assumption of this study is that psychological threats play a major role in the academic performance of some freshmen students.

4. Minority and first time college attendee's previous research on expressive writing and academic performance will have validity for this study.

5. Physical health and stress play a role in academic performance and adjustment to college.

DEFINITIONS

Social Psychology: an attempt to understand and explain how the thoughts, feelings and behavior of individuals are influenced by the actual, imagined or implied presence of others.

Stereotype threat: is the fear that one's behavior will confirm an existing stereotype of a group with which one identifies. This fear may lead to an impairment of performance.

Expressive Writing: the basic format for expressive writing asks participates to write for 15 minutes each day on a topic for three days. The topics could be participant's choice, or specific topics such as cherished values, life goals, or a traumatic experience.

First generation college students: If your parents, aunts, uncles, and grandparents did not go to college, then you are a first generation college student.

CHAPTER TWO

LITERATURE REVIEW

Expressive writing is a brief writing intervention that has shown positive outcomes on a multitude of subjects for a variety of conditions. Over the last three decades, researchers have provided evidence to suggest that people's physical and mental health can be predicted by the words they use (Gottschalk & Glaser, 1969; Rosenberg & Tucker, 1978, Stiles, 1992). More recently, a large number of studies have found that having individuals write or talk about deeply emotional experiences is associated with improvements in mental and physical health (e.g., Pennebaker, 1997, Smyth, 1998). This chapter presents literature that supports the use of expressive writing to improve academic performance and physical health among college freshmen students.

Attending college for the first-time can be a time of academic and emotional adjustment for freshman students. The new demands of course requirements and developing a social support system can be seen as a "harsh" reality for some students. This difficulty in adjusting can take the form of poor academic performance and often increased medical complaints. Research has shown that freshman students experience a great deal of stress related to adjusting to college (Kadison, DiGeronimo, 2004). Although university settings are stressful for almost all students according to (Cohen et.al, 2006) for African American students the academic environment can involve an extra degree of threat not experiences by non minority students.

Expressive Writing and Academic Adjustment

Dr. James W. Pennebaker, a professor in the Department of Psychology at The University of Texas at Austin and author of several books, including "Opening Up" and "Writing to Heal," is a pioneer in the study of using expressive writing as a route to healing. His research has shown that short-term focused writing can have a beneficial effect on everyone from those dealing with a terminal illness to victims of violent crime to college students facing first-year transitions. In the book "Opening Up", Pennebaker shares his personal experience with using writing to help him overcome his own depression, and how this led him to want to understand why writing had been so helpful (p.30). Pennebaker began working with his students in an effort to identify the physical and psychological benefits of writing.

Pennebaker identified that the majority of common health problems are associated with a variety of subjective physical symptoms, including fatigue, difficulty concentrating, racing heart, shortness of breath, anxiety, headache, and upset stomach, dizziness, and muscle tension. Pennebaker looked at these symptoms in relation to traumatic experiences and symptom reporting. He concluded that when people experience a trauma in their lives and are unable to or chose not to talk about these experiences the physical symptoms may be ways individuals focus on symptoms and sensations to avoid addressing the overwhelming thoughts of emotional upheavals (Pennebaker, 1989)

Research studies have shown that there is reason to believe that when people transform their feelings and thoughts about personally upsetting experiences into language, their physical and mental health often improve (Pennebaker & Chung, 2007).

An increasing number of studies indicate that having people write about traumas can result in healthy improvements in social, psychological, behavioral, and biological measures. In their first study, people were asked to write about a trauma or about superficial topics for four days, 15 minutes per day. This research found that confronting the emotions and thoughts surrounding deeply personal issues promoted physical health, as measured by reductions in physician visits in the months following the study, fewer reports of aspirin usage, and overall more positive long-term evaluations of the effect of the experiment (Pennebaker & Beall, 1986).

The basic writing paradigm used in Penne baker's studies involved a standard laboratory writing technique and random assignment of participants to one of two or more groups. All writing groups were asked to write about assigned topics for one to five consecutive days, for 15 to 30 minutes each day. Writing was generally done in the laboratory with no feedback given. Those assigned to the control conditions were typically asked to write about superficial topics, such as how they use their time. Pennbaker and his colleagues conducted multiple studies using undergraduate students in psychology classes to learn about the effects of writing about traumatic experiences and physical health.

In studying the health benefits of writing they also explored the role of story-making. Pennebaker & Seagal (1999), found the act of constructing stories as a natural human process that helps individuals to understand their experiences and themselves. According to them this process allows one to organize and remember events in a coherent fashion while integrating thoughts and feelings. In essence, this gives individuals a sense

of predictability and control over their lives. Once an experience has structure and meaning, it would follow that the emotional effects of that experience are more manageable. Constructing stories facilitates a sense of resolution, which results in less rumination and eventually allows disturbing experiences to subside gradually from conscious thought. Painful events that are not structured into a narrative format may contribute to the continued experience of negative thoughts and feelings.

For example, Pennebaker et al. (1997) found that health improvement was associated with word use patterns indicating that the participants were creating meaningful stories. They concluded that the more participants increased their use of words having to do with gaining insight (e.g., realize, understand, reconsider, see) and words associated with causal relationships (e.g., because, reason, cause, why, thus), the more their health improved. A growing body of research suggests a lot can be learned about people's underlying thoughts, emotions, and motives by counting and categorizing the words they use to communicate. The words that reflect how people are expressing themselves can often be more informative than what they are expressing (Pennebaker & King, 1999; Pennebaker, Mehl, &Niederhoffer, 2003). Text analyses based on these previous studies indicate that those individuals who benefit the most from writing tend to use relatively high rates of positive emotion words, a moderate number of negative emotion words, and most importantly, an increasingly number of cognitive or thinking words from the first to last days of writing (e.g. Pennebaker & Francis, 1996, Pennebaker, Mayne & Francis, 1997).

In their initial experiment, Klein and Boals (2001) examined how writing about a stressful event affected working memory for 71 undergraduates. The participants

completed three 20-minute, writing sessions during a two-week period. Half were assigned to an "expressive writing" condition and were instructed to write about their deepest thoughts about coming to college. Participants in a control condition instead wrote about what they had done that day and how they might have done a better job. Using a standard test of verbal working memory, Klein and Boals measured participants working memory capacity three times: once before the first writing session, and again one week and seven weeks after the last writing exercise. The researchers also examined the content of the participants' essays, probing for "cause and insight" words such as "hence", "because' and "therefore", that might signal efforts to create a more coherent narrative out of fragmented stressful memories. Finally the researchers measured the link between working memory improvement and academic performance, using students' grade-point averages (GPAs) for the semester during which the experiment took place and the following semester. The results revealed that participants in the expressive-writing condition showed modest improvements in working memory between second and third memory tests. In contrast, control participants showed no such improvement.

In another study forty nine undergraduate students were asked to write about profound topics (e.g., highly stressful, traumatic, or guilty experiences) or trivial topics (e.g., objectively describing bedroom or dorm room for 15 minutes per day on 4 days during a 2-week period to assess if writing autobiographical essays could lessen suicidal thinking. Both groups completed pre-test, post-test and 6-week follow-up measures of suicidal thinking and mood, and self- reported health-center visits at pre-test and follow-up. No significant differences were found between groups on suicidality or mood.

However, the group that wrote on the profound topics reported a reduction in the number

of health center visits from pre-test to follow-up (Range & Kovac, 2002).

In this study the MAACL-R was used to assess mood pre-test and post-test. The

Multiple Affective Adjective Check List-Revised (MAACL-R; Zuckerman & Lubin,

1985) is a 132-adjective check list. Participants check all of the adjectives that describe

how they "generally feel" (e.g., energetic, gloomy, thoughtful). The five basic subscales

are Anxiety, Depression, Hostility, Positive Affect, and Sensation Seeking. The

MAACL-R also has two subscales: Dysphoria, which is the total of Anxiety, Depression,

and Hostility; and PASS, a total of positive affect and sensation-seeking. The internal

reliabilities for the subscales are reported to be moderate (alpha ¼ .80 or higher) for 70%

of the coefficients (Lubin et al., 1986). Positive Affect, Dysphoria, and PASS have the

highest internal reliabilities, whereas Sensation Seeking has the lowest internal

reliabilities (Lubin et al., 1986). The MAACL-R is reported to have good discriminant

validity:

Pennebaker and his colleagues initially used judges to count words and word

patterns in the themes of essays. They later advanced to the creation of a software

program to analyze words and word pattern. One of the first tests of the validity of the

LIWC scales was undertaken by Pennebaker and Francis (1996) as part of an experiment

in which first year college students wrote about the experience of coming to college.

During the writing phase of the study, 72 Introductory Psychology students met as a

group on three consecutive days to write on their assigned topics. Participants in the

experimental condition (n = 35) were instructed to write about their deepest thoughts and

feelings concerning the experience of coming to college. Those in the control condition

(n = 37) were asked to describe any particular object or event of their choosing in an unemotional way.

After the writing phase of the study was completed, four judges rated the participants' essays on various emotional, cognitive, content, and composition dimensions designed to correspond to selected LIWC Dictionary scales. Using LIWC output and judges' ratings, Pearson correlation analyses were performed to test LIWC's external validity. These findings suggest that LIWC successfully measures positive and negative emotions, a number of cognitive strategies, several types of thematic content, and various language composition elements. The level of agreement between judges' ratings and LIWC's objective word count strategy provides support for LIWC's external validity.

Since Pennebaker's original study research has shown that the use of a brief writing intervention has been beneficial in other aspects such as health related issues. Zakowski, S. G., Ramati A., Morton, C., Johnson, P. and Flanigan, R., (2004), used a brief writing intervention to show health benefits for patients with cancer. Warner, L.J., Lumley,M.A., Casey, R.,J., Pierantoni,W., Salazar,R. et.al (2006) , used a brief writing invention to test the effects of written emotional disclosure on the health of adolescents with asthma.. Research has also shown that a brief writing interventions of expressive writing has been used to decrease stress in caregivers of children and adolescents chronic illness, Schwartz,L.,Drotar, D. (2004), Rude, S.S., Gortner, E.M., Pennebaker,J.W., (2004) used expressive writing to identify language use of depressed and depressed vulnerable college students. McGuire, K.M., and Greenburg, M.A., Gervirtz,(2005) used the autonomic effects of expressive writing in individuals with elevated blood pressure,

and Lumley, M.A., Provenzano, K. M. (2003) showed how stress management through emotional disclosure improved academic performance among college students with physical symptoms.

In one study examining adjustment to college, Cameron and Nicholls (1998) had participants previously classified as dispositional optimists or pessimists write in one of three conditions: a self-regulation condition (writing about thoughts and feelings towards coming to college and then formulating coping strategies), a disclosure condition (writing about thoughts and feelings only), or a control task (writing about trivial topics). Overall, participants in the disclosure task had higher GPA scores at follow-up, but only those in the self-regulation task experienced less negative affect and better adjustment to college over the control participants. Optimists visited their doctors less in the following month if they had participated in either of the experimental writing conditions. On the other hand, only pessimists in the self-regulation condition had significantly fewer visits to the doctor after the study. With the added encouragement of formulating coping strategies, pessimist may be able to reap the same health benefits from writing about their thoughts and feelings as optimists naturally do.

Research has shown that there are many factors associated with poor academic performance for some college freshmen students (Russell & Petrie, 1992). Parental support along with parent's education, social support, institution support, emotional and personal factors and achievement gaps all play important roles in academic success for college freshmen students. The first year of college has been identified as the most critical period because it shapes student's chances for later success, with success being defined as positive adjustment to the new academic, social, professional, and personal

challenges that accompany enrollment in college (Upcraft, & Gardner, 1989). Academic adjustment, or how well students deal with educational demands, includes motivation to complete academic work, success in meeting academic requirements, academic effort, and satisfaction with the academic environment (Baker & Siryk, 1989).

Several studies have examined the role of individual and environmental predictor variables in order to gain a better understanding of academic adjustment during a student's first year in college. Research has demonstrated that ACT scores, problem-solving abilities, emotional stability, and intellect are significant predictors of academic adjust during that first year (Brooks & DuBois, 1995). Russell and Petrie (1992) organized research in the area of academic adjustment and success that is based on multiple predictor and outcome variables. In their model, factors predictive of academic adjustment are divided into three major content areas: academic, social/environment, and personality. Academic factors include a number of variables directly related to academic performance such as aptitude and ability, study skills, and text anxiety, academic motivation, self-efficacy and attribution. Social/Environmental factors affecting academic adjustment include life stress, and social support, campus environment, work involvement, family variables, and academic environment. Personality factors predictive of academic adjustment include personality measures, locus of control, self-esteem, and trait anxiety.

Academic Factors

For most college students, the transition to the college classroom requires an adjustment of academic habits and expectations. They often must study harder, improve

their study habits, and take school more seriously. Classes are larger, instructors have differing teaching styles, the pace is faster, and written work is more frequent, reading assignments are lengthier, standards are higher, and the competition is more acute. A common outcome measure of academic adjustment is the overall (or cumulative) grade point average. Larose and Roy (1991) determined that high school GPA was the most effective predictor of first semester college GPA for their sample of 1, 235 students. Students who remain in college typically have achieved an acceptable grade point average according to traditional standards as well as their own expectations.

Grades are one measure of the extent to which the student has adjusted to the academic setting (Ratcliff, 1991). Also, academic performance, especially the first semester GPA, has been shown to be a significant predictor of freshmen retention (McGrath & Braunstein, 1997). Another important factor may be how realistic students are about their academic ability. Studies have shown that students who began their first year of college with an unrealistically high evaluation of their ability demonstrated a negative relationship between their self-concept and GPA. Of those who were academically successful, most had a realistic assessment of what they could and could not do (Fletcher, McGuire, Dziuban & Warren, 1997; Ratcliff, 1991).

Low- income and minority students frequently must overcome challenges posted by social and structural barriers to higher education not experienced by other students. Regarding academic preparation, low-SES and minority students often bring fewer academic resources to college. This is often because they are less likely to have been exposed to a rigorous high school curriculum, more likely to have lower scores on admission tests, have lower rank in their class, and lower GPAs (Terenzini et al., 2001).

A substantial amount of educational and psychological research has consistently demonstrated that African American students underperform academically relative to White students.

For example, they tend to receive lower grades in school (Demo & Parker, 1997), score lower on standardized tests of intellectual ability (Herring, 1989), drop out at higher rates (Steele, 1992), and graduate college with substantially lower grades than White students (Nettles, 1988). Such performance gaps can be attributed to any number of factors, such as socioeconomic status, academic preparation, and educational opportunities; however, Steele (1997) pointed out that even when background factors are held constant, subsequent achievement remains lower for minority students. There is no single reason for the achievement gap between Black and White students. Racial and cultural bias contribute to this gap, however it is likely that even more subtle forces are also at work.

A socio- environmental perspective to explain this gap, first proposed by social psychologist Steele& Aronson (1995), focuses on the negative effects of group stereotypes on scholastic performance. They proposed the notion of "stereotype threat" to account for the disparity in academic success, for which they argued that negative stereotypes about a group can have a detrimental impact on the performance of individuals within the group when they are put in the position of potentially confirming the stereotype. Steele & Aronson further demonstrated that this threat is greatest for those individuals who identify strongly with the stereotyped domain, or the academic domain in the case of African American students. Belief in the validity of the stereotype is not a

necessary condition for the threat to actualize, as long as the threat is known by members of the marginalized group.

Although Steele & Aronson's (1995;Steele, 1997) findings were actually in reference to African American students' standardized test performance, numerous studies have revealed that this stereotype threat affects not only African Americans, but also other ethnic minority groups with similar stereotypes, such as Latinos (Schmader & Johns, 2003). The threat has also been found to affect women's mathematical performance, given the prevalent stereotype that women underperform compared to men in the domain of mathematics (O'Brien & Crandall, 2003). Additionally, recent research has used the stereotype threat framework to investigate the potential consequences of social context on older adults' memory performance (Erber, 1999). The fact that stereotype threat has shown to exist across different stigmatized groups in various contexts attests both to the threat's powerful existence and detrimental consequences. While the exact reasons for these effects are not fully known, Steele 1997) hypothesized that this threat may impede upon the cognitive performance of group members by raising anxiety levels and/ or decreasing motivation. Both increased anxiety levels and decreased motivation may result in low levels of performance that conform to the stereotype's expectations.

Social Psychology studies social interaction, social processes, and the interplay between the person and society in attitudes, beliefs and socialization. More than anything else, social psychology addresses processes and sequencing: the routines of daily life such as conversations, forming impressions of people, collectivities or events, and creating and maintaining life in groups. From early infancy, humans are sociable,

motivated to form and maintain positive social bonds as an adaptive tendency in the context of evolution. These bonds often form an important part of an individual's social or group identity (Cohen, 2007). Membership in valued social groups is often a major source of individuals' sense of self-integrity. Therefore, negative characterizations of one's group can prove threatening, especially evaluative environments.

Social psychological theory is used to explain the self-perpetuating "exacerbation cycle" that leads to poor performance for some students and seems to be especially relevant for minority students. One potentially effective way to buffer people against threat and its consequences, Cohen, et al suggest is to allow them to reaffirm their self-integrity. Self-affirmations, by buttressing self-worth, can alleviate the stress arising in threatening performance situations. They can take the form of reflections on personally important, overarching values, such as the importance of family or a self-defining skill.

Cohen et al., (2006) conducted research that studied whether self-affirmation intervention designed to lessen these threats would enhance the academic achievement of negatively stereotyped minority students. The intervention was based on three assumptions: First, people are motivated to maintain self-integrity; second, because group memberships are important source of self-integrity, negative group characterization can pose a chronic threat to self-integrity; third, such a threat, if too severe, can undermine performance. They conducted their writing intervention with middle school students. Their findings showed that the intervention benefitted the targeted students, including those most at risk, reducing group inequality while not adversely affecting non targeted students.

Social /Environmental Factors

Social support is one of the most important protective factors for undergraduates (Tao et al., 2000). Social support includes social resources that individuals perceive to be available or that are actually offered to them by helping relationships (Cronkite & Moos, 1995).Perceived social support is one of the most commonly used measures of social support. Perceived social support is a person's perception of the availability of support from others (i.e., family and friends) and captures the complex nature of social support including both the history of the relationship with the individual who provided the supportive behavior and the environment context (Hobfoll & Vaux, 1993).

As a growing population, first generation students represent a unique group with distinct goals, motivations, and constraints. Ayala and Striplin, (2002) found that, for first generation students the motivation to enroll in college is a deliberate attempt to improve their social, economic and occupational standing. These students often face unique challenges related to their academic success. First- generation students are likely to enter college, being less academically prepared, and have less limited resources available to them to obtain information about the college from experiences either first hand or from relatives (Thayer, 2002). Families of first generation students sometimes discourage them from going to college and this can lead to alienation from family support. First-generation students are also susceptible to doubts about their academic and motivational abilities (Striplin, 1999).

In a study done by Yazedjian et.al (2005) first year students at a 4-year public university completed an online survey during the second-semester of their first year. A total of 22 students participated in six focus groups. The focus groups were split according to ethnic group membership and parents' education. Some of the themes of the focus groups were ways these students described parental support. Students shared that financial and emotional support was factors associated with parental support. The students in the focus groups that were first generation students shared how they felt that their parents did not understand the complexity of college life. Similarly, in a study done by Hertel (2002) this study also looked at generational status of college students. This study looked at the similarities and differences between 130 college freshmen identified as first or second generation college students. The study showed that first generation college freshmen showed significant less parental support and social adjust.

Personality and Psychosocial Factors

The psychological characteristics of the student have a major impact on both academic and social integration (Tinto, 1993). However, traditional psychological models have provided little utility in directly predicting academic success or departure from personality traits (Tinto 1993). Furthermore, attempts to correlate personality inventories with direct measures of academic success or persistence have produced inconsistent profile types (Tinto, 1993; Pascarella & Terenzini 1991). Psychological theories of departure invariably see student departure as reflecting a shortcoming or weakness in the individual, ignoring the impact of the institution on student behavior (Tinto, 1993). Such theories argue that attrition among college students could be substantially reduced by

either improvement of student skills, by the selection of individuals with "appropriate" personality traits, or both. This argument, however, is not empirically supported.

Baker and Siryk (1984) set out to assess psychological adjustment to college. They recognized the importance of psychological adjustment to college, as well as the importance of academic and social integration into college systems. To measure psychological adjustment to college they developed a set of self-report measures collectively referred to as the Student Adaptation to College Questionnaire (SACQ). The SACQ measures students' academic, social, and personal-emotional adjustment to college, as well as their level of institutional attachment. In assessing the predictive validity of the SACQ, Baker and Siryk (1989) reported consistent and significant correlations between the SACQ's academic and social adjustment scales and persistence. The SACQ has been standardized (Baker & Siryk, 1989) and the instrument is used by college counseling centers as a screening instrument to identify students who are experiencing difficulties adjusting to college.

Psychosocial factors, rather then directly impacting performance outcomes such as GPA or persistence, mediate the antecedents to these outcomes. For example, self-esteem, although not directly related to persistence, had a direct impact on three key constructs within Tinto's model, namely academic integration, social integration, and institutional commitment (Munro, 1981). Also, need for affiliation had a direct impact on social integration, and achievement need, a measure of the degree of effort and quality of effort an individual expends to surmount obstacles, was directly related to academic integration, social integration, and goal commitment (Pascarella & Chapman, 1983).

There is little evidence to support the notion that there is a unique personality profile which identifies the students who will persist in college as different from those who will withdraw (Ratcliff, 1991; Tinto, 1993). Some studies suggest, however, that specific personality characteristics may discriminate students who were academically successful from those who were unsuccessful. A growing body of evidence indicates that one of the most predictive factors of academic adjustment is self-esteem, a term often used interchangeably with self-concept, self-perception or self-worth (Byrne, 1996). Self-esteem is a positive or negative attitude toward oneself (Rosenberg, 1965) and the personal judgment of worthiness. Some studies report that a sense of self-confidence, enhanced in part by informal contacts with faculty, predicts academic adjustment and persistence (Cohorn & Giulliano, 1999; Gerdes & Mallinckrodt, 1994).

Self-esteem is negatively correlated with loneliness (Ginter & Dwinell, 1994) which, in turn, predicts student adjustment (McWhirter, 1997). Students who had difficulty meeting people and making new friends or who tended to cope with difficult situations by isolating themselves had more difficulty adjusting than those who were more social (Tinto, 1993). Aspinwall and Taylor (1992) reported that the beneficial effects of self-esteem on academic adjustment during the freshman year were mediated by the tendency to use active coping instead of avoidance coping, and the greater use of social supports. The results of their 2-year follow up revealed that self-esteem and a sense of psychological control predicted greater motivation to achieve and higher grades.

Summary

Attending college can be a stressful time for college freshmen. Research has shown that college freshmen experience stress related to multiple factors. This stress can impact academic and emotional performance. Academic success for this population hinges on identifying these sources of stress and offering successful interventions. This study will look the factors associated with a sample of third semester freshmen students that are on academic probation due to poor academic performance. This study will look at if being a first generation attendees', stereotype threat, gender, highest completed grades of parents and scores on research instruments are factors related to academic performance. We predict that the use of an expressive writing intervention focusing on self- affirmations will increase academic performance and improve physical health.

CHAPTER THREE

METHODOLOGY

Introduction

The purpose of this study was to explore if the use of the expressive writing intervention pioneered by Pennebaker (1987) will have a positive effect on the academic performance of a group of third semester freshmen at Old Dominion University. Research has shown that there are many factors associated with poor academic performance for some college freshmen students (Russell & Petrie, 1992). Parental support along with parent's education, social support, institution support, emotional and personal factors and achievement gaps all play important roles in academic success for college freshmen students. The first year of college has been identified as the most critical period because it shapes student's chances for later success, with success being defined as positive adjustment to the new academic, social, professional, and personal challenges that accompany enrollment in college (Upcraft, & Gardner, 1989). Academic adjustment, or how well students deal with educational demands, includes motivation to complete academic work, success in meeting academic requirements, academic effort, and satisfaction with the academic environment (Baker & Siryk, 1989).

Russell and Petrie (1992) organized research in the area of academic adjustment and success that is based on multiple predictor and outcome variables. In their model, factors predictive of academic adjustment are divided into three major content areas: academic, social/environment, and personality. Academic factors include a number of

variables directly related to academic performance such as aptitude and ability, study skills, and text anxiety, academic motivation, self-efficacy and attribution. Social/Environmental factors affecting academic adjustment include life stress, and social support, campus environment, work involvement, family variables, and academic environment. Personality factors predictive of academic adjustment include personality measures, locus of control, self-esteem, and trait anxiety.

Research Question:

Can a short expressive writing intervention improve academic and reduce physical health complaints for a sample of third semester freshmen students?

Research Design:

The study proposed to use a mixed model research design. Creswell (2003) states" the researcher bases the inquiry on the assumption that collecting diverse types of data best provides an understanding of a research problem". A mixed methods design is useful to capture the best of both quantitative and qualitative approaches. In quantitative research the researcher's goal is to disprove a null hypothesis through manipulating and controlling variables, transforming data into numbers, analyzing results statistically and attempting to generalize the results to the members of the population being studied.

Qualitative research encompasses several approaches to research that are in some respect quite different from one another. Yet all qualitative approaches have two things in common. First, they focus on phenomena that occur in natural settings-that is the "real

world". And second they involve studying phenomena in all their complexity. "The researcher recognizes that the issue they are studying has many dimensions and layers, and so they try to portray the issue in its multifaceted form" (Moustakas, 1994,). The method of choice for this research will be a content analysis of the brief written interventions.

In a study aimed to investigate the effectives and acceptability of a brief expressive writing intervention, for high- risk drug dependent patients in a primary care clinic. Participants were recruited from a comprehensive medical, counseling and social welfare service providing methadone access and needle syringe exchange for at-risk youth, sex workers and injecting drug users with a street-based lifestyle, in Kings Cross, Sydney, Australia. Fifty three participants were recruited. Participants completed four 15-minute expressive writing tasks over a week, in which they described their thoughts and feelings about a recent stressful event. Self-report measures of physical and psychological health were completed at baseline and at a two week follow-up. Linguistic Inquiry and Word Count (LIWC) was used for the content analysis of these writing tasks. LIWC analysis has demonstrated good internal consistency across different writing samples and topics and external validity is demonstrated by high correlations between independent judges' ratings of written text and the LIWC output. People's word usage patterns measured by LIWC2001 satisfy the basic psychometric requirements of stability over time and consistency across context (Balke, Wilhelm, Johnson, Boskovic et.al. 2006).

In a study done by Epstein, Sloan, and Marx,(2006) they looked at content analysis of a written disclosure using 94 college students with a mean age of 20.9 years (SD=4.8). Participants were randomly selected (with in gender) to either the written

disclosure condition (n=51) or the control writing condition (n=43). The participants assigned to the written disclosure group wrote about highly personal and upsetting experiences. The written essays for each session were converted to a computer text file, and the linguistic analysis of these text passages was conducted using the LIWC2001. The linguistic indices examined in this study were negative emotion (e.g., sad, afraid, hate, worthless), positive emotion (e.g., happy love, pride), and insight/causality (e.g., think, know, because). These categories were selected based on anticipated gender differences in word use.

(Pennebaker, Colder and Sharp, 1990), utilized content analysis to identify the characteristics of the essays of one hundred thirty students recruited from two large introductory psychology courses. They wrote about coming to college or superficial topics. Three independent judges checked whether each essay dealt with each of the 30 different categories All essays were coded for raw number of words and percentage of total words that were personal self-references, negations such as not and no, positive emotion words, negative emotions words, and mark-outs. The means of the various word categories were subjected to 2(condition) x 4 (wave) between -subject analysis of variance (ANOVAS). There we no differences in raw number of words or number of mark-outs, subjects in the experimental condition used more personal self-references (11.8% vs. 8.5%), $F(1,119) = 41.6$, $p<.01$;negations (2.2% vs. 0.4%, $F(1,119) = 196.8$,$p<.01$;positive emotion words (0.30% vs. 0.04%), $F(1,119) = 62.5$,$p<.01$; and negative emotion words (1.0% vs. 0.2%), $F(1,119) = 64.9$, $p<.01$, than subjects in the control condition.

Hypotheses:

1. There will be no significant difference in academic performance as measured by first semester GPA between experimental group, control group and no-writing group.

2. There will be no significant difference between the experimental group, control group, and no-writing group for ratings on the College Adjustment Test. (CAT)

3. There will be no significant difference between the experimental group, control group and no-writing group for ratings on the Pennebaker Inventory Limbic Languidness test. (PILL)

4. There will be no significant difference between experimental group, control group and no-writing on the College Attitude and Behavior Questionnaire. (CABQ)

5. There will be no significant difference between experimental group, control group and no-writing group on the Multiple Affect Adjective Check List (MAACL-R) pre-test.

6. There will be no significant difference between the experimental group, control group and no-writing group on the topical scales of the Adjective Check List that measure self-confidence, self-control, personal adjustment, ideal self, creative personality, military leader, masculine, and feminine.

7. There will be no significant difference among racial /ethnic groups the Multiple Affect Adjective Checklist (MAACL-R).

8. There will be no significant difference among racial/ethnic groups on the College Adjustment Test (CAT).

9. There will be no significant difference among racial/ethnic groups on the College Activities and Behavioral Questionnaire (CABQ).

10. There will be no significant difference among racial/ethnic groups on the Pennebaker Inventory Limbic Languidness (PILL).

Procedure

1. The proposal was sent to the Protection of Human Subjects Review Committee for permission to conduct this study.

2. Appropriate informed consents were obtained and subjects were placed in the experimental group, the control group or no writing group by random assignment. It was anticipated that there would be a minimum of 85 experimental subjects, and 85 control group subjects and 85 no writing group subjects.

3. Packets of writing directions, writing paper, and pre-test instruments were prepared.

4. The researcher attended a class meeting arranged in advance with the course instructor where the packets were distributed and instructions for writing provided. The experimental group was asked to write on their values (see the following instructions), and the control group was asked to write on a neutral topic for 15 minutes the first day, a packets of directions and paper for writing 15 minutes the second day to return to the researcher on the third day when the third writing experience would take place and the post-test assessments given.

5. The essays were collected. No course instructor had access to the essays, and these were all kept confidential.

6. There was to be a follow- up approximately one month later to gather information about the impact of the writing experience, to re-assess physical symptoms via the PILL, and affect states via the MACCL-R.

The experimental group students were given self-affirmation directions of the following:

You will be asked to write about your deepest held and most cherished values. Describe how these have affected your life, and in your writing, explore your deepest emotions and thoughts. You might tie your topic to your relationship with others, including parent, lovers, friends, or relatives: to your past, your present or your future: or to who you have been, who you would like to be or who you are now. You may write about the same topic on all days, or write about a different topic each day. All of your writing will be completely confidential. Don't worry about spelling, grammar, or sentence structure. The only rule is that once you begin writing, you continue until time is up.

The control group received the following directions.

You asked to write about your future life goals, and likelihood of achieving these. You may write about the same topic on all days, or write about different topics each day. All of your writing will be completely confidential.

Don't worry about spelling, grammar, or sentence structure. The only rule is

that once you begin writing you continue until time is up.

Both the experimental and control groups were to write for 15 minutes each

day for three days. The no writing group was asked to complete only the pre

and post instruments, the Adjective Check List (ACL) and demographic

survey.

Research Instruments

Each subject was asked to complete a short demographic survey used to gather

information about age, gender, race/ethnic group, highest education for mother and

father, number of siblings, if first generation college attendee, and proposed or actual

major. The survey was constructed with an area for each participant to mark their

answers with a check mark or blank space. Four instruments were used pre and post

expressive writing. The Adjective Checklist (ACL) was used once to assess personality

characteristics associated with academic performance.

1 .Pennebaker Inventory of Limbic Languidness (PILL) (Pennebaker, 1982). This

is a 54-item scale which taps the frequency of occurrence of a group of common physical

symptoms and sensations. Cronbach alpha ranges from .88 to .91, 2 month test-retest

reliability range from .79 to .83. The PILL has high construct validity when compared

with other measures of anxiety and physical symptom self-reports as shown in a research

study of effects of disclosure of traumatic events on illness behavior among psychiatric

prison inmates (Richards, Beal, Seagal & Pennebaker, 2000). In this study fifty nine male

maximum-security psychiatric inmates (mean age =35.4 years, SD=9.5 from a prison in

the Midwest were randomly assigned to write for 3 days about either traumatic

experiences (n= 33) or superficial topics (n=26) for 15 minutes per day. Participants had

a minimum of a sixth grade education (mean education=12.3 years, SD=2.4). Number of

infirmary visits in the 2 months and the 2 months after writing served as the dependent

measure. There was a main effect for the PILL: Sex Offenders reported fewer symptoms

than non-sex offenders, F (1, 94 =7.43, $p<.01$.

For 3 days 74 first year undergraduates enrolled in an introductory psychology

class (35 male, 39 female: mean age = 17.9 years SD + 0.4) wrote about their deepest

emotions about coming to college (n =35) or, in the control condition, wrote non

emotional descriptions of their daily activities (n = 39). The sample consisted of

participants who completed all questionnaires at baseline and at follow-up. Data on

health-center visits for illness were collected from the university health center, and the

mean number of visits per month was calculated for the 2 months prior to writing and the

4 months after writing (Pennebaker, Francis, 1996).

(Epstein, et.al. 2006), utilized the PILL in a study with 94 college students as

participants where their aim was to investigate gender differences in written disclosure.

Participants were asked to write stories related to their lives over three sessions with a

follow-up 1 month later. A significant writing by time interaction was found (F [1, 90]

=17.56, $p<.01$, r effect size =0.40), but there were no other significant main or interaction

effects. Follow-up tests of simple main effects indicated that the disclosure participants

reported fewer physical complaints at follow-up relative to the control participants

($p<.01$, r effect size =0.322. For the disclosure participants, the change in physical symptoms over time did not differ between men and women.

2. College Adjustment Test (CAT) (Pennebaker, 1990) this 19-item survey taps the degree to which students have experienced a variety of thoughts and feelings about being in college. Cronbach alpha = .79; 2 month test-retest =.65. Three stable factors have emerged that tap general negative affect, positive affect or optimism and home sickness. In a research study using one hundred and thirty subjects who wrote about coming to college or about superficial topics, the CAT was used to measure adjustment to college. On the basis o f two samples of 287 and 260 entering college students, the internal consistency of the scale was Cronbach alpha =.79. Two-month test-retest with 196 introductory college students was good, r=.65(Pennebaker, Colder, Sharp, 1990).

3. Multiple Affect Adjective Check List (MAACL-R), Zuckerman and Lubin (1985) developed the MAACL to measure anxiety either as a state, a trait, or something intermediate such as daily, weekly, or monthly level. The test form is a single sheet with 132 adjectives. Participants are to check the box in front of the adjective that describes their feelings. Five unique scales are scored: Depression, Anxiety, Hostility, Positive Affect and Sensation Seeking. . These are then combined into higher order affects. The first is Dysphoria, which is the sum of the first three scales (Anxiety, Depression, and Hostility). The second is Well-being which is the sum of the final two scales (Positive Affect and Sensation Seeking). Cronbach alpha internal consistency reliability estimates for the state form across nine samples are all high and above .70.

The State Form of the MAACL-R internal consistency measures for seven non-referred and two referred groups ranged from .62 to .95. The groups varied in size from 237 to 1,392 for the non-referred groups and from 105 to 126 for the referred group. On the Trait Form the range was .69 to .95 for four non-referred groups. The sizes ranged from 858 to 1,543 and three referred groups, sizes ranged from 48 to 109). With the State Form the test-retest reliability estimates were low, ranging over studies from-.08(college students) for Hostility over a 5-day interval to .53 for Dysphoria over a 1-day interval (female normal adults). The Trait Form, the test-retest reliabilities was shown from .10 for Hostility over a 2-week interval (college students) to .92 for Sensation Seeking over a 6-week interval.

Research suggest that the State Form scales show evidence of convergent and discriminant properties for a variety of samples. The State Form scales evidence convergent and discriminant properties for a variety of samples over a range of instruments-including those that measure similar constructs such as the State-Trait Personality Inventory, (Spielberger, 1980), those that measure extensions of the construct for example, Profile of Mood States (McNair, Lorr, & Droppelman, 1971) Toronto Alexithymia Scale, (Taylor, Ryan, & Bagby, 1985); and the Affect Intensity Measure, (Larsen, Billings, & Cutler, 1996), along with Likert-like 1-5 self-ratings of adolescents and community college students. The State Form scales also are sensitive to a large variety of status changes, induced anxiety, psychiatric status (Lubin, Van Whitlock, Thieszen, & Leak, 1997), and predictive of dropout status in Air Force basic training (Lubin, Fiedler, & Van Whitlock, 1999).

The Trait Form scales were found to agree only moderately with all of the corresponding State Form scales except for PA and PASS scales, which yielded high correlations among college students. Good convergent and discriminant properties are reported with Likert-like self-ratings among referred samples (Zuckerman & Lubin, 1985), peer ratings of male veterans, counselor Likert-like ratings (moderate relationships), and instruments that measure related constructs among adolescents (cf. the Piers-Harris Children's Self-Concept Scale, Piers, 1984). Equivocal results are reported for correlations with corresponding scales of the Profile of Mood States (McNair, Lorr, & Droppelman, 1971). Good convergent and discriminant properties are reported with a variety of instruments that are theoretically related to the Trait Form constructs, and with self-reported social activities. The Minnesota Multiphasic Personality Inventory scales (Hathaway & McKinley, 1943) converge with the Trait Form better than with the corresponding scales of the State Form among three referred groups, and provide discriminant validity evidence for the PA, SS, and PASS scales. Scale differences were reported among depressed, diagnosed schizophrenic, other patients, and normals, and also between normals and a group including diagnosed anxiety disorders. Self-ratings of health were also related to the appropriate Trait Form scales (Buros Mental Measurement Yearbook, 2004).

4. The Adjective Check List (Gough, 1980) was administrated to each participant. The Adjective Checklist consists of 300 adjectives and adjectival phrases that are used to describe a person's attributes. The ACL consists of 300 adjectives comprising 37 scales that include measures of psychological needs based on Murray's (1938) needs. Fifteen scales assessing psychological needs or wants are provided including Achievement,

Dominance, Endurance, Order, Intraception, Nurturance, Affiliation, Heterosexuality, Exhibition, Autonomy, Aggressions, Change, Succorance, Abasement, and Deference. Ego functioning based on Berne's (1961) theory of Transactional Analysis, to include Critical Parent, Nurturing Parent, Adult, Free Child, Adapted Child. Creativity and intelligence based on Welsh's (1975) Origence-Intellectence concept.

These constructs are High Origence-High Intellectence, Low Origence-Low Intellectence, and Low Origence-High Intellectence. Four subtests compose the Modus Operandi Scale including variables measuring: (1) the number of adjectives checked, (2) the number of favorable adjectives checked, (3) the number of unfavorable adjectives checked, and (4) the pattern of responses (Communality). Topical scales are nine scales assessing a diverse set of attributes and role characteristics include Self-Control, Self-Confidence, Personal Adjustment, Ideal Self, Creative Personality, Military Leader, Masculine attributes, and Feminine attributes.

The normative sample consists of 4,144 females and 5,238 males. The male sample was drawn from groups of high school students (634), college students (936), graduate students (621), medical students (718), delinquents (293), psychiatric patients (50), and adults (1,986). The female sample was drawn from high school students (410), college students (1,214), graduate students (336), medical students (990), law students (52), and adults (2,092). Ages are not given in the manual for the normative sample. The reliability was shown using Alpha coefficients that were calculated from scores of 591 males and 588 females. Alpha coefficients for the males range from .56 for Change and Succorance to .95 for Favorable, with a median of .76. Alpha coefficients for females

range from .53 for Counseling Readiness to .94 for Favorable, with a median of .75. For the males, all scales except the Change and Succorance scales have alpha coefficients over .60, and, for the females, all scales except Counseling Readiness have alpha coefficients over .60. These scores fall within the range of acceptable reliability coefficients for personality measures.

Test-retest data for males was gathered in a six-month interval from a sample of 199 (99 college students and 100 military officers). Test-retest reliabilities ranged from .34 for scale A-1 (high origence, low intellectence) to .77 for aggression, with a median of .65 (10 scales had retest correlations lower than .60). Test-retest data for females was gathered in a one-year time interval from a sample of 45 college students. Correlations ranged from .45 for Femininity, A-1, and A-2, to .86 for Exhibition, with a median of .71 (nine scales had retest reliabilities below .60).

Convergent and discriminant validity information is provided in the manual via correlations of ACL scales with the California Psychological Inventory (CPI), the Minnesota Multiphasic Personality Inventory, the Terman Concept Mastery Test, and a General Vocabulary Test. These findings support the construct validity of the various scales. More recently, the ACL has been correlated with measures of the Five-Factor Model (FFM), which has been shown to provide a useful interpretive reference point for understanding the construct validity of the ACL scales (Buros Mental Measurement Yearbook 2004).

5. College Activities and Behavior Questionnaire this questionnaire is a general inventory of objective behaviors and activities commonly performed by students. Most behaviors reflect social activity and health-related behaviors.

Participants

Participants were recruited from the University 110 class of freshmen students at Old Dominion University. Old Dominion University is a large, public university in Norfolk, Virginia, a city of about 240,000 in a metropolitan area of about 1.5 million. It was founded in 1930 as a division of The College of William and Mary, and became an independent institution in 1962 and a university in 1969. More than 21,000 students are enrolled in over 165 undergraduate and graduate degree programs. The participants will be college freshmen in Academic Success program.

Data Analysis

The proposed study was to use a mixed-model research design that utilized a repeated measures experimental design and content analysis. The repeated measure experimental data was to be used to investigate if there is a significant difference between the experimental, control and no writing group's pre and post intervention on scores obtained on the CAT, MAACL-R, PILL, ACL, and CABQ. Participants were randomly assigned to the experimental, control and no writing group. Participants distributed among the three groups with the number of participants to be 122 total participants (n=23

experimental group; n=24 control group; n=75 no writing group). Due to random assignment into groups, there was a possible confound of groups differing on the demographic variable of interest (e.g., racial/ethnic group).

Data analysis was conducted using SPSS Data Analysis System. The dependent variable was Grade Point Average (GPA) and the independent variables were the scores obtained from the five instruments pre and post test and the information obtained from the demographic survey. The nominal data from the demographic survey were coded based on the grouping variables. The grouping variables were gender, race/ethnic, first time college attendee, experimental, control and no writing group and pre and post test of the MAACL-R, CAT, PILL, ACL, and CABQ. Statistical analyses included an MANOVA between experimental, control, and no writing groups on pre and post assessment instruments. Multiple step-wise regression analyses were conducted to determine which variables contribute to the prediction of grades, physical symptoms, and college adjustment.

Additionally qualitative analysis included content analysis of writing samples obtained from the experimental and control groups. The essays were analyzed using the Linguistic Inquiry Word Count (LIWC 2001). The LIWC2001 Dictionary is composed of 2,290 words and word stems. Each word or word-stem defines one or more word categories or sub dictionaries. For example, the word 'cried' is part of four word categories: sadness, negative emotion, overall affect, and a past tense verb. Hence, if it is found in the target text, each of these four sub dictionary scale scores will be incremented. As in this example, many of the LIWC2001 categories are arranged hierarchically. All anger words, by definition, will be categorized as negative emotion

and overall emotion words. Each of the 74 preset LIWC2001 categories is composed of a

list of dictionary words that define that scale (Pennebaker, Francis, Booth, 2001).

CHAPTER IV

Findings and Interpretations

The purpose of this study was to investigate if the use of Pennebaker's short-term

expressive writing intervention (1996) has a positive effect on the academic performance

of a group of third semester underperforming freshmen. Results of the short-term

expressive writing intervention were investigated using a variety of measures and

instruments. Specifically, the five assessment instruments were (1) the *Pennebaker*

Inventory of Limbic Languidness (PILL), (2) *The College Adjustment Test* (CAT), (3) *The*

Multiple Affect Adjective Checklist-Revised (MAACL-R), (4) *Adjective Checklist* (ACL),

and (5) *College Activities and Behavior Questionnaire* (CABQ) and a content analysis of

the essay. The research question that forms the framework for the study was:

Can a short-term expressive writing intervention improve academic performance,

reduce physical health complaints, and improve psychological well-being, for a

sample of third semester freshmen students participating in the University College

Academic Success Program?

Academic performance was measured by obtaining records of the participant's

overall GPA. For the purposes of this study, the physical health complaints of

participants were measured by scores on the PILL. Furthermore, psychological well-

being was measured by subscale scores on the MAACL-R. The ACL assessed personality

characteristics. College adjustment was measured by subscales on the CAT and scores on

the CABQ. The study employed an experimental design by attempting to manipulate the

dependent variable of scores obtained on the MAACL-R, CAT, CABQ, ACL and the

PILL and a systematic short-term expressive writing intervention, with an independent variable of midterm GPA. Participates were third semester underperforming freshmen students participating in the University College Academic Success Program. All procedures and measures were approved by the Institutional Review Board at Old Dominion University. All participants in this study were provided information about the research including parameters of participation and informed consent. Participants were recruited using the sections of the University 110 classes. The Participants (N=122) were assigned to the experimental group (n=23), the control group (n=24), and the non-writing group (n=75) based on what section they were enrolled in. Five sections were selected before the study began to be the experimental and control groups, all other sections were selected to be no-writing groups. Consequently, a participant had an equal chance of being assigned to the experimental group as the control group and the no-writing group for this study.

Each instructor was given individual packets for each student in their classes. Each packet contained a consent form, a demographic form, a copy of the following instruments: Multiple Affect Adjective Checklist-R (MAACL-R,) College Adjustment Test (CAT), Pennebaker Inventory of Limbic Languidness (PILL), College Activities and Behavior Questionnaire (CABQ) and the Adjective checklist (ACL). The experimental and control groups were also given instructions and writing paper in their packets. All groups filled-out and submitted a demographic questionnaire, the PILL, CAT, MAACL-R, ACL, and CABQ. Participants also completed the first day expressive writing intervention and were given instructions for the completion of the second and third day writings.

Hypotheses

1. There will be no significant difference in academic performance as measured by beginning semester GPA between experimental group students, control group students and the no-writing group students.

2. There will be no significant difference between the experimental group, control group and no-writing group for ratings on the College Adjustment Test. (CAT)

3. There will be no significant difference between the experimental group, control group and no-writing group for ratings on the Pennebaker Inventory Limbic Languidness test. (PILL)

4. There will be no significant difference between experimental group, control group and no-writing group on the College Attitude and Behavior Questionnaire. (CABQ)

5. There will be no significant difference between experimental group, control group and no-writing group on the Multiple Affect Adjective Check List (MAACL-R).

6. There will be no significant differences between the experimental group, control group and no- writing group on the topical Adjective Check List scales.

7. There will be no significant difference among racial /ethnic groups on the Multiple Affect Adjective Checklist (MAACL-R).

8. There will be no significant difference among racial/ethnic groups on the College Adjustment Test (CAT).

9. There will be no significant difference among racial/ethnic groups on the College Activities and Behavioral Questionnaire (CABQ).

10. There will be no significant difference among racial/ethnic groups on the Pennebaker Inventory Limbic Languidness (PILL).

Procedure

The Need for Confidentiality and Anonymity and how this is addressed

The instructors were instructed to collect all data for the first day and return to the investigator. Instructions for the second and third day and instruments for the third day were provided to the participants by Blackboard. Students were asked to complete the instruments on Blackboard and to e-mail the writings to the investigator. All data was coded utilizing an identifier code to address confidentiality and anonymity.

The experimental group students were provided the following instructions:

You will be asked to write about your deepest held and most cherished values. Describe how these have affected your life, and in your writing, explore your deepest emotions and thoughts. You might tie your topic to your relationship with others, including parent, lovers, friends, or relatives: to your past, your present or your future: or to who you have been, who you would like to be or who you are now. You may write about the same topic on all days, or write about a different topic each day. All of your writing will be completely confidential. Don't worry

about spelling, grammar, or sentence structure. The only rule is that once you begin writing, you continue until time is up.

The control group received the following instructions.

You are asked to write about your future life goals, and likelihood of achieving these. You may write about the same topic on all days, or write about different topics each day. All of your writing will be completely confidential. Don't worry about spelling, grammar, or sentence structure. The only rule is that once you begin writing you continue until time is up.

Both the experimental and control groups were instructed to write for 15 minutes each day for three days.

Findings Related To Demographic Questionnaire

Prior to completing the first writing, each participant was to complete a demographic form which addressed a series of questions designed to help describe the participants of this study: (1) What is your age; (2) What is your gender; (3) What is the race/ethnic group you identify yourself as; (4) Number of siblings (no distinction was made based on genetic relation); (5) What was the highest level of education obtained by your mother; (6) What was the highest level of education obtained by your father. (7) Are you the first member of your family to attend college; and (8) what is your proposed major? Table 1 presents the number and percentages of participants that responded to each question.

Experimental Group Profile

Data was collected for twenty two students in the experimental group as one student did not complete the demographic form. As seen in Table 1, the highest single percentage of respondents in the experimental group were aged 17-19 (n=19, 91%), were male 73%, Caucasian (82%), had 1-2 siblings (64%) and were not first generation college attendees 77.3%. Forty- one percent indicated that the highest education level for mother was high school and the highest education levels for fathers were high school (41%) and Bachelor's degree (41%). Most students (86%) had identified an intended major.

Control Group Profile

Table 1 also presents the demographic data for the control group (n=24). All of these students were between the ages of 17-19, over half (58%) self-identified as Caucasian, 58.3% were female, 62.5% have 1-2 siblings and 83.3% were not first generation college attendees. The highest education level for mother was the Bachelor's degree (41.7%) and high school for father (45.8). Most (98.8%) had identified a proposed major.

No-Writing Group Profile

The majority of this group fell into the age group 17-19 (98.6%), 59% self-identified as Caucasian, 57.3% were male, and 83.3% were not first generation college attendees and 68% have 1-2 siblings. The highest educational level for mother and for father was high school (37.3%, 49.3%). The majority (98.8%) have identified a proposed major.

Group Differences

There were no statistically significant differences between the three groups for the highest education level of mother, highest education level of father, number of siblings and proposed majors, there were some findings that are worth noting. There were at least 60 percent of the students in each group who had 1-2 siblings with less than 15 percent having 4+ siblings.

The majority of the students (59%) had mothers who had post-secondary degrees, and (59%) had fathers who had post-secondary degrees. Half of the fathers for students in the experimental group had a Bachelors degree or higher. The majority of the students had proposed majors with only 13 percent undecided on proposed majors. Arts and Letters and Business were the top two selections for the majority of the students (93.9%, 85.7%). In all three groups more students (82%, 58.3%, and 59%) identified themselves as Caucasian than any other race/ethnic group.

Table 1

Demographic Data

	Experimental group		Control group		No-writing group	
Variable	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage
			Ages (in years)			
17-19	20	91	24	100	74	98.6
20-22	2	9	0	0	1	1.4
			Gender			

Table 1(Cont.)

Demographic Data

Variable	Experimental group		Control group		No-writing group	
	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage
Male	16	73	10	41.7	43	57.3
Female	6	27	14	58.3	32	42.7
Race/Ethnic Group						
Caucasian	18	82	14	58.3	44	59
African American	1	5	3	12.5	17	23
Hispanic	3	13	1	4.2	5	6.7
Other	0	0	6	25	9	12.0
Number of Siblings						
0	3	14	8	33.3	11	14.7
1-2	14	64	15	62.5	51	68.0
3-4	2	9	1	4.2	8	10.7
4+	3	14	0	0	5	6.6
Highest Education for Mother						
High School/ or equiv.	9	41	7	29.2	28	37.3
Associates	4	18	5	20.8	17	22.7
Bachelor's Degree	7	31	10	41.7	19	25.3
Master's Degree	1	5	2	8.3	10	13.3
Doctorate	1	5	0	0	1	1.3
Highest Education for Father						
High School / or equiv.	9	41	11	45.8	37	49.3

Table 1(Cont.)

Demographic Data

Variable	Experimental group		Control group		No-writing group	
	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage
Associates	4	18	3	12.5	9	12.0
Bachelor's Degree	9	41	7	29.5	16	21.3
Master's Degree	1	4.5	2	8.3	12	16.0
Doctorate	1	4.5	1	4.3	1	1.3
First Generation College Attendee						
Yes	5	22.7	4	16.7	4	16.7
No	17	77.3	20	83.3	71	83.3
Proposed Major						
Undecided	3	13.6	1	4.2	9	12.0
Arts and Letters	6	27.3	8	33.3	17	22.7
Business	6	27.3	7	29.2	13	17.3
Engineering	2	9.1	2	8.3	11	14.7
Education	3	13.6	4	16.1	9	12.0
Health Sciences	1	4.5	0	0	8	10.7
Sciences	1	4.5	2	8.3	8	10.7

Contingency table analysis was conducted to evaluate whether there were any greater than expected frequencies between the experimental, control and no-writing groups in the answers to the demographic questions. A significant result would suggest

that group membership (i.e., experimental vs. control vs. no-writing) resulted in

unexpected frequencies for a given response. Therefore, for the purpose of this statistical

analysis, a non-significant result indicates that the frequencies of responses to an item

were not related to being a member of the experimental, control or no-writing groups. Chi

square results for the contingency tables produced for each of the demographic questions

are summarized in Table 2. Results indicated age had the only significant difference

between group membership and item answers.

Table2

Pearson Chi-square Results for Demographic Question Items

Question	Pearson Chi-Square	Degrees of Freedom	p (2-sided)	Cramer's V
Age	24.94	8	.002	.321
Race/Ethnic Group	8.83	6	.183	.183
Gender	4.53	2	.104	.193
Number of Siblings	21.85	18	.239	.300
Highest Degree Mother	2.44	2	.296	.142
Highest Degree Father	5.26	8	.729	.147
First Generation Attendee	6.21	8	.623	.160
Proposed Major	8.83	12	.718	.190

Between Groups Analysis

Analysis of Data for beginning Grade Point Average

Table 3 presents the data for the beginning semester (GPA). The mean and

standard deviation for beginning (GPA) were experimental group (.840, .780), control

group (.963, .687), and no-writing group (.908, .761). A one- way analysis of variance

was conducted to evaluate the differences between groups of students and beginning

semester grade point average (GPA). The independent variable group included

experimental, control and no-writing groups of students. The dependent variable was

beginning (GPA) for the three groups. The ANOVA was not significant, (F (2,119)

=.151, p <.860). There were no statistically significant differences between the

experimental, control, and no-writing groups and beginning semester GPA.

Table 3

Results between Groups for Beginning Grade Point Average

Group	N	M	SD	F	p
Experimental	23	840	780		
Control	24	.963	.687		
No-writing	75	.908	.761		
Total	122			.151	.860

Analysis of the College Adjustment Test

Table 4 presents the data for the College Adjustment Test (CAT) (Pennebaker, 1990). This 19-item survey taps the degree to which students have experienced a variety of thoughts and feelings about being in college during the previous week utilizing a Likert scale from 1 to 7 with high scores indicating general positive or negative affect about coming to college, missing home, and overall adjustment to college. The CAT produced scores on four scales: Positive Affect scores can range from 0 to 42, negative Affect scores can range from 0-63, homesickness scores can range from 0-36 and overall Adjustment scores can range from 0 to 133.

Each scale has a formula that is used to obtain a composite score for that scale. The positive affect formula is (q9+q10+q12+q13+q18+q19), the negative affect formula is q5+q6+q7+q8+q14+q15+q16+q17, homesickness formula is (q1+q2+q3+q15+q16+ (8-q11)) , and overall adjustment formula is (64-q1+q2+q3+q4+q5+q6+q7+q8) +q9+q10+q11=q12=q13+ (32-(q14+q15+q16+q17) + q18+q19 (see actual items in Appendix). The mean and standard deviations for the experimental, control and no-writing groups on each subscale are shown in Table 4.

A one-way multivariate analysis of variance (MANOVA) was conducted to determine if there were significant differences between the experimental, control and the no-writing group on the four scales of the college adjustment test. Box's M was calculated to ensure that the covariance of the measures were not statistically significant different. Results of Box's M were not statistically significant (M= *4.28, p < .000*). Therefore, there is insufficient evidence that the covariance matrices differ indicating that the results from follow-up ANOVAs may be interpreted. Box's test, evaluates whether the variances and covariance among the dependent variables are the same for all levels of

a factor. Levene's Test of equality of error variances was used to determine if the groups has similar variances for each scale.

Results of Levene's test indicated no statistically significant differences in error variances for the CAT positive affect scale ($F_{(2,119)}$ =.579, p <.562), CAT negative affect scale ($F_{(2,119)}$ = 2.952, p <.056), CAT homesickness scale ($F_{(2,119)}$ = .624, p< .538), and CAT overall adjustment ($F_{(2,119)}$ = .819 p < .443). A non- statistically significant difference for this test indicates that the variance of each of the dependent measures does not violate the assumption of equal variances necessary to use the MANOVA statistic. Wilks's Lambda was chosen to determine if there were any main effects for group membership (i.e., experimental vs. control vs. no-writing), there was no statistically significant multivariate effect. Wilks's Lambda value of *.844* is not significant, ($F_{(8, .230)}$ = *2.630, p < .011).*

This finding indicates that there were no statistically significant difference between the experimental, control and no-writing groups on the College Adjustment Test subscales. ANOVAs were conducted using Bonferroni procedure to control for Type I error across multiple ANOVAs and Dunnett's C which does not assume equal variances. A Bonferroni correction was calculated for the 4 resulting comparisons reducing a statistically significant p value to p<*.0125*. Based on this p value there is no statistically significant differences between the experimental, control and no-writing groups on the College Adjustment Test. The distribution of the College Adjustment Test scores and the experimental, control, and no-writing groups are shown in Figure 1.

Table 4

Results between Groups on the College Adjustment Test

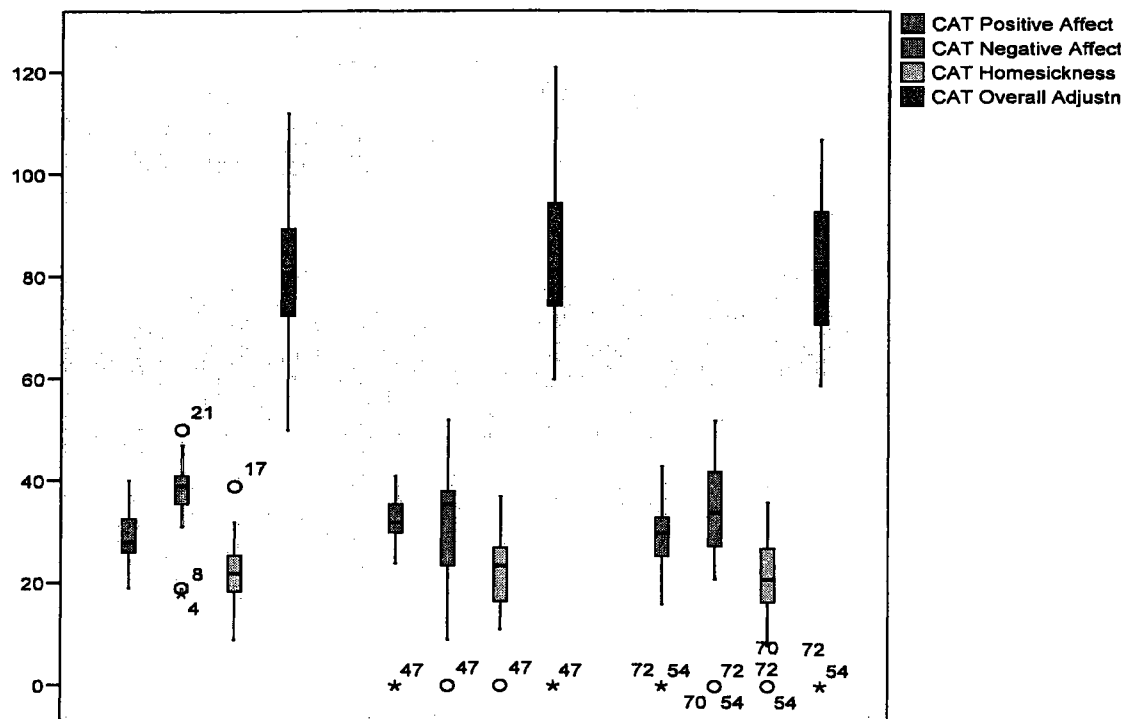| Scale	Experimental		Control		No-Writing			
	M	SD	M	SD	M	SD	F	p
Positive Affect	29.1	5.3	31.2	7.8	28.9	8.05	.835	.437
Negative Affect	37.7	7.84	30.5	13.0	34.0	11.1	2.519	.085
Homesickness	22.3	7.75	22.7	8.51	21.0	7.82	.570	.567
Overall Adjustment	81.34	13.3	82.4	23.4	81.1	18.20	.139	.871

Figure1. Distribution of the College Adjustment Test Scores and the Experimental, Control and No -Writing Groups

Analysis of Data from Pennebaker Inventory of Limbic Languidness

Table 5 presents the data for the Pennebaker Inventory of Limbic Languidness (PILL) (Pennebaker, 1982) includes 54 physical symptoms and complaints (e.g., racing heart, chest pain, indigestion, and diarrhea). These symptoms were rated on a 0-4 point scale of experienced frequency during the past week, ranging from have never or almost never experienced the symptom (0) to experienced more than once a week (4). A total score was obtained by summing these frequency responses across items. Scores on the PILL can range from 0 to 216, although most people generally score between about 34 to 84, (the mean is 59 with a standard deviation of 25). The mean and standard deviation for the experimental, control, no-writing groups for the PILL are shown in Table 5. A one- way analysis of variance was conducted to evaluate the differences between groups of students and scores on the PILL. The independent variable group included experimental, control and no-writing groups of students. The dependent variable was scores on the PILL for the three groups. The ANOVA was not significant ($F_{(2,119)} = .193$, $p < .825$). There was no statistical significant difference between the experimental, control and no-writing groups and scores on the PILL. Post hoc analysis was not needed.

Table 5

Results of Between Group Differences for Pennebaker Inventory of Limbic Languidness

Group	N	M	SD	F	p	Partial e^2
Experimental	23	33.43	27.46			
Control	24	30.46	21.00			
No-Writing	75	33.60	20.47			
Total	122	103.49	68.93	1.93	.825	.003

Table 6 presents the data for the College Activities and Behavior Questionnaire (CABQ). This is a general inventory of objective behaviors and activities commonly performed by students. Most behaviors reflect social activity and health-related behaviors. The number times students engaged in these activities in the past week was tallied into a composite score. The composite scores ranged from 0-172. There was no normative data for this instrument in the literature. The means and standard deviations for the experimental, control and no-writing groups for scores on the CABQ are shown in Table 6. A one- way analysis of variance was conducted to evaluate the differences between groups of students and scores on the CABQ. The independent variable group included experimental, control and no-writing groups of students. The dependent variable was scores on the CABQ for the three groups. The ANOVA was not significant, ($F_{(2,119)}$ =2.244, p <.110). There was no statistical significant difference between the experimental, control and no-writing groups and scores on the CABQ. Post hoc analysis was not needed.

Table 6

Results of Between Group Differences for the College Activities and Behavior Questionnaire

Group	N	M	SD	F	p	partial e^2
Experimental	23	58.74	47.90			
Control	24	43.70	30.62			
No-Writing	75	43.44	24.06			
Total	122	145.88	102.58	2.244	.110	.036

Analysis of Multiple Affect Adjective Check List (MAACL-R)

The Multiple Affect Adjective Check List (MAACL-R), Zuckerman and Lubin (1980) developed the MAACL to measure anxiety either as a state, a trait, or something intermediate such as daily, weekly, or monthly level. The test form is a single sheet with 132 adjectives. Participants are to check the box in front of the adjective that describes their feelings. Seven unique scales are scored: Anxiety (A), Depression (D), Hostility (H), Positive Affect (PA), Sensation Seeking (SS), Dysphoria (D), and Positive Seeking and Sensation Seeking (PASS). The raw scores were converted to T scores based on the number checked.

The Table 7 presents the data for the results of the between group analysis of the subscales of the MAACL-R. A one way multivariate analysis variance (MANOVA) was conducted to determine the significant differences of the experimental, control and no-writing groups on the subscales of the MAACL-R. Group membership was the independent variable and scores on the MAACL-R subscales were the dependent variables. Box's M was calculated to ensure that the covariance of the measures were not statistically significant different. Results of Box's M were not statistically significant (M= 1.800, p < .000). Therefore, there is insufficient evidence that the covariance matrices differ indicating that the results from follow-up ANOVAs may be interpreted. Levene's Test of equality of error variances was used to determine if the groups had similar variances for each subscale.

Results of Levene's test indicated no statistically significant differences in error variances for the MAACL-R subscale anxiety ($F_{(2,119)} = .090, p < .914$), MAACL-R subscale depression ($F_{(2,119)} = .983, p < .377$), MAACL-R subscale hostility ($F_{(2,119)} =$

.574, p < .565), MAACL-R subscale positive affect ($F_{(2, 119)}$ = *1.600, p<.206*), MAACL-R subscale sensation seeking ($F_{(2,119)}$ = *.729 p< .455*), MAACL-R subscale dysphoria ($F_{(2,119)}$ = *.424, p < .655*), MAACL-R ($F_{(2,119)}$ = *1.707, p< .186*). A non- statistically significant difference for this test indicates that the variance of each of the dependent measures does not violate the assumption of equal variances necessary to use the MANOVA statistic. Wilks's Lambda was chosen to determine if there were any main effects for group membership (i.e., experimental vs. control vs. no-writing), there was no statistically significant multivariate effect.

Wilks's Lambda value of *.890* is not significant, ($F_{(14, 226)}$ = *.966, p < .084*). This finding indicates that there were no statistically significant main effects for differences between the experimental, control and no-writing groups on the MAACL-R. However, pairwise comparisons of the marginal means for the experimental, control and no-writing groups on the MAACL-R subscale sensation seeking indicated a statistically significant differences *4.09, < .019*. ANOVAs were conducted and using Bonferroni procedure to control for Type I error across multiple ANOVAs and Dunnett's C which does not assume equal variances. A Bonferroni correction was calculated for the 7 resulting comparisons reducing a statistically significant *p* value to *p<.007*. Based on this p value there is no statistically significant differences between the experimental, control and no-writing groups on the MAACL-R subscales.

Table 7

Results of Between Group Differences for the Multiple Affect Adjective Check List-Revised

SCALE	Experimental		Control		No-Writing				
	M	SD	M	SD	M	SD	F	p	Partial e^2
Anxiety	49.7	22.7	40.0	22.7	50.4	22.3	.205	.134	.033
Depression	48.8	19.3	42.7	26.1	48.1	20.8	.644	.527	.011
Hostility	48.0	20.0	42.0	26.0	52.0	26.0	1.50	.229	.024
Positive Affect	48.0	20.0	42.1	26.0	52.0	26.0	.292	747	.005
Sensation Seeking	42.0	17.0	33.4	19.5	46.5	20.5	4.09	.019	.064
Dysphoria	50.0	20.1	41.5	26.0	51.3	23.0	1.67	.193	.027
Positive Affect And Sensation Seeking	48.3	22.7	43.8	26.1	49.0	20.0	.519	.597	.009

Analysis of the Adjective Checklist

The Adjective Checklist has 300 adjectives and adjectival phrases that are used to describe a person's personality. The ACL has 37 scales; four scales measuring the Modus Operandi, nine topical scales, fifteen scales assessing psychological needs or wants and four scales measuring Ego functioning based on Berne's (1961) theory of Transactional Analysis, and four scales measuring creativity and intelligence based on

Welsh's (1975) Origence-Intellectence concept. Descriptive analysis showed that for the experimental group's means were 1 (10pts) or 2 (20pts) standard deviations below the mean (50) for all scales, except A-1; and for all scales showing significant differences between groups. The control group's means were within average range (+ or - 1 SD) for 27 of the 37 scales. The no-writing group's means were also within average range (+ or - 1SD) for 27 of the 37 scales. The means for the scales showing significant differences between groups were in the average range (40-60) for 13 of the 17 scales. (The table of the means and standard deviations for all scales is in the appendix).

Scales that were one or more than 1 SD below the mean for the control group were Number Checked, Favorable, Unfavorable, Commonality, Order, Intraception, Self-Control, Military Leadership, Feminine Attributes, Adult, and Welsh A-4. Similarly scales that were one or more than 1 SD below the mean for the no-writing group were Favorable, Commonality, Achievement, Endurance, Order, Self-Control, Military Leadership, Feminine Attributes, Adult and WelshA-4. A one-way multivariate analysis of variance (MANOVA) was conducted to determine the between group differences of the topical scales that measure self- confidence, self- control, personal adjustment, ideal self, creative personality, military leader, masculine and feminine attributes scales of the ACL.

Box's M was calculated to ensure that the covariance of the measures were not statistically significant different. Results of Box's M were not statistically significant (M= *1.529,* p < *.003).* Therefore, there is insufficient evidence that the covariance matrices differ indicating that the results from follow-up ANOVAs may be interpreted. Levene's

Test of equality of error variances was used to determine if the groups has similar

variances for each scale. Results of Levene's test indicated statistically significant

differences in error variances the scale Self-Control ($F_{(2,119)}$ =4.840, p<.010), Self-

Confidence ($F_{(2,119)}$ =4.146, p< .018), Personal Adjustment ($F_{(2,119)}$ = 2.526, p< .084),

Ideal Self ($F_{(2,119)}$ =4.689, p<.011), Creative Personality ($F_{(2,119)}$ =.4.798, p <.010),

Military Leadership ($F_{(2,119)}$ = 3.511, p <.033), Masculine Attributes ($F_{(2,119)}$ = 3.993,

p< .021) and Feminine Attributes ($F_{(2,119)}$ = .431 p < .037).

A statistically significant difference for this test indicates that the variance of each

of the dependent measures does violate the assumption of equal variances necessary to

use the MANOVA statistic. A one-way analysis of variances for each scale was

conducted using Bonferroni procedure to control for Type I error across multiple

ANOVAs and Dunnett's C which does not assume equal variances. Scales showing

significant differences between groups were Self-confidence, Personal Adjustment, and

Masculine Attributes with the experimental group's mean being lower than the control

and no-writing groups mean. Table 8 presents the results of the ANOVAs for between

groups and scales of the Topical Scales of the Adjective Check List.

Table 8

Results of Between Group Differences for Topical Scales of the Adjective Check List

Scale	Experimental		Control		No-Writing			
	M	SD	M	SD	M	SD	F	p
Self-Control	29.43	21.4	37.08	16.0	37.05	15.1	.197	.144

Table 8 (Cont.)

Results of Between Group Differences for Topical Scales of the Adjective Check List

Scale	Experimental		Control		No-Writing			
	M	*SD*	*M*	*SD*	*M*	*SD*	*F*	*p*
Self-Confidence	32.04	23.1	47.33	21.0	43.00	15.1	4.10	.019*
Personal Adjustment	29.0	21.2	46.00	20.0	41.20	17.0	5.03	.008*
Ideal Self	33.22	23.6	45.40	20.0	41.20	17.0	2.60	.079
Creative Personality	34.65	24.1	45.50	17.3	44.00	17.3	2.41	.094
Military Leadership	27.04	18.7	35.00	15.3	34.50	14.4	2.29	.106
Masculine Attributes	33.83	23.8	47.00	20.0	46.00	17.5	3.64	.029*
Female Attributes	29.01	21.0	38.00	16.0	39.00	16.0	3.16	.046*

p < .05

Multiple Stepwise Regressions

Multiple stepwise regression analysis was conducted to predict which variables predict midterm grade point averages of the experimental, control and no-writing groups. The independent variables selected where group, PILL, MAACL-R subscales anxiety, depression and hostility, the following scales of the ACL, favorable adjective, achievement, dominance, endurance, order, nurturance, affiliation, exhibition, aggression, abasement, self-confidence, personal adjustment, nurturing parent, adult, free child, adapted child, Welsh A-3, Welsh A-4. Before these analyses were conducted, nominal

data were dummy-coded. Group was coded 0-experimental, 1-control and 2-no-writing groups.

One analysis included group scores on the PILL, while the second analysis included group scores on the MAACL-R subscales anxiety, depression, and hostility. The third analysis included ACL scales, Favorable adjectives, Achievement, Dominance, Endurance, Order, Nurturance, Affiliation, Exhibition, Aggression, Abasement, Self-confidence, Personal adjustment, Nurturing parent, Adult, Free child, Adapted child, Welsh A-3, Welsh A-4 and group scores. Bivariate correlations were conducted on each of the variable combinations to determine the strength and direction of their associations with the student's midterm grade point averages.

The correlation coefficients indicate that there is a weak negative association between grade point average for midterm and group membership (experimental, control, and no-writing) (-.077), MAACL-R anxiety (-.126), MAACL-R depression (-.081), MAACL-R hostility (-.092). The strongest positive correlation was between Adjective Check List scales Free Child (.210), Dominance (.200), Personal Adjustment (.198) and Self- Confidence (.188). Other strong positive associations were noted between the MAACL-R subscales with each other and the Adjective Check List scales and each of the other subscales. The bivariate correlations with midterm GPA are presented in Table 9.

Table 9

Bivariate Correlations among Variables

Variables	Correlations	Variables	Correlations
Grade point average midterm	1		
Group	-.077	Nurturance	.172
PILL	.105	Aggression	.174
MAACL-R Anxiety	-.126	Abasement	.086
MAACL-R Depression	-.081	Self-confidence	.188
MAACL-R Hostility	-.092	Personal adjustment	.198
Favorable adjectives	.173	Nurturing parent	.159
Achievement	.173	Adult	.123
Dominance	.200	Free child	.210
Endurance	.160	Adapted child	.110
Order	.148	Welsh A-3	.120
Affiliation	.156	Welsh A-4	.101

Case-wise diagnostics were conducted on the different variables to assess

normality. Where this was not met, data was transformed to meet the assumptions for

multiple stepwise regression analysis. PILL showed skewness of 1.086. PILL scores were

transformed into log (10) of PILL with result being the same skewness of 1.086. All of

the other independent variables showed a negative skewness and transformations were

not needed. Multicollinearity was assessed using tolerance indices. All of the variables

exceeded the necessary .001 on the tolerance index. These values indicated that

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multicollinearity was not a concern in these analyses. The tolerance indices are presented

in Table 10.

Table 10

Tolerance Indices

Variable	Tolerance Index	Variable	Tolerance Index
Group	.984	Nurturance	.931
PILL	.973	Affiliation	.938
MAACL-R Anxiety	.440	Aggression	.921
M AACL-R Depression	.388	Abasement	.909
MAACL-R Hostility	.439	Self-confidence	.965
Favorable adjective	.976	Adult	959
Achievement	.963	Free child	.942
Dominance	.947	Adapted child	.893
Endurance	.939	Welsh A-3	.909
Order	.940	Welsh A-4	.949

Data analysis to determine multicollinearity of scores suggests the use of 3

independent analyses. A multiple linear regression was conducted on three models.

Midterm (GPA) grade point average was the dependent variable. The first model

examines the influence of the independent variable group, scores of the Pennebaker

Inventory Limbic Languidness. The second model included scores of the MAACL-R

subscales anxiety, depression, hostility scores. The third model included the scales of the

ACL, Favorable Adjectives, Achievement, Dominance, Endurance, Order, Nurturance,

Affiliation, Exhibition, Aggression, Abasement, Self-Confidence, Personal Adjustment,

Nurturing Parent, Adult, Adapted Child, Free Child, Welsh A-3, and Welsh A-4 as independent variables. The purpose of these analyses was to determine if the subscales of the ACL impacted midterm GPA over the other factors. Model 1 produced R^2 of .017 adjusted $R^2 = -.004$, $F_{(2,119)} = 1.045$, $p < 355$ while Model 2 produced a R^2 of .037, adjusted R^2 of -.004, $F_{(5,116)} = .895$, $p < .487$. Model 3 excludes all the other scales of the ACL based on the multiple regression stepwise criteria probability of F to enter $< = .050$, probability of F to remove $> = 100$. For model 3 the produced R^2 of .094, adjusted R^2 of .047, $F_{(6,115)} = 1.992$, $p < .072$, change in R^2 values of these two models is .057, $F_{(1,115)} = 7.235$, $p < .008$. These analyses show that 08% of the variance in midterm GPA is influenced by group scores on the PILL and subscales of the MAACL-R anxiety, depression and hostility after accounting for the subscales of the Adjective Check List. The results of the analyses are presented in Table 11, Table 12 and Table 13.

Table 11

Summary of Regression Model 1

	B	Std. Error	Beta	t	Sig
Constant	.908	.246		3.698	.000
Group	-.107	.122	-.079	-.870	.386
PILL	.005	.004	.106	1.3170	.244

Table 12

Summary of Regression Model 2

	B	Std. Error	Beta	t	Sig
Constant	1.76	.318		3.696	.000
Group	-.093	.124	-.069	-.750	.455
PILL	.006	.005	.129	1.397	.165
MAACL-R subscales					
Anxiety	-.007	.006	-.140	-1.016	.312
Depression	.001	.007	.022	.151	.880
Hostility	-.001	.006	-.027	-.199	.842

Table 13

Summary of Regression Model 3

	B	Std. Error	Beta	t	Sig
Constant	.756	.318		2.179	.031
Group	-.154	.123	-.114	-1.252	.213
PILL	.006	.004	.119	1.319	.190
MAACL-R subscales					
Anxiety	-.008	.006	-.176	-1.305	.194
Depression	-2.1E-005	007	.000	-.003	.998
Hostility	.000	.006	.000	.066	.947
Free child	.013	.005	.246	2.690	.008

The data shows that based on beta scores in Model 1 the variable group negatively impact midterm GPA. In Model 2 based on beta scores the variables group, anxiety and hostility negatively impact midterm GPA, with anxiety having the greatest negative impact on GPA. In Model 3 the beta scores the variables group and hostility negatively impact midterm GPA. The significance levels in the three tables show that only the ACL scale Free Child variable influences midterm GPA. The predicted midterm GPA is represented by Ypred.

Ypred = -.114 (group) + .119 (PILL) +-.176 (anxiety) + .000 (depression) + .000 (hostility) + .249 (free child). Table 14 presents the ANOVA for predicting GPA.

Table 14
ANOVA (d) for Predicting Grade Point Average

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2.375	2	1.187	1.045	.355(a)
	Residual	135.207	119	1.136		
	Total	137.582	121			
2	Regression	5.112	5	1.022	.895	.487(b)
	Residual	132.471	116	1.142		
	Total	137.582	121			
3	Regression	12.953	6	2.159	1.992	.072(c)
	Residual	124.629	115	1.084		
	Total	137.582	121			

Analysis of Midterm Grade Point Average

Table 15 presents data for between group differences for midterm grade point average. The means and standard deviations for the experimental group were (*1.09, 121*), control group (*.945, 1.04*), and the no-writing group (*.872, 1.04*). A one- way analysis of variance was conducted to evaluate the differences between groups of students and midterm grade point average. The independent variable group included experimental, control and no-writing groups of students. The dependent variable was midterm grade point average. The ANOVA was not significant ($F_{(2,119)} = .367, p < .694$). There was no statistical significant difference between the experimental, control and no-writing groups and midterm grade point average. Post hoc analysis was not needed.

Table 15

Results of Between Group Differences for Midterm Grade Point Average

Group	*N*	*M*	*SD*	*F*	*p*
Experimental	23	1.089	1.21		
Control	24	.945	1.04		
No-Writing	75	.872	1.04		
Total	122	.9273	1.66	.367	.694

Within Group Analysis

Analysis of Race and Multiple Affect Adjective Checklist

Table 16 presents data of within group analysis results for race and scores of the subscales of the Multiple Affect Adjective Check List- Revised. The mean and standard deviations for race on each scale are shown in Table 15. A one-way multivariate analysis of variance (MANOVA) was conducted to determine the within group differences of race and scores of the MAACL-R. Box's M was calculated to ensure that the covariance of the measures were not statistically significant different. Results of Box's M were not statistically significant (M= *2.454, p < .000*). Therefore, there is insufficient evidence that the covariance matrices differ indicating that the results from follow-up ANOVAs may be interpreted. Levene's Test of equality of error variances was used to determine if the groups has similar variances for each scale. Results of Levene's test indicated no statistically significant differences in error variances the subscale anxiety ($F_{(3,117)}$ =2.592, p<.056), depression ($F_{(3,117)}$ =1.952, p< .125), hostility ($F_{(3,117)}$ = .539, p< .657), positive affect ($F_{(3,117)}$ =.636, p<.593), sensation seeking ($F_{(3,117)}$ =1.237, p <.299), dysphoria ($F_{(3,117)}$ =.989, p <.400), and positive affect and sensation seeking ($F_{(3,117)}$= .574, p< .634).

A statistically significant difference for this test indicates that the variance of each of the dependent measures does not violate the assumption of equal variances necessary to use the MANOVA statistic. Wilks's Lambda value of .782 is not significant, ($F_{(21,329)}$ =1.352, p < .140). This finding indicates that there were no statistically significant main effects between race/ethnic and scores on the MAACL-R subscales. ANOVAs were

conducted using Bonferroni procedure to control for Type I error across multiple

ANOVAs and Dunnett's C which does not assume equal variances. A Bonferroni

correction was calculated for the 7 resulting comparisons reducing a statistically

significant p value to $p<.007$. Based on this p value there is no statistically significant

differences between race/ethnic and scores on Multiple Affect Adjective Check List-

Revised.

Table 16

Results of Within Group Differences for Race and Multiple Affect Adjective Check List-
Revised

Variable	Race	N	M	SD	F	p	partial e^2
MAACL-R subscales							
Anxiety	Caucasian	76	46.7	22.3			
	African American	18	50.0	15.4			
	Hispanic	6	55.0	38.2			
	Other	21	51.0	26.3			
	Total	122	48.3	22.7	.411	.746	.010
Depression	Caucasian	76	45.5	21.1			
	African American	18	47.7	14.2			
	Hispanic	6	48.0	31.2			
	Other	21	51.4	27.0			
	Total	122	46.9	21.5	.381	.767	.010
Hostility	Caucasian	76	48.0	23.8			
	African- American	18	5.7	30.8			
	Hispanic	6	39.7	20.2			
	Other	21	48.0	23.0			

Table 16 (Cont.)

Results of Within Group Differences for Race and Multiple Affect Adjective Check List-Revised

Variable	Race	N	M	SD	F	p	partial e^2
Total		122	49.2	25.0	1.21	.310	.030
Positive Affect	Caucasian	76	47.6	20.8			
	African American	18	58.0	24.7			
	Hispanic	6	51.2	35.4			
	Other	21	48.7	20.6			
	Total	122	49.8	22.3	1.214	.308	.030
Sensation Seeking	Caucasian	76	43.2	2.35			
	African American	18	45.0	4.46			
	Hispanic	6	43.0	8.35			
	Other	21	41.2	4.82			
	Total	122	43.1	5.00	.108	.955	.010
Dysphoria	Caucasian	76	47.9	2.70			
	African American	18	51.7	5.14			
	Hispanic	6	51.0	9.62			
	Other	21	51.0	5.60			
	Total	122	50.4	5.80	.196	.899	.005
Positive Affect and Sensation Seeking	Caucasian	76	47.2	2.51			
	African American	18	51.7	4.77			
	Hispanic	6	41.7	8.92			
	Other	21	48.9	5.15			
	Total	122	47.4	5.34	.410	.746	.010

Analysis of Race and College Adjustment Test

Table 17 presents data of within group analysis results for race and scores of the

subscales of the College Adjustment Test. The mean and standard deviations for race on

each scale are shown in Table 16. A one-way multivariate analysis of variance

(MANOVA) was conducted to determine the within group differences of race and scores

of the MAACL-R. Box's M was calculated to ensure that the covariance of the measures

were not statistically significant different. Results of Box's M were not statistically

significant (M= $1.622, p < .018$). Therefore, there is insufficient evidence that the

covariance matrices differ indicating that the results from follow-up ANOVAs may be

interpreted. Levene's Test of equality of error variances was used to determine if the

groups has similar variances for each scale. Results of Levene's test indicated no

statistically significant differences in error variances the subscale positive affect ($F_{(3,117)}$

$=.911, p<.438$), negative affect ($F_{(3,117)} =1.179, p< .321$), homesickness ($F_{(3,117)} =1$

$.134, p< .338$), overall adjustment ($F_{(3,117)} =.434, p<.731$).

A statistically significant difference for this test indicates that the variance of each

of the dependent measures does not violate the assumption of equal variances necessary

to use the MANOVA statistic. Wilks's Lambda value of $.918$ is not significant, ($F_{(12, 301)}$

$=.831, p < .619$). This finding indicates that there were no statistically significant main

effects between race/ethnic and scores on the College Adjustment Test. ANOVAs were

conducted using Bonferroni procedure to control for Type I error across multiple

ANOVAs and Dunnett's C which does not assume equal variances. A Bonferroni

correction was calculated for the 4 resulting comparisons reducing a statistically

significant p value to $p<.0125$. Based on this p value there is no statistically significant

differences between race/ethnic and scores on College Adjustment Test

Table 17

Results of Within Group Differences for Race and College Adjustment Test

Variable	Race	N	M	SD	F	p	partial e^2
Positive Affect	Caucasian	76	34.3	10.1			
	African American	21	29.9	8.82			
	Hispanic	6	31.3	4.63			
	Other	18	27.0	9.00			
	Total	122	29.5	7.56	609	.610	.015
Negative Affect	Caucasian	76	29.7	7.04			
	African American	21	30.8	13.5			
	Hispanic	6	41.5	7.94			
	Other	18	32.9	12.0			
	Total	122	33.9	11.0	1.627	.187	.040
Homesickness	Caucasian	76	21.6	7.47			
	African American	18	21.0	8.26			
	Hispanic	6	27.3	4.18			
	Other	21	19.2	7.74			

Table 17 (Cont.)

Results of Within Group Differences for Race and College Adjustment Test

Variable	Race	N	M	SD	F	p	partial e^2
Total		122	21.5	7.62	1.782	.154	.044
Overall	Caucasian	76	81.4	18.1			
Adjustment	African American	18	82.7	24.6			
	Hispanic	6	77.0	12.6			
	Other	21	78.5	23.0			
	Total	122	81.0	19.7	.236	.871	.006

Analysis of Race and College Activities and Behavior Questionnaire

Table 18 presents data of within group analysis results for race and scores of

College Activities and Behavior Questionnaire. The independent variable was race and

the dependent variable was the scores on the CABQ. The means and standard deviations

for race were Caucasian (*51.0, 33.1*), African American (*32.4, 21.0*), Hispanic (*51.0,*

28.8), and Other (*43.1, 32.5*). A one way analysis of variance was conducted to evaluate

if there were any significant differences between race and scores on the CABQ. The

ANOVA was not significant (*F $_{(3,117)}$ = 2.08, p<.107*) indicating there were no

significant differences between race/ethnic and scores on the College Activities and

Behavior Questionnaire.

Table 18

Results of Within Group Differences for Race and College Activities and Behavior
Questionnaire

Variable	Race	M	SD	F	p	partial e^2
CABQ	Caucasian	51.0	33.1			
	African American	32.4	20.7			
	Hispanic	51.0	28.8			
	Other	43.1	32.5			
	Total	46.5	31.5	2.080	.107	.051

Analysis of Race and Pennebaker Inventory of Limbic Languidness

Table 19 presents data of within group analysis results of race/ethnic and scores
on the Pennebaker Inventory of Limbic Languidness. The independent variable was race
and dependent variable was scores on the PILL. The means and standard deviation for
race were Caucasian (*34.2. 29.1*), African American (*32.7, 27.2*), Hispanic (*41.2, 15.5*),
Other (*26.3, 24.1*). A one way analysis of variance was conducted to evaluate if there
were any significant differences between race/ethnic of students and scores on the PILL.
The ANOVA was not significant *(F $_{(3,117)}$ = .913, p<.435*) indicating that there were no
significant differences between race/ethnic and scores on the PILL.

Table 19

Results of Within Group Differences for Race and Pennebaker Inventory of Limbic Languidness

Variable	Race	N	M	SD	F	p
PILL	Caucasian	76	34.2	20.1		
	African American	21	32.7	27.1		
	Hispanic	6	41.2	15.5		
	Other	18	27.3	24.1		
	Total	122	33.1	21.9	.913	.435

Analysis of Within Group Differences for Grade Point Average

Table 20 presents data for within group differences for beginning grade point average and midterm grade point averages. There were a total of 60 students with beginning and midterm grade point averages with means and standard deviations experimental $n=11$ (.249, 1.16), control $n=11$ (-.018, 1.10), no-writing $n=38$ (-.393, .958). A one way analysis of variance was conducted to evaluate group differences in beginning GPA and midterm GPA. The ANOVA was not significant ($F_{(2,119)}= .709$, $p<.494$) indicating there was no statistically significant difference in the experimental, control, and no-writing groups and beginning GPA and midterm GPA.

Table 20

Results of Within Group Differences for Grade Point Average

Group	N	M	SD	F	p
Experimental	11	.249	1.19		
Control	11	-.018	1.10		
No-Writing	38	-.393	.958		
				.709	.494

Content Analysis of Expressive Writing

Table 21 presents data for the content analysis of the expressive writings. The

essays were analyzed based on the Pennebaker's Linguistic Inquiry and Word Count

(LIWC 2007). Words were counted based on the LIWC dictionary of almost 4,500 words

and word stems. Each of the default LIWC 2007 categories is composed of a list of

dictionary words that define that scale. There are four categories each with separate

scales. The four categories are Linguistic processes which includes, word count, words,

sentence, dictionary words, total function words, total pronouns, personal pronoun, 1st

person singular, 1st person plural, 2nd person, 3rd person singular, 3rd person plural,

impersonal pronouns, articles, common verbs, auxiliary verbs, past tense, present tense,

future tense, adverbs, prepositions, conjunctions, negations, quantifiers, numbers and

swear words. Psychological processes includes social processes, (family, friends,

humans), affective processes, (positive emotion, negative emotion, anxiety, anger,

sadness), cognitive processes, (insight, causation, discrepancy, tentative, certainty, inhibition, inclusive, exclusive,) perceptual processes (see, hear feel), biological processes (body, health, sexual, ingestion), relativity (motion, space, time).

Personal concerns category includes work, achievement, leisure, home, money, religion, and death. Spoken word category included assent, no fluencies and fillers. The Linguistic processes, Psychological processes and Personal concerns were the dependent variables with group as the independent variable. A total of 46 students participated in the expressive writing. There were an equal amount of participants in each group, experimental group $n= 23$ and control group $n=23$. The means and standard deviations for the category linguistic processes were experimental group ($197.4, 115.5$), control group ($190.6, 16.1$). Means and standard deviations for the psychological processes were experimental group ($90.1, 16.2$), control group ($50.4, 10.0$) and for the personal concern category the means and standard deviations were experimental group ($11.4, 3.0$) and control group ($14.0, 5.4$).

A one was analysis of variance was conducted to evaluate significant difference between the experimental and control groups on the linguistic processes category, psychological processes category and personal concern category. The ANOVA for linguistic processes was not significant ($F_{1, 44} = 2.130, p<.152$) indicating there were no statistically significant differences between the experimental and control groups. The ANOVA for psychological processes was significant ($F_{(1, 44)} =100, p<.000$), indicating there was a significant difference between groups on the psychological process. The experimental group used significantly more words in their essays dealing with

psychological processes than the control group. The ANOVA for personal concern category was significant $(F_{(1, 44)} = 13.7, p < .001)$ indicating that there was a significant difference between the experimental and control group for the personal concern category. The experimental group used more words in their essays dealing with personal concerns than the control group.

Table 21

Results of Between Group Differences for Expressive Writing (Experimental vs. Control)

Category	Group	M	SD	F	p
Linguistic Processes					
	Experimental	197.4	15.5		
	Control	190.6	16.1		
	Total	194.0	16.1	2.130	.152
Psychological Processes					
	Experimental	90.1	16.2		
	Control	50.4	10.0		
	Total	70.3	24.1	100	.000
Personal Concerns					
	Experimental	11.4	3.0		
	Control	10.0	6.0		
	Total	14.0	5.4	13.7	.001

Summary of the Findings

Findings were divided into those related to the demographic information, related to between group differences and within group differences. Contingency analysis showed that there were no significant differences between groups on the demographic information. One way analysis of variances(ANOVA) were conducted to evaluate differences between the experimental, control and no-writing groups and scores on the Pennebaker Inventory Limbic Languidness, and scores on the College Activities and Behavior Questionnaire. There were no statistically significant differences between the experimental, control, and no-writing groups and scores on the Pennebaker Inventory Limbic Languidness and scores on the College Activities and Behavior Questionnaire.

One way multivariate analysis of variance (MANOVA) was conducted on the scores of the subscales of the College Adjustment Test to evaluate if there were any statistically significant differences between the subscales of positive affect, negative affect, homesickness and overall adjustment and the experimental, control and no-writing groups. There were no statistically significant differences found between the groups and the subscales of the College Adjustment Test. One way multivariate analysis of variance (MANOVA) was conducted to evaluate if there were statistically significant differences between the scores of the subscales of the Multiple Affect Adjective Checklist-Revised and the experimental, control and no-writing groups. There were no statistically significant differences between the groups and the subscales of the Multiple Affect Adjective Check List-Revised.

A one way multivariate analysis of variance (MANOVA) was conducted to evaluate if there were any significant differences between the experimental, control and no- writing groups and scores on the topical scales of the Adjective Check List. There were significant differences between the experimental, control and no-writing groups were on the self-confidence scale, personal adjustment scale, and both the masculine and feminine attributes scales. The experimental group scores were lower than the control or no-writing groups. Box M and Levene's Test were used to determine that the variances of each of the dependent measures did not violate the assumption of equal variances necessary to use the MANOVA statistic.

A stepwise multiple regressions were done to identify which variables would influence midterm Grade Point Average. Three summary models were looked at with Model 1 using the PILL and groups with Grade Point Average, Model 2 added the subscales of anxiety, depression and hostility from the MAACL-R, Model 3 added the following ACL scales Favorable adjectives Achievement, Endurance, Order, Adult, Dominance, Exhibition, Aggression, Free Child, Adapted Child, Nurturance, Nurturing Parent, Affiliation, Self-confidence, Personal Adjustment, Abasement, Welsh A-3 and Welsh A-4. These analyses show that 08% of the variance in midterm GPA is influenced by group scores on the PILL and subscales of the MAACL-R anxiety, depression and hostility after accounting for the subscales of the Adjective Check List. The significance levels that only the ACL scale Free Child variable influences midterm GPA.

Within group analysis were done to evaluate if there were significant differences for race/ethnic and scores on the College Adjustment Test, Multiple Adjective Affect

Check List-Revised, College Activities and Behavior Questionnaire, and Pennebaker Inventory Limbic Languidness. One-way analyses of variances were conducted to evaluate within group differences. Although one way multivariate analysis of covariance (MANCOVA) would have been a more appropriate test, the variances violated the assumptions to conduct a MANCOVA. There were no statistically significant differences between the race/ethnic identity of the students and scores on the PILL, CAT, MAACL-R, and CABQ. Differences between beginning GPA and Midterm GPA were analyzed using one-way analyses of variance (ANOVA). There were no significant differences between midterm GPA and beginning GPA.

A one way analysis was conducted to evaluate group differences for the expressive writing essays. The ANOVA for linguistic processes was not significant ($F_{1, 44}$) = 2.130, p<.152) indicating there were no statistically significant differences between the experimental and control groups. The ANOVA for psychological processes was significant ($F_{(1, 44)}$ =100, p<.000), indicating there was a significant difference between groups on the psychological process. The experimental group used significantly more words in their essays dealing with psychological processes than the control group. The ANOVA for personal concern category was significant ($F_{(1, 44)}$ =13.7, p< .001) indicating that there was a significant difference between the experimental and control group for the personal concern category. The experimental group used more words in their essays related to personal concerns than the control group. Implications of the findings are discussed in Chapter V.

CHAPTER V

Conclusions and Recommendations

In the first four chapters, the statement of the problem, review of the literature, methodology, and data analysis were presented. In this chapter, a review of previous chapters, conclusions from the data and recommendations are put forward. Suggestions for further study are also included.

Review of Preceding Chapters

The purpose of this study was to explore if the use of a brief written intervention using self-affirmations will improve the academic performance of a sample of underperforming third semester freshmen students. Expressive writing is a brief writing intervention that has shown positive outcomes on a multitude of subjects for a variety of conditions. Over the last three decades, researchers have provided evidence to suggest that people's physical and mental health can be predicted by the words they use (Gottschalk & Glaser, 1969; Rosenberg & Tucker, 1978, Stiles, 1992). More recently, a large number of studies have found that having individuals write or talk about deeply emotional experiences is associated with improvements in mental and physical health (e.g., Pennebaker, 1997, Smyth, 1998).

Research has shown that there are many factors associated with poor academic performance for some college freshmen students (Russell & Petrie, 1992). Parental support along with parent's education, social support, institution support, emotional and

personal factors and achievement gaps all play important roles in academic success for college freshmen students. The first year of college has been identified as the most critical period because it shapes student's chances for later success, with success being defined as positive adjustment to the new academic, social, professional, and personal challenges that accompany enrollment in college (Upcraft, & Gardner, 1989).

In the transition to university, students' academic, social, and emotional adjustments are perhaps the three most important domains to consider. Academic adjustment, or how well students deal with educational demands, includes motivation to complete academic work, success in meeting academic requirements, academic effort, and satisfaction with the academic environment (Baker & Siryk, 1989). Social adjustment is fundamental for everyone, but particularly important for young adults engaged in the process of individuation from their family. Moving away from home to live in residence likely accelerates this process. Social adjustment can be measured in many ways. Major life events, such as the transition to university, are times of heightened vulnerability to emotional problems (Compas, Wagner, Slavin, & Vannatta, 1986). Up to 20% of university students experience depression during their undergraduate education (Daughtry & Kunkel, 1993), and first-year students have the highest rates of depressive symptoms (Beeber, 1999).

University life has been reported to be more harsh and stressful than students anticipate (Compas et al., 1986). Up to 60% of first-year students leave university without finishing their degrees; the majority of these students leave within the first two years (Porter, 1990). Stress adversely affects psychological and physical health (e.g.,

Dwyer & Cummings, 2001; Fisher & Hood, 1988). Undergraduate students reported stress was the most common health factor impacting their academic performance (American College Health Association, 2006). Demakis and McAdams (1994) found that undergraduate students who reported heightened levels of stress had significantly more physical health problems and less satisfaction compared with those reporting lower levels of stress. Wintre and Yaffe (2000) found that increases in stress during the first year predicted decreased overall adjustment and lower grade point average (GPA) at yearend. Pancer, Hunsberger, Pratt, and Alisat (2000) demonstrated that students' stress level in the summer before starting university predicted academic, social, personal-emotional, and overall adjustment 6 months later. Most studies found that at the beginning of the transition (first few months of classes) students experience the greatest difficulty (e.g., Baker, McNeil, & Siryk, 1985

Grades are one measure of the extent to which the student has adjusted to the academic setting (Ratcliff, 1991). Also, academic performance, especially the first semester GPA, has been shown to be a significant predictor of freshmen retention (McGrath & Braunstein, 1997). Another important factor may be how realistic students are about their academic ability. Studies have shown that students who began their first year of college with an unrealistically high evaluation of their ability demonstrated a negative relationship between their self-concept and GPA. Of those who were academically successful, most had a realistic assessment of what they could and could not do (Fletcher, McGuire, Dziuban & Warren, 1997; Ratcliff, 1991).

Although university settings are stressful for almost all students according to (Cohen et.al, 2006) for African American students the academic environment can involve an extra degree of threat not experiences by non minority students. Low- income and minority students frequently must overcome challenges posted by social and structural barriers to higher education not experienced by other students. Regarding academic preparation, low-SES and minority students often bring fewer academic resources to college. This is often because they are less likely to have been exposed to a rigorous high school curriculum, more likely to have lower scores on admission tests, have lower rank in their class, and lower GPAs (Terenzini et al., 2001). A substantial amount of educational and psychological research has consistently demonstrated that African American students underperform academically relative to White students. In this study I wanted to look at instruments that measured constructs that identified overall adjustment and predictions of midterm grade point average, to offer a short-term writing intervention as a possible avenue for increased academic performance.

Samples and Procedures

The study was conducted in the spring semester of 2009 at Old Dominion University in Norfolk, Virginia. The participants were all enrolled in the University College Academic Success Program in the spring semester. Each section met once a week for 16 weeks. Of the seventeen sections 5 sections had been selected prior to the beginning of the semester to be the experimental and controls groups, with the other 12 sections selected as no writing groups. Participates were third semester underperforming freshmen students participating in the University College Academic Success Program. All procedures and measures were approved by the Institutional Review Board at Old

Dominion University. All participants in this study were provided information about the research including parameters of participation and informed consent. Participants were recruited using the sections of the University 110 classes. The Participants (N=122) were assigned to the experimental group (n=23), the control group (n=24), and the non-writing group (n=75) based on the class section. Consequently, a participant had an equal chance of being assigned to the experimental group as the control group and the no-writing group for this study.

The study began the second week of the semester so that the instructors had a chance to interact with students before the study began. Each instructor was given individual packets for each student in their classes. Each packet contained a consent form, a demographic form, a copy of the following instruments: Multiple Affect Adjective Checklist-R (MAACL-R,) College Adjustment Test (CAT), Pennebaker Inventory of Limbic Languidness (PILL), College Activities and Behavior Questionnaire (CABQ) and the Adjective checklist (ACL). The experimental and control groups were also given instructions and writing paper in their packets.

The instructors were instructed to collect all data for the first day and return to the investigator. Instructions for the second and third day and instruments for the third day were provided to the participants by Blackboard. Students were asked to complete the instruments on Blackboard and to e-mail the writings to the investigator. All data was coded utilizing an identifier code to address confidentiality and anonymity.

The experimental group students were provided the following instructions:

> You will be asked to write about your deepest held and most cherished values. Describe how these have affected your life, and in your writing, explore your deepest emotions and thoughts. You might tie your topic to your relationship with others, including parent, lovers, friends, or relatives: to your past, your present or your future: or to who you have been, who you would like to be or who you are now. You may write about the same topic on all days, or write about a different topic each day. All of your writing will be completely confidential. Don't worry about spelling, grammar, or sentence structure. The only rule is that once you begin writing, you continue until time is up.

The control group received the following instructions.

> You are asked to write about your future life goals, and likelihood of achieving these. You may write about the same topic on all days, or write about different topics each day. All of your writing will be completely confidential. Don't worry about spelling, grammar, or sentence structure. The only rule is that once you begin writing you continue until time is up.

Both the experimental and control groups were instructed to write for 15 minutes each day for three days.

There are two reasons why this study contributes to the existing literature. The first is that it adds to the body of knowledge about underperforming third semester freshmen students. The second reason is that the outcomes can provide resources that can assist in the evaluation of the effects of psychological and physical symptoms associated with anxiety and "psychological threat" with poor academic performance.

Purpose and Research Design

This study was conducted to determine if the use of a short-term expressive writing intervention would result in a reduction of anxiety and physical symptoms associated with stress for underperforming third semester freshman on academic probation.

The research question that formed the framework for the study was

1. Can a short-term expressive writing intervention improve academic performance, reduce physical health complaints, and improve psychological well-being, for a sample of third semester freshmen students participating in the University College Academic Success Program?

Research Design

Due to unanticipated technical computer glitches, the second and third essays could not collected, and due to student's resistance and non-compliance to writing the follow-up essays, anticipated follow-up data could not be collected. These conditions mandated that the study become descriptive rather than experimental. Descriptive research has the goal of describing what, how or why something is happening. Qualitative research encompasses several approaches to research that are in some respect quite different from one another. Yet all qualitative approaches have two things in common. First, they focus on phenomena that occur in natural settings-that is the "real world". And second they involve studying phenomena in all their complexity. "The

researcher recognizes that the issue they are studying has many dimensions and layers, and so they try to portray the issue in its multifaceted form" (Moustakas, 1994,). The method of choice for this research was a content analysis of the brief written interventions.

The assumption is that words and phrases mentioned most often are those reflecting important concerns in every communication. Qualitatively, content analysis can involve any kind of analysis where communication content (speech, written text, interviews, images ...) is categorized and classified. In its beginnings, using the first newspapers at the end of 19th century, analysis was done manually by measuring the number of lines and amount of space given a subject. With the rise of common computing facilities like PCs, computer-based methods of analysis are growing in popularity. Content analysis was done using Pennebaker's Linguistic Inquiry and Word Count (LIWC 2007).

Data Analysis

Academic performance was measured by obtaining records of the participant's overall GPA and the mid-semester GPA. For the purposes of this study, the physical health complaints of participants were measured by scores on the PILL. Furthermore, psychological well-being was measured by subscale scores on the MAACL-R. The ACL assessed personality characteristics. College adjustment was measured by subscales on the CAT and scores on the CABQ with an independent variable of midterm GPA.

Descriptive statistics for the demographic data are reported as frequencies with accompanying percentages of respondents for each possible response.

Descriptive statistics for the CAT subscales, MAACL-R subscales, CABQ, PILL, and ACL topical scales consist of means, and standard deviations. Demographic data were analyzed to determine if statistically significant differences existed between the experimental, control and no-writing groups using contingency tables resulting in a Pearson Chi Square statistic. Between group differences on the College Adjustment Test (CAT) and the Multiple Affect Adjective Checklist-Revised (MAACL-R), were analyzed using multivariate analysis of variance (MANOVA). College Activities and Behavior Questionnaire (CABQ) and Pennebaker Inventory Limbic Languidness were analyzed using one way analysis of variance (ANOVA). Within group differences were analyzed using a one way analysis of variance (ANOVA), for race ethnic with Pennebaker Inventory of Limbic Languidness and College Activities and Behavior Questionnaire. One-way multivariate analysis of variance was utilized to determine within group differences for race/ethnic and College Adjustment Test and the Multiple Affect Adjective Check List. LIWC was used for content analysis of the essays. Results of these analyses were presented in narrative form in Chapter IV.

Findings and Conclusions

Presented are the hypothesis, findings and conclusions for the results of the analysis for the PILL, CAT, CABQ, MAACL-R and the ACL.

Hypothesis One

"There will be no significant difference in academic performance as measured by beginning semester GPA between experimental group students, control group students and the no-writing group students".

Findings. The results of the (ANOVA) indicated no significant differences between groups of students and beginning semester grade point average (GPA). The ANOVA was not significant, $F(2,119) = .151, p < .860)$. Means varied slightly between the experimental group ($M=.840, SD=.780$), control group ($M=.963, SD=.687$), and no-writing group ($M=.908, SD=.761$). There were no statistically significant differences between the experimental, control, and no-writing groups and beginning semester GPA. Therefore the null hypothesis could not be rejected.

Conclusion. The data analysis supports the hypothesis that there were no significant differences between the experimental, control, and no-writing groups and beginning semester grade point average.

Hypothesis Two

"There will be no significant difference between the experimental group, control group and no-writing group for ratings on the College Adjustment Test (CAT)".

Findings. The results of the MANOVA indicated that there were no significant differences between the experimental, control and the no-writing group on the four scales of the college adjustment test. The means and standard deviations for the positive affect subscale were experimental group *(M=29.1, SD=5.3)*, control group *(M=31.2, SD=7.8)*, and no-writing group *(M=28.9, SD=8.05)*, negative affect subscale experimental group *(M=37.7, SD= 7.84)*, control group *(M=30.5, SD= 13.0)*, and no-writing group

($M=34.0, SD=11.1$), homesickness subscale experimental group ($M=22.3$, $SD=7.75$), control group ($M=22.7, SD=8.51$), no-writing group ($M=21.0, SD=7.82$) overall adjustment experimental ($M=81.34, SD=13.3$), control group ($M=82.4$, $SD=23.4$) and no-writing group ($M=81.1, SD=18.20$). . Wilks's Lambda was chosen to determine if there were any main effects for group membership (i.e., experimental vs. control vs. no-writing), there was no statistically significant multivariate effect. Wilks's Lambda value of .844 is not significant, ($F_{(8, .230)} = 2.630, p < .011$). This finding indicates that there were no statistically significant difference between the experimental, control and no-writing groups on the College Adjustment Test subscales.

ANOVAs were conducted using Bonferroni procedure to control for Type I error across multiple ANOVAs and Dunnett's C which does not assume equal variances. A Bonferroni correction was calculated for the 4 resulting comparisons reducing a statistically significant p value to $p<.0125$. Based on this p value there is no statistically significant differences between the experimental, control and no-writing groups on the College Adjustment Test. The Wilks's Lambda was chosen to determine if there were any main effects for group membership (i.e., experimental vs. control vs. no-writing), there was no statistically significant multivariate effect. Wilks's Lambda value of .844 is not significant, ($F_{(8, .230)} = 2.630, p < .011$). Therefore, the null hypothesis could not be rejected.

Conclusion. The data supports the hypothesis that there are no significant differences between the experimental, control, and no-writing group and the scores of the College Adjustment Test.

Hypothesis Three

"There will be no significant difference between the experimental group, control

group and no-writing group for ratings on the Pennebaker Inventory Limbic

Languidness test (PILL)"

Findings. The results of the (ANOVA) indicated that there were no significant

differences between the experimental, control, and no-writing groups for the PILL. The

mean and standard deviation were experimental group ($M=33.43$, $SD=27.46$), control

group ($M=30.46$, $SD=21.00$), and no-writing group ($M=33.60$, $SD=20.47$). The

ANOVA was not significant ($F_{(2,119)} =.193$, $p <.825$). There was no statistical significant

difference between the experimental, control and no-writing groups and reported physical

symptoms. Therefore, the null hypothesis could not be rejected.

Conclusion. The data analysis supports the hypothesis that there are no significant

differences between the experimental, control, and no-writing group and the scores of the

Pennebaker Inventory of Limbic Languidness.

Hypothesis Four

"There will be no significant difference between experimental group, control

group and no-writing group on the College Attitude and Behavior Questionnaire.

(CABQ)".

Findings. The results of the (ANOVA) indicated that there were no significant

differences between the experimental, control, and no-writing groups and scores on the

College Activities and Behavior Questionnaire. Means and standard deviations were

experimental ($M=58.74$, $SD=47.90$), control group ($M=43.70$, $SD=30.62$), and no-writing group ($M=43.44$, SD 24.06). The ANOVA was not significant, ($F_{(2,119)}$ $=2.244$, $p <.110$). There was no statistical significant difference between the experimental, control and no-writing groups and scores on the CABQ. Therefore, the null hypothesis could not be rejected.

Conclusion. The data analysis supports the hypothesis that there are no significant differences between the experimental, control, and no-writing group and the scores of the College Activities and Behavior Questionnaire.

Hypothesis Five

"There will be no significant difference between experimental group, control group and no-writing group on the Multiple Affect Adjective Check List (MAACL-R)".

Findings. The results of the (MANOVA) indicated there were no statistical significant differences between the experimental, control and no-writing groups on the subscales of the MAACL-R. The means and standard deviations were experimental group ($M=49.7$, $SD=22.7$), control group ($M=40.0$, $SD=22.7$) and no-writing group ($M=50.4$,$SD=22.3$) on the anxiety scale, experimental group ($M=48.8$, $SD=19.3$), control group ($M=42.7$,$SD=26.1$), no-writing ($M=48.1$, $SD=20.8$) on the depression scale, experimental group ($M=48.0$, $SD=20.0$), control group ($M=42.0$, $SD=26.0$) and no-writing ($M=52.0$,$SD=26.0$) on the hostility scale, experimental group ($M=48.0$,$SD=20.0$), control group ($M=42.1$, $SD=26.0$), and no-writing ($M=52.0$, $SD=26.0$) on the positive affect scale, experimental group ($M=42.0$, $SD=17.0$), control

group (*M=33.4,SD=19.5*), and no-writing group (*M=46.5, SD=20.5*) on the sensation

seeking scale, experimental group (*M=50.0, SD=20.1*), control group (*M=41.5,*

SD=26.0), and no-writing group (*M=51.3, SD=23.0*) on the dysphoria scale,

experimental group (*M=48.3, SD=22.7*), control group (*M=43.8, SD=26.1*) and no-

writing group (*M=49.0, SD=20.0*) on the positive affect and sensation seeking scale.

Wilks's Lambda was chosen to determine if there were any main effects for group

membership (i.e., experimental vs. control vs. no-writing), there was no statistically

significant multivariate effect. Wilks's Lambda value of *.890* is not significant, (*F* $_{(14, 226)}$

= *.966, p < .084*). This finding indicates that there were no statistically significant main

effects for differences between the experimental, control and no-writing groups on the

MAACL-R. However, pairwise comparisons of the marginal means for the experimental,

control and no-writing groups on the MAACL-R subscale sensation seeking indicated a

statistically significant differences *4.09, < .019.* ANOVAs were conducted and using

Bonferroni procedure to control for Type I error across multiple ANOVAs and Dunnett's

C which does not assume equal variances. A Bonferroni correction was calculated for the

7 resulting comparisons reducing a statistically significant *p* value to *p<.007*. Based on

this p value there no were statistically significant differences between the experimental,

control and no-writing groups on the MAACL-R subscales. Therefore, null hypothesis

could not be rejected.

Conclusion. The data analysis supports the hypothesis that there are no significant

differences between the experimental, control, and no-writing group and the scores of the

subscales of the Multiple Affect Adjective Check List- Revised.

Hypothesis Six

"There will be no significant differences between the experimental group, control group and no- writing group on the topical Adjective Check List scales".

Findings. The results of the (MANOVA) indicated that there were statistical differences between the experimental, control and no-writing groups and the topical scales that measure self- confidence, self- control, personal adjustment, ideal self, creative personality, military leadership; masculine and feminine attributes scales of the ACL. The means and standard deviations for the topical scales of the ACL were Self-Control scale, experimental ($M=29.4$, $SD=21.4$), control ($M=37.1$, $SD=16.0$), no-writing($M=37.1$, $SD=15.1$), Self- Confidence scale, experimental ($M=32.0$, $SD=23.1$), control ($M=47.3$, $SD=21.0$), no-writing ($M=43.0$, $SD=15.1$), Personal Adjustment scale, experimental ($M=29.7$, $SD=21.2$), control ($M=46.0$, $SD=20.0$), no-writing ($M=41.2$, $SD=17.0$), Ideal Self scale, experimental ($M=33.22$, $SD=23.6$), control ($M=45.4$, $SD=20.0$), no-writing ($M=41.1$, $SD=17.0$), Creativity Personality scale, experimental ($M=34.6$, $SD=24.1$), control ($M=45.6$, $SD=17.3$), no-writing ($M=44.0$, $SD=17.3$), Military Leadership scale, experimental ($M=27.0$, $SD=18.7$), control ($M=35.0$, $SD=15.3$), no-writing ($M=34.5$, $SD=14.1$), Masculine Attributes scale, experimental ($M=33.8$, $SD=23.8$), control ($M=47.0$, $SD=20.0$), no-writing ($M=46.0$, $SD=17.5$), Feminine Attributes scale, experimental (M=29.0,SD=21.0), control (M=38.0,SD=16.0), no-writing (M=39.0,SD=16.0) A one-way multivariate analysis of variance (MANOVA) was conducted to determine the between group differences of the topical scales that measure self- confidence, self- control, personal adjustment, ideal self,

creative personality, military leader, masculine and feminine attributes scales of the ACL. Box's M was calculated to ensure that the covariance of the measures were not statistically significant different. Results of Box's M were not statistically significant (M= 1.529, p < .003). Therefore, there is insufficient evidence that the covariance matrices differ indicating that the results from follow-up ANOVAs may be interpreted. Levene's Test of equality of error variances was used to determine if the groups has similar variances for each scale. Results of Levene's test indicated statistically significant differences in error variances the scale Self-Control $(F_{(2,119)} = 4.840, p < .010)$, Self-Confidence $(F_{(2,119)} = 4.146, p < .018)$, Personal Adjustment $(F_{(2,119)} = 2.526, p < .084)$, Ideal Self $(F_{(2,119)} = 4.689, p < .011)$, Creative Personality $(F_{(2,119)} = .4.798, p < .010)$, Military Leadership $(F_{(2,119)} = 3.511, p < .033)$, Masculine Attributes $(F_{(2,119)} = 3.993, p < .021)$ and Feminine Attributes $(F_{(2,119)} = .431 p < .037)$.

A statistically significant difference for this test indicates that the variance of each of the dependent measures does violate the assumption of equal variances necessary to use the MANOVA statistic. A one-way analysis of variances for each scale was conducted using Bonferroni procedure to control for Type I error across multiple ANOVAs and Dunnett's C which does not assume equal variances. Scales showing significant differences between groups were Self-confidence, Personal Adjustment, Masculine Attributes, and Feminine Attributes with the experimental group's mean being lower than the control and no-writing groups mean.

Therefore, the null hypothesis could be rejected.

Conclusion. The data does not support the hypothesis and there are significant differences between the experimental, control and no- writing groups on the topical scales of the ACL.

Hypothesis Seven

"There will be no significant difference among racial /ethnic groups on the Multiple Affect Adjective Checklist (MAACL-R)".

Findings. The results of the MANOVA indicated that there were no statistically significant differences within the experimental, control, and no-writing groups with of race and scores of the MAACL-R. The means and standard deviations for Caucasian (n=76), African American (n=21), Hispanic (n=6) and Other (n=21), are shown in Table 15. Wilks's Lambda value of *.782* is not significant, ($F_{(21,329)}$ =*1.352), p < .140)*. This finding indicates that there were no statistically significant main effects between race/ethnic and scores on the MAACL-R subscales. ANOVAs were conducted using Bonferroni procedure to control for Type I error across multiple ANOVAs and Dunnett's C which does not assume equal variances. A Bonferroni correction was calculated for the 7 resulting comparisons reducing a statistically significant *p* value to *p<.007*. Based on this *p* value there is no statistically significant differences between race/ethnic and scores on Multiple Affect Adjective Check List-Revised. Therefore, the null hypothesis could not be rejected.

Conclusion. The data analysis supports the hypothesis that there are no significant differences within the experimental, control, and no-writing group and race/ethnic and subscales of the Multiple Affect Adjective Check List- Revised.

Hypothesis Eight

"There will be no significant difference among racial/ethnic groups on the College

Adjustment Test (CAT)".

Findings. The results of the MANOVA indicated that there were no statistically

significant differences within the experimental, control, and no-writing groups. The

means and standard deviations for Caucasian (n=76), African American (n=21), Hispanic

(n=6) and Other (n=21), are shown in Table 16. Wilks's Lambda value of *.918* is not

significant, ($F_{(12, 301)}$ =.831), $p < .619$). ANOVAs were conducted using Bonferroni

procedure to control for Type I error across multiple ANOVAs and Dunnett's C which

does not assume equal variances. A Bonferroni correction was calculated for the 4

resulting comparisons reducing a statistically significant p value to $p<.125$. Based on this

p value there is no statistically significant differences between race/ethnic and scores on

College Adjustment Test. Therefore, the null hypothesis could be rejected.

Conclusion. The data analysis supports the hypothesis that there are no significant

differences within the experimental, control, and no-writing group and race/ethnic and

scores on the College Adjustment Test.

Hypothesis Nine

"There will be no significant difference among racial/ethnic groups on the College

Activities and Behavioral Questionnaire (CABQ)".

Findings. The results of the ANOVA indicate that there were no statistically significant differences within the variable race/ethnic and the experimental, control and no-writing groups. The means and standard deviations for race were Caucasian *(51.0, 33.1)*, African American *(32.4, 21.0)*, Hispanic *(51.0, 28.8)*, and Other *(43.1, 32.5)*. The ANOVA was not significant (F $_{(3,117)}$ = 2.08, p<.107) indicating there were no significant differences between race/ethnic and scores on the College Activities and Behavior Questionnaire. Therefore, the null hypothesis could not be rejected.

Conclusion. The data analysis supports the hypothesis that there are no significant differences within the experimental, control, and no-writing group and race/ethnic and scores on the College Activities and Behavior Questionnaire.

Hypothesis Ten

"There will be no significant difference among racial/ethnic groups on the Pennebaker Inventory Limbic Languidness (PILL)".

Findings. The results of the ANOVA indicated that there were statistically significant differences one way analysis of variance was conducted to evaluate if there were any significant differences between race/ethnic of students and scores on the PILL. The means and standard deviations for race were Caucasian *(34.2. 29.1)*, African American *(32.7, 27.2)*, Hispanic *(41.2, 15.5)*, Other *(26.3, 24.1)*. The ANOVA was not significant *(F $_{(3,117)}$ = .913, p<.435* indicating that there were no significant differences between race/ethnic and scores on the PILL. Therefore, the null hypothesis could not be rejected.

Conclusion. The data analysis supports the hypothesis that there are no significant differences within the experimental, control, and no-writing group and race/ethnic and scores on the Pennebaker Inventory of Limbic Languidness.

Findings Related To Demographic Questionnaire

Prior to completing the first writing, each participant was to complete a demographic form which addressed a series of questions designed to help describe the participants of this study: (1) What is your age; (2) What is your gender; (3) What is the race/ethnic group you identify yourself as; (4) Number of siblings (no distinction was made based on genetic relation); (5) What was the highest level of education obtained by your mother; (6) What was the highest level of education obtained by your father. (7) Are you the first member of your family to attend college; and (8) what is your proposed major?

Experimental Group Profile

Data was collected for twenty two students in the experimental group as one student did not complete the demographic form. The highest single percentage of respondents in the experimental group were aged 17-19 (n=19, 91%), were male 73%, Caucasian (82%), had 1-2 siblings (64%) and were not first generation college attendees 77.3%. Forty- one percent indicated that the highest education level for mother was high school and the highest education levels for fathers were high school (41%) and Bachelor's degree (41%). Most students (86%) had identified an intended major,

Control Group Profile

The demographic data for the control group (*n*=24). All of these students were between the ages of 17-19, over half (58%) self-identified as Caucasian, 58.3% were female, 62.5% have 1-2 siblings and 83.3% were not first generation college attendees. The highest education level for mother was the Bachelor's degree (41.7%) and high school for father (45.8). Most (98.8%) had identified a proposed major. and father

No-Writing Group Profile

The majority of this group fell into the age group 17-19 (98.6%), 59% self-identified as Caucasian, 57.3% were male, and 83.3% were not first generation college attendees and 68% have 1-2 siblings. The highest educational level for mother and for father was high school (37.3%, 49.3%). The majority (98.8%) have identified a proposed major.

Group Differences

There were no statistically significant differences between the three groups for the highest education level of mother, highest education level of father, number of siblings and proposed majors, there were some findings that are worth noting. There were at least 60 percent of the students in each group who had 1-2 siblings with less than 15 percent having 4+ siblings.

The majority of the students (59%) had mothers who had post-secondary degrees, and (59%) had fathers who had post-secondary degrees. Half of the fathers for students in the experimental group had a Bachelors degree or higher. The majority of the students

had proposed majors with only 13 percent undecided on proposed majors. Arts and Letters and Business were the top two selections for the majority of the students (93.9%, 85.7%). In all three groups more students (82%, 58.3%, and 59%) identified themselves as Caucasian than any other race/ethnic group.

Multiple Stepwise Regressions for Prediction of Midterm Grade Point Average

The manual reports six factors derived by principal components with a normal varimax rotation: Potency (Achievement, Endurance, Order, Adult, A-4 and negative loading for Adapted Child); Assertiveness (Dominance, Exhibition, Aggression, Free child, and negative loadings with Self-control and Abasement); Sociability (Favorable Adjectives, Nurturance, Affiliation, Personal Adjustment, Nurturing Parent, A-3); Dissatisfaction (Number checked, Unfavorable Adjectives, Succorance, Femininity, Critical parent); and Constriction (commonality, Military Leadership with negative loadings for Ideal Self, Masculine Attributes, A-!). The sample's mean scores for the scales that defined the first three factors of Potency, Assertiveness, and Sociability were correlated with the mid-term GPA to determine if the factors were related to academic performance. No significant correlations were found.

Multiple stepwise regression analysis was conducted to determine which variables predict midterm grade point averages of the experimental, control and no-writing groups of students. The independent variables selected where Group, PILL, MAACL-R subscales anxiety, depression and hostility, the ACL factors of Potency, Assertiveness,

and Sociability. Before these analyses were conducted, nominal data were dummy-coded. Group was coded 0-experimental, 1-control and 2-no-writing groups.

One analysis included group scores on the PILL, while the second analysis included group sores on the MAACL-R subscales anxiety, depression, and hostility. The third analysis included ACL factors of Potency, Assertiveness, and Sociability. Bivariate correlations were conducted on each of the variable combinations to determine the strength and direction of their associations with the student's midterm grade point averages.

The correlation coefficients indicate that there is a weak negative association between grade point average for midterm and group membership (experimental, control, and no-writing) (-.077), MAACL-R anxiety (-.126), MAACL-R depression (-.081), MAACL-R hostility (-.092). The strongest positive correlation was between Adjective Check List scales Free Child (.210), Dominance (.200), Personal Adjustment (.198) and Self- Confidence (.188). Other strong positive associations were noted between the MAACL-R subscales with each other and the Adjective Check List scales and each of the other subscales. The data shows that based on beta scores in Model 1 the variable group negatively impact midterm GPA.

In Model 2 based on beta scores the variables group, anxiety and hostility negatively impact midterm GPA, with anxiety having the greatest negative impact on GPA. In Model 3 the beta scores the variables group and hostility negatively impact midterm GPA. The significance levels in the three tables show that only the ACL scale

Free Child variable influences midterm GPA. The predicted midterm GPA is represented by Ypred.

Ypred = -.114 (group) + .119 (PILL) +-.176 (anxiety) + .000 (depression) + .000 (hostility) + .249 (free child). Table 14 presents the ANOVA for predicting GPA.

Analysis of Grade Point Average

There were a total of 60 students with beginning and midterm grade point averages with means and standard deviations experimental $n=11$ (.249, 1.16), control $n=11$ (-.018, 1.10), no-writing $n=38$ (-.393, .958). Although 122 students participated by midterm many had dropped out or had left the program which accounts for only 60 students with both beginning and midterm grades. A one way analysis of variance was conducted to evaluate group differences in beginning GPA and midterm GPA. The ANOVA was not significant ($F_{(2,119)}$ = .709, p<.494 indicating there was no statistically significant difference in the experimental, control, and no-writing groups and beginning GPA and midterm GPA

Content Analysis of Expressive Writing

The essays were analyzed based on the Pennebaker's Linguistic Inquiry and Word Count (LIWC 2007). Words were counted based on the LIWC dictionary of almost 4,500 words and word stems. Each of the default LIWC 2007 categories is composed of a list of dictionary words that define that scale. There are four categories each with multiple separate scales (see samples from each scale in appendix). The four categories are Linguistic processes which includes, word count, words, sentence, dictionary words, total

function words, total pronouns, personal pronoun, 1st person singular, 1st person plural, 2nd person, 3rd person singular, 3rd person plural, impersonal pronouns, articles, common verbs, auxiliary verbs, past tense, present tense, future tense, adverbs, prepositions, conjunctions, negations, quantifiers, numbers and swear words. Psychological processes includes social processes, (family, friends, humans), affective processes, (positive emotion, negative emotion, anxiety, anger, sadness), cognitive processes, (insight, causation, discrepancy, tentative, certainty, inhibition, inclusive, exclusive,) perceptual processes (see, hear feel), biological processes (body, health, sexual, ingestion), relativity (motion, space, time).

Personal concerns category includes work, achievement, leisure, home, money, religion, and death. Spoken word category included assent, no fluencies and fillers. The Linguistic processes, Psychological processes and Personal concerns were the dependent variables with group as the independent variable. A total of 46 students participated in the writing of the essays. The mean and standard deviation for the category linguistic processes were experimental group *n= 23 (197.4, 115.5)*, control group *n=23 (190.6, 16.1)*. Mean and standard deviation for the psychological processes were experimental group *(90.1, 16.2)*, control group *(50.4, 10.0)* and for the personal concern category the mean and standard deviation were experimental group *(11.4, 3.0)* and control group *(14.0, 5.4)*.

A one was analysis of variance was conducted to evaluate significant difference between the experimental and control groups on the linguistic processes category, psychological processes category and personal concern category. The ANOVA for

linguistic processes was not significant $(F_{1, 44)} = 2.130, p<.152)$ indicating there were no statistically significant differences between the experimental and control groups. The ANOVA for psychological processes was significant $(F_{(1, 44)} =100, p<.000)$, indicating there was a significant difference between groups on the psychological process. The experimental group used significantly more words in their essays related to psychological processes than the control group. The ANOVA for personal concern category was significant $(F_{(1, 44)} =13.7, p< .001)$ indicating that there was a significant difference between the experimental and control group for the personal concern category. The experimental group used more words in their essays related to personal concerns than the control group.

<p style="text-align:center">Summary of Findings</p>

Hypothesis one through six examined between group differences on the College Adjustment Test, Multiple Affect Adjective Check list-Revised, College Activities and Behavior Questionnaire, Pennebaker Inventory of Limbic Languidness and topical scales of the Adjective Check List. Results indicated that the experimental, control and no-writing groups were very similar with no significant differences except on the ACL topical scales. Hypothesis seven through ten addresses within group differences to determine differences in racial responses, the results indicated there were no significant differences in racial responses.

Discussion of Findings

The purpose of this study was could a short-term expressive writing intervention improve academic performance, reduce physical health complaints, and improve psychological well-being, for a sample of third semester freshmen students participating in the University College Academic Success Program? The intent was to look at instruments that measured the constructs that identified overall adjustment and predictions of midterm grade point average. Although no statistical significant differences were found between the experimental, control, and no-writing groups on the College Adjustment Test, the idea that these students are in the Academic Success Program does infer that they are possible having some difficulty with college adjustment. Likewise the results show no significant differences for the College Activities and Behavior Questionnaire. However, inferences can be made for the experimental, control and no-writing group's level of participation in college activities also based on their poor academic performance.

Social adjustment is fundamental for everyone, but particularly important for young adults engaged in the process of individuation from their family. Moving away from home to live in residence likely accelerates this process. Although not statistically significant the scores on the homesickness scale for the three groups were in the low20's (with the highest possible score being 36) possibly indicating some level of missing family and friends. Also, need for affiliation had a direct impact on social integration, and achievement need, a measure of the degree of effort and quality of effort an individual

expends to surmount obstacles, was directly related to academic integration, social integration, and goal commitment (Pascarella & Chapman, 1983).

Research has shown that self-esteem is negatively correlated with loneliness (Ginter & Dwinell, 1994) which, in turn, predicts student adjustment (McWhirter, 1997). Students who had difficulty meeting people and making new friends or who tended to cope with difficult situations by isolating themselves had more difficulty adjusting than those who were more social (Tinto, 1993). Aspinwall and Taylor (1992) reported that the beneficial effects of self-esteem on academic adjustment during the freshman year were mediated by the tendency to use active coping instead of avoidance coping, and the greater use of social supports. A limitation of the study was the lack of participation needed to get the post writing data to confirm college adjustment.

For the results on the Multiple Affect Adjective Check list-R and Pennebaker Inventory of Limbic Languidness between the experimental, control and no-writing groups a more appropriate inference would have been possible with pre and post results. Psychosocial factors, rather then directly impacting performance outcomes such as GPA or persistence, mediate the antecedents to these outcomes. For example, self-esteem, although not directly related to persistence, had a direct impact on three key constructs within Tinto's model, namely academic integration, social integration, and institutional commitment (Munro, 1981). A limitation of the study was the lack of post- writing data. Clearly if provided, the data could have increased our understanding of this sample population's physical health symptoms and psychological well-being. These two

instruments have been used in multiple other studies to evaluate increases or decreases in physical health symptoms and psychological well-being along with expressive writing.

The results of the Adjective Check List measured personality characteristics and clearly accounted for most of the differences between these three groups. According to Russell and Petrie (1992) personality factors predictive of academic adjustment include personality measures, locus of control, self-esteem, and trait anxiety. There is little evidence to support the notion that there is a unique personality profile which identifies the students who will persist in college as different from those who will withdraw (Ratcliff, 1991; Tinto, 1993). Some studies suggest, however, that specific personality characteristics may discriminate students who were academically successful from those who were unsuccessful. According to the ACL manual, the lower scores on the Self-confidence scale may indicate that the students in the experimental group may have more difficulty in mobilizing their resources and taking action than the students in the control and no-writing groups. These students may also be may be more anxious, high strung, and moody, avoid close relationships with others, and worry about their ability to deal with the stresses and strains of their lives based on the low scores on the Personal Adjustment scale. The students in the experimental group may be less masculine and more dependent and unassuming than the students in the control or no-writing groups. These students may also keep others at a distance, are skeptical of their intentions, and reject overtures.

A growing body of evidence indicates that one of the most predictive factors of academic adjustment is self-esteem, a term often used interchangeably with self-concept,

self-perception or self-worth (Byrne, 1996). Self-esteem is a positive or negative attitude toward oneself (Rosenberg, 1965) and the personal judgment of worthiness. Some studies report that a sense of self-confidence, enhanced in part by informal contacts with faculty, predicts academic adjustment and persistence (Cohorn & Giulliano, 1999; Gerdes & Mallinckrodt, 1994). In this study although the experimental group's means were lower on the scales that were statistically significantly different than the control, and no-writing groups mean, the experimental group's GPA actually increased from the beginning of the semester to midterm semester. However, looking at the overall mean for beginning GPA, for some of these students the beginning GPA was so below the average that obtaining a 3.0 for the semester would not have brought them up to the required 2.0.

The results are also limited in identifying racial/ethnic responses due to the population for this semester. Although research has shown racial gaps for minority students in this study there were not enough minority students to identify racial differences.

Content analysis of the expressive writings had limitations also, due to only getting the first writing. However research has shown it benefits from other populations of students to incarcerated prison and chronically ill patients. No doubt the intent was to add to that body of knowledge. For this study, the experimental group used more words relating to the psychological processes and personal concerns than the control group, and this possibly due to the differences in writing instructions. The experimental group's GPA did increase from beginning semester to midterm, and it can be inferred that taking the time to look at their values may have helped increase their motivation to academically perform better.

Limitations

A limitation of the study was the lack of post- writing data. The results are also limited in identifying racial/ ethnic responses due to the population for this semester. Content analysis of the expressive writings had limitations also, due to only getting the first writing. Another limitation was size of the groups with the no-writing group being 3 times larger than both the experimental and control groups.

Implications for Future Research

This pilot study indicates a need to continue this study with pre and post data and the three days of writing to continue to identify if this interventions can help reduce anxiety and" psychological threat" for underperforming third semester students. The limitations can be the focus of future research. Content analysis of the expressive writings had limitations also, due to only getting the first writing. The reduction in anxiety was never meant to be accomplished overnight; the purpose to write using self-affirmation for over a three day period comes from prior research indicating that a change in thinking is a process that takes time. Future research could identify ways to increase participation with this population. I believe this study adds to the literature by confirming a need for an intervention to help reduce anxiety to help improve academic performance possibly just by the students lack of participation in this study. Also future research could include a longitude study to look at how other interventions might reduce anxiety in this population and possible identify correlations that can better assist in course instruction. Future

research could also look at how gender and race play as variables in identifying "psychological threat" in this population.

Since according to (Tinto,1993) 75% of students who drop out of college do so within the first two years and the greatest proportion of these students drop out after the first year, it is critically important to understand the complex forces that influence successful academic adjustment during the first year. It is projected that college attendance will continue to grow by 12% between now and 2012 to include 17.6 million people enrolled in college courses (National Center for Education Statistics, 2003). With increased attendance come increased proportions of students who might face difficulties adjusting to the college environment. There are a variety of ways in which to go about identifying students who are having trouble adjusting to college. For instance, adjustment may be measured by acquiring student's self-reports of their attachment to a university (i.e. writing intervention) participation in campus activities, psychological well-being and academic standing.

CHAPTER V1

MANUSCRIPT

A PILOT STUDY TO EXPLORE THE USE OF EXPRESSIVE WRITING TO REDUCE ANXIETY AND PSYCHOLOGICAL THREAT IN AN ACADEMIC SETTING

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ABSTRACT

The purpose of this study was to investigate if the use of Pennebaker's short-term

expressive writing intervention would have a positive effect on the academic

performance of a group of third semester underperforming freshmen. This is a relatively

brief and simple intervention pioneered by J. W. Pennebaker (1997) who conducted

numerous studies using the procedure. Most of the research has involved having subjects

write about traumatic, stressful or emotional events for 15 – 20 minutes (the maximum)

over 3 – 5 days. In contrast, the studies by Wilson (2006) and Cohen et al (2006) used

self-affirmations for writing. For this study self-affirmation directions were given to the

experimental group, and the control group was instructed to write about their goals and

objectives for the future. Both the experimental and control groups was instructed to

write for 15 minutes each day for three days.

Results of the short-term expressive writing intervention were investigated using

a variety of measures and instruments. Academic performance was measured by

obtaining records of the participant's overall GPA and midterm grades. For the purposes

of this study, the physical health complaints of participants were measured by scores on

the *Pennebaker Inventory of Limbic Languidness* (PILL). Furthermore, psychological

well-being was measured by subscale scores on *The Multiple Affect Adjective Checklist-*

Revised (MAACL-R). The *Adjective Checklist* (ACL) assessed personality

characteristics. College adjustment was measured by subscales on *The College*

Adjustment Test (CAT) and scores on the *College Activities and Behavior Questionnaire*

(CABQ). Participates were third semester underperforming freshmen students

participating in the University College Academic Success Program. Participants were

recruited using the sections of the University 110 classes. The participants (N=122) were

assigned to the experimental group (n=23), the control group (n=24), and the non-writing

group (n=75) based on what section they were enrolled in. Discussion of the results and

how they relate to the literature are included. Implications of the investigation and

recommendations for future research are also included.

A Pilot Study to Explore the Use of Expressive Writing to Reduce Anxiety and
Psychological Threat in an Academic Setting

Expressive writing is a brief writing intervention that has shown positive

outcomes on a variety of subjects for a variety of conditions. For example, significant

benefits have been found for students' grade point average (Pennebaker & Francis, 1996;

Cameron & Nicholls, 1998; Cohen et. al. 2006, and Wilson, 2006); working memory

(Klein & Boals, 2001); self-reported health outcomes (Cameron & Nicholls, 1998; Park

& Blumberg, 2002); and medical conditions (Symth 1998; Rosenberg et. al. 2002). Most

research has involved subjects writing about traumatic, stressful or emotional events for

15-20 minutes (the maximum) over 3-5 days. In contrast, the studies by Wilson (2006)

and Cohen et.al, (2006) used self-affirmations for writing. .

Expressive Writing and Academic Adjustment

Dr. James W. Pennebaker, a professor in the Department of Psychology at The

University of Texas at Austin and author of several books, including "Opening Up" and

"Writing to Heal," is a pioneer in the study of using expressive writing as a route to

healing. His research has shown that short-term focused writing can have a beneficial

effect on everyone from those dealing with a terminal illness to victims of violent crime

to college students facing first-year transitions. In the book "Opening Up", Pennebaker

shares his personal experience with using writing to help him overcome his own depression, and how this led him to want to understand why writing had been so helpful (p.30). Pennebaker began working with his students in an effort to identify the physical and psychological benefits of writing.

Pennebaker identified that the majority of common health problems are associated with a variety of subjective physical symptoms, including fatigue, difficulty concentrating, racing heart, shortness of breath, anxiety, headache, and upset stomach, dizziness, and muscle tension. Pennebaker looked at these symptoms in relation to traumatic experiences and symptom reporting. He concluded that when people experience a trauma in their lives and are unable to or chose not to talk about these experiences the physical symptoms may be ways individuals focus on symptoms and sensations to avoid addressing the overwhelming thoughts of emotional upheavals (Pennebaker, 1989)

In one study examining adjustment to college, Cameron and Nicholls (1998) had participants previously classified as dispositional optimists or pessimists write in one of three conditions: a self-regulation condition (writing about thoughts and feelings towards coming to college and then formulating coping strategies), a disclosure condition (writing about thoughts and feelings only), or a control task (writing about trivial topics). Overall, participants in the disclosure task had higher GPA scores at follow-up, but only those in the self-regulation task experienced less negative affect and better adjustment to college over the control participants. Optimists visited their doctors less in the following month if they had participated in either of the experimental writing conditions. On the other hand,

only pessimists in the self-regulation condition had significantly fewer visits to the doctor after the study. With the added encouragement of formulating coping strategies, pessimist may be able to reap the same health benefits from writing about their thoughts and feelings as optimists naturally do.

Attending college for the first-time can be a time of academic and emotional adjustment for freshman students. The new demands of course requirements and developing a social support system can be seen as a "harsh" reality for some students. This difficulty in adjusting can take the form of poor academic performance and often increased medical complaints. Research has shown that freshman students experience a great deal of stress related to adjusting to college (Kadison, DiGeronimo, 2004). Although university settings are stressful for almost all students according to (Cohen et.al, 2006) for African American students the academic environment can involve an extra degree of threat not experiences by non minority students. Successful adjustment to college during the first year is an area of increasing concern for most higher education institutions (McGrath, Braunstein, 1997, Tinto, 1993).

Research has shown that the anxiety associated with the concept of "stereotype threat" may also be a factor for minority students and females that influence their academic performance. Steele & Aronson, (1995) first developed the notion of stereotype threat to identify how everyone is vulnerable to stereotype threat, at least in some circumstances. Everyone is a member of at least one group that is characterized by some type stereotype, and any salient social identity can affect performance. Researchers have shown that the consequences of stereotype threat go beyond underachievement on an academic task for example according to Stone, (2002) it can lead to self-handicapping

strategies ,such as reduced time practicing for a task. In education it can influence students to choose not to pursue the domain of study, and consequently limit the range of their professional endeavors that will be successful.

Further research has shown that there are many factors associated with poor academic performance for some college freshmen students (Russell & Petrie, 1992). Parental support along with parent's education, social support, institution support, emotional and personal factors and achievement gaps all play important roles in academic success for college freshmen students. Academic adjustment, or how well students deal with educational demands, includes motivation to complete academic work, success in meeting academic requirements, academic effort, and satisfaction with the academic environment (Baker & Siryk, 1989).

Russell and Petrie (1992) organized research in the area of academic adjustment and success that is based on multiple predictor and outcome variables. In their model, factors predictive of academic adjustment are divided into three major content areas: academic, social/environment, and personality. Academic factors include a number of variables directly related to academic performance such as aptitude and ability, study skills, and text anxiety, academic motivation, self-efficacy and attribution. Social/Environmental factors affecting academic adjustment include life stress, and social support, campus environment, work involvement, family variables, and academic environment. Personality factors predictive of academic adjustment include personality measures, locus of control, self-esteem, and trait anxiety.

Academic Factors

For most college students, the transition to the college classroom requires an adjustment of academic habits and expectations. They often must study harder, improve their study habits, and take school more seriously. Classes are larger, instructors have differing teaching styles, the pace is faster, and written work is more frequent, reading assignments are lengthier, standards are higher, and the competition is more acute. A common outcome measure of academic adjustment is the overall (or cumulative) grade point average. Larose and Roy (1991) determined that high school GPA was the most effective predictor of first semester college GPA for their sample of 1,235 students. Students who remain in college typically have achieved an acceptable grade point average according to traditional standards as well as their own expectations.

Grades are one measure of the extent to which the student has adjusted to the academic setting (Ratcliff, 1991). Also, academic performance, especially the first semester GPA, has been shown to be a significant predictor of freshmen retention (McGrath & Braunstein, 1997). Another important factor may be how realistic students are about their academic ability. Studies have shown that students who began their first year of college with an unrealistically high evaluation of their ability demonstrated a negative relationship between their self-concept and GPA. Of those who were academically successful, most had a realistic assessment of what they could and could not do (Fletcher, McGuire, Dziuban & Warren, 1997; Ratcliff, 1991).

Low- income and minority students frequently must overcome challenges posted by social and structural barriers to higher education not experienced by other students. Regarding academic preparation, low-SES and minority students often bring fewer academic resources to college. This is often because they are less likely to have been

exposed to a rigorous high school curriculum, more likely to have lower scores on admission tests, have lower rank in their class, and lower GPAs (Terenzini et al., 2001). A substantial amount of educational and psychological research has consistently demonstrated that African American students underperform academically relative to White students.

A socio- environmental perspective to explain this gap, first proposed by social psychologist Steele& Aronson (1995), focuses on the negative effects of group stereotypes on scholastic performance. They proposed the notion of "stereotype threat" to account for the disparity in academic success, for which they argued that negative stereotypes about a group can have a detrimental impact on the performance of individuals within the group when they are put in the position of potentially confirming the stereotype. Steele & Aronson further demonstrated that this threat is greatest for those individuals who identify strongly with the stereotyped domain, or the academic domain in the case of African American students. Belief in the validity of the stereotype is not a necessary condition for the threat to actualize, as long as the threat is known by members of the marginalized group.

Social /Environmental Factors

Social support is one of the most important protective factors for undergraduates (Tao et al., 2000). Social support includes social resources that individuals perceive to be available or that are actually offered to them by helping relationships (Cronkite & Moos, 1995).Perceived social support is one of the most commonly used measures of social support. Perceived social support is a person's perception of the availability of support

from others (i.e., family and friends) and captures the complex nature of social support including both the history of the relationship with the individual who provided the supportive behavior and the environment context (Hobfoll & Vaux, 1993).

Personality and Psychosocial Factors

The psychological characteristics of the student have a major impact on both academic and social integration (Tinto, 1993). However, traditional psychological models have provided little utility in directly predicting academic success or departure from personality traits (Tinto 1993). Furthermore, attempts to correlate personality inventories with direct measures of academic success or persistence have produced inconsistent profile types (Tinto, 1993; Pascarella & Terenzini 1991). Psychological theories of departure invariably see student departure as reflecting a shortcoming or weakness in the individual, ignoring the impact of the institution on student behavior (Tinto, 1993). Such theories argue that attrition among college students could be substantially reduced by either improvement of student skills, by the selection of individuals with "appropriate" personality traits, or both. This argument, however, is not empirically supported.

METHOD

Participants

The participants (N=122) were assigned to the experimental group (n=23), the control group (n=24), and the non-writing group (n=75) based on what section they were enrolled in. Five sections were selected before the study began to be the experimental and control groups, all other sections were selected to be no-writing groups. Consequently, a

participant had an equal chance of being assigned to the experimental group as the control group and the no-writing group for this study.

Each instructor was given individual packets for each student in their classes. Each packet contained a consent form, a demographic form, a copy of the following instruments: Multiple Affect Adjective Checklist-R (MAACL-R,) College Adjustment Test (CAT), Pennebaker Inventory of Limbic Languidness (PILL), College Activities and Behavior Questionnaire (CABQ) and the Adjective checklist (ACL). The experimental and control groups were also given instructions and writing paper in their packets. All groups filled-out and submitted a demographic questionnaire, the PILL, CAT, MAACL-R, ACL, and CABQ. Participants also completed the first day expressive writing intervention and were given instructions for the completion of the second and third day writings.

This study used self-affirmations directions for the experimental group's expressive writing, and the control group was instructed to write about their goals and objectives for the future. The third group did not do any writing and only completed the demographic survey and instruments. Both the experimental and control groups were asked to write for 15 minutes each day for three days. Each participant was asked to complete a short demographic survey used to gather information about, age, gender, race/ethnic group, highest education for mother and father, number of siblings, if first generation college attendee , and proposed or actual major. Four instruments will be used along with the expressive writing:

1 .<u>Pennebaker Inventory of Limbic Languidness</u> (PILL) (Pennebaker, 1982). This is a 54-item scale which taps the frequency of occurrence of a group of common physical symptoms and sensations.

2. <u>College Adjustment Test (CAT)</u> (Pennebaker, 1990) this 19-item survey taps the degree to which students have experienced a variety of thoughts and feelings about being in college.

3..<u>Multiple Affect Adjective Check List (MAACL-R)</u>, Zuckerman and Lubin (1980) developed the MAACL to measure anxiety either as a state, a trait, or something intermediate such as daily, weekly, or monthly level. The test form is a single sheet with 132 adjectives. Participants are to check the box in front of the adjective that describes their feelings. Five unique scales are scored: Depression, Anxiety, Hostility, Positive Affect and Sensation Seeking.

4. <u>The Adjective Check List</u> (Gough, 1980) will be administrated to each participant. The Adjective Checklist consists of 300 adjectives and adjectival phrases that are used to describe a person's attributes. The ACL consists of 300 adjectives comprising 37 scales that include measures of psychological needs based on Murray's (1938) needs. Fifteen scales assessing psychological needs or wants are provided including Achievement, Dominance, Endurance, Order, Intraception, Nurturance, Affiliation, Heterosexuality, Exhibition, Autonomy, Aggressions, Change, Succorance, Abasement, and Deference.

5. College Activities and Behavior Questionnaire this questionnaire is a general inventory of objective behaviors and activities commonly performed by students. Most behaviors reflect social activity and health-related behaviors.

The Need for Confidentiality and Anonymity and how this is addressed

The instructors were instructed to collect all data for the first day and return to the investigator. Instructions for the second and third day and instruments for the third day were provided to the participants by Blackboard. Students were asked to complete the instruments on Blackboard and to e-mail the writings to the investigator. All data was coded utilizing an identifier code to address confidentiality and anonymity.

The experimental group students were provided the following instructions:

You will be asked to write about your deepest held and most cherished values. Describe how these have affected your life, and in your writing, explore your deepest emotions and thoughts. You might tie your topic to your relationship with others, including parent, lovers, friends, or relatives: to your past, your present or your future: or to who you have been, who you would like to be or who you are now. You may write about the same topic on all days, or write about a different topic each day. All of your writing will be completely confidential. Don't worry about spelling, grammar, or sentence structure. The only rule is that once you begin writing, you continue until time is up.

The control group received the following instructions.

You are asked to write about your future life goals, and likelihood of achieving these. You may write about the same topic on all days, or write about different topics each day. All of your writing will be completely confidential. Don't worry about spelling, grammar, or sentence structure. The only rule is that once you begin writing you continue until time is up.

Findings and Interpretations

Findings were divided into those related to the demographic information, related to between group differences and within group differences.

Experimental Group Profile

The highest single percentage of respondents in the experimental group were aged 17-19 (n=19, 91%), were male 73%, Caucasian (82%), had 1-2 siblings (64%) and were not first generation college attendees 77.3%. Forty- one percent indicated that the highest education level for mother was high school and the highest education levels for fathers were high school (41%) and Bachelor's degree (41%). Most students (86%) had identified an intended major.

Control Group Profile

All of these students were between the ages of 17-19, over half (58%) self-identified as Caucasian, 58.3% were female, 62.5% have 1-2 siblings and 83.3% were not first generation college attendees. The highest education level for mother was the

Bachelor's degree (41.7%) and high school for father (45.8). Most (98.8%) had identified a proposed major. and father

No-Writing Group Profile

The majority of this group fell into the age group 17-19 (98.6%), 59% self-identified as Caucasian, 57.3% were male, and 83.3% were not first generation college attendees and 68% have 1-2 siblings. The highest educational level for mother and for father was high school (37.3%, 49.3%). The majority (98.8%) have identified a proposed major.

Group Differences

There were no statistically significant differences between the three groups for the highest education level of mother, highest education level of father, number of siblings and proposed majors, there were some findings that are worth noting. There were at least 60 percent of the students in each group who had 1-2 siblings with less than 15 percent having 4+ siblings.

The majority of the students (59%) had mothers who had post-secondary degrees, and (59%) had fathers who had post-secondary degrees. Half of the fathers for students in the experimental group had a Bachelors degree or higher. The majority of the students had proposed majors with only 13 percent undecided on proposed majors. Arts and Letters and Business were the top two selections for the majority of the students (93.9%, 85.7%). In all three groups more students (82%, 58.3%, and 59%) identified themselves as Caucasian than any other race/ethnic Contingency analysis showed that there were no significant differences between groups on the demographic information.

The mean and standard deviation for beginning grade point average (GPA) were experimental group (*.840, .780*), control group (*.963, .687*), and no-writing group (*.908, .761*). A one- way analysis of variance was conducted to evaluate the differences between groups of students and beginning semester grade point average (GPA). The independent variable group included experimental, control and no-writing groups of students. The dependent variable was beginning (GPA) for the three groups. The ANOVA was not significant, $(F (2,119) = .151, p < .860)$. There were no statistically significant differences between the experimental, control, and no-writing groups and beginning semester GPA.

One way multivariate analysis of variances (MANOVA) conducted to evaluate if there were significant differences between the groups and scores on the College Adjustment Test Wilks's Lambda was chosen to determine if there were any main effects for group membership (i.e., experimental vs. control vs. no-writing), there was no statistically significant multivariate effect. Wilks's Lambda value of *.844* is not significant, $(F_{(8, .230)} = 2.630, p < .011)$. This finding indicates that there were no statistically significant difference between the experimental, control and no-writing groups on the College Adjustment Test subscales. ANOVAs were conducted using Bonferroni procedure to control for Type I error across multiple ANOVAs and Dunnett's C which does not assume equal variances. A Bonferroni correction was calculated for the 4 resulting comparisons reducing a statistically significant *p* value to *p<.0125*. Based on this *p* value there is no statistically significant differences between the experimental, control and no-writing groups on the College Adjustment Test.

One way multivariate analysis of variances (MANOVA) conducted to evaluate if there were significant differences between the groups and the scores on the Multiple Affect Adjective Check List-Revised. Wilks's Lambda value of .890 is not significant, ($F_{(14, 226)} = .966, p < .084$). This finding indicates that there were no statistically significant main effects for differences between the experimental, control and no-writing groups on the MAACL-R. However, pairwise comparisons of the marginal means for the experimental, control and no-writing groups on the MAACL-R subscale sensation seeking indicated a statistically significant differences 4.09, < .019. ANOVAs were conducted and using Bonferroni procedure to control for Type I error across multiple ANOVAs and Dunnett's C which does not assume equal variances. A Bonferroni correction was calculated for the 7 resulting comparisons reducing a statistically significant p value to $p < .007$. Based on this p value there is no statistically significant differences between the experimental, control and no-writing groups on the MAACL-R subscales.

A one- way analysis of variance was conducted to evaluate the differences between groups of students and scores on the PILL. The independent variable group included experimental, control and no-writing groups of students. The dependent variable was scores on the PILL for the three groups. The ANOVA was not significant ($F_{(2,119)} = .193, p < .825$). There was no statistical significant difference between the experimental, control and no-writing groups and scores on the PILL. Post hoc analysis was not needed.

A one- way analysis of variance was conducted to evaluate the differences between groups of students and scores on the CABQ. The independent variable group

included experimental, control and no-writing groups of students. The dependent variable was scores on the CABQ for the three groups. The ANOVA was not significant, $(F_{(2,119)} = 2.244, p < .110)$. There was no statistical significant difference between the experimental, control and no-writing groups and scores on the CABQ. Post hoc analysis was not needed.

A stepwise multiple regressions were done to identify which variables would influence midterm Grade Point Average. A multiple linear regression was conducted on three models. Midterm (GPA) grade point average was the dependent variable. The first model examines the influence of the independent variable group and the scores of the Pennebaker Inventory Limbic Languidness. The second model included scores of the MAACL-R subscales anxiety, depression, hostility scores. The third model included the scales of the ACL, Favorable Adjectives, Achievement, Dominance, Endurance, Order, Nurturance, Affiliation, Exhibition, Aggression, Abasement, Self-Confidence, Personal Adjustment, Nurturing Parent, Adult, Adapted Child, Free Child, Welsh A-3, and Welsh A-4 as independent variables.

The purpose of these analyses was to determine if the subscales of the ACL impacted midterm GPA over the other factors. Model 1 produced R^2 of .017 adjusted R^2 = -.004, $F_{(2,119)} = 1.045, p < 355$ while Model 2 produced a R^2 of .037, adjusted R^2 of -.004, $F_{(5,116)} = .895, p < .487$. Model 3 excludes all the other scales of the ACL except Free child based on the multiple regression stepwise criteria probability of F to enter < = .050, probability of F to remove > = 100. For model 3 the produced R^2 of .094, adjusted

R^2 of .047, $F_{(6,115)} = 1.992$, $p< .072$, change in R^2 values of these two models is .057, $F_{(1,115)} = 7.235$, $p < .008$. These analyses show that 08% of the variance in midterm GPA is influenced by group scores on the PILL and subscales of the MAACL-R anxiety, depression and hostility after accounting for the subscales of the Adjective Check List.

There were no statistically significant differences between the race/ethnic identity of the students and scores on the PILL, CAT, MAACL-R, and CABQ. Differences between beginning GPA and Midterm GPA were analyzed using one-way analyses of variance (ANOVA). There were a total of 60 students with beginning and midterm grade point averages with means and standard deviations experimental $n=11$ (.249, 1.16), control $n=11$ (-.018, 1.10), no-writing $n=38$ (-.393, .958). A one way analysis of variance was conducted to evaluate group differences in beginning GPA and midterm GPA. The ANOVA was not significant ($F_{(2,119)} = .709$, $p<.494$ indicating there was no statistically significant difference in the experimental, control, and no-writing groups and beginning GPA and midterm GPA.

The essays were analyzed based on the Pennebaker's Linguistic Inquiry and Word Count (LIWC 2007). Words were counted based on the LIWC dictionary of almost 4,500 words and word stems. Each of the default LIWC 2007 categories is composed of a list of dictionary words that define that scale. There are four categories each with separate scales. The four categories are Linguistic processes, Psychological processes, Personal concerns and Spoken word. The Linguistic processes, Psychological processes and Personal concerns were the dependent variables with group as the independent variable. A total of 46 students participated in the mean and standard deviation for the category linguistic processes were experimental group $n= 23$ (197.4, 115.5), control group $n=23$

(190.6, 16.1). Mean and standard deviation for the psychological processes were experimental group *(90.1, 16.2)*, control group *(50.4, 10.0)* and for the personal concern category the mean and standard deviation were experimental group *(11.4, 3.0)* and control group *(14.0, 5.4)*.

The purpose of this study was could a short-term expressive writing intervention improve academic performance, reduce physical health complaints, and improve psychological well-being, for a sample of third semester freshmen students participating in the University College Academic Success Program? The intent was to look at instruments that measured the constructs that identified overall adjustment and predictions of midterm grade point average. Although no statistical significant differences were found between the experimental, control, and no-writing groups on the College Adjustment Test, the idea that these students are in the Academic Success Program does infer that they are possible having some difficulty with college adjustment. Likewise the results show no significant differences for the College Activities and Behavior Questionnaire. However, inferences can be made for the experimental, control and no-writing group's level of participation in college activities also based on their poor academic performance.

Social adjustment is fundamental for everyone, but particularly important for young adults engaged in the process of individuation from their family. Moving away from home to live in residence likely accelerates this process. Although not statistically significant the scores on the homesickness scale for the three groups were in the low20's (with the highest possible score being 36) possibly indicating some level of missing

family and friends. Also, need for affiliation had a direct impact on social integration, and achievement need, a measure of the degree of effort and quality of effort an individual expends to surmount obstacles, was directly related to academic integration, social integration, and goal commitment (Pascarella & Chapman, 1983).

Research has shown that self-esteem is negatively correlated with loneliness (Ginter & Dwinell, 1994) which, in turn, predicts student adjustment (McWhirter, 1997). Students who had difficulty meeting people and making new friends or who tended to cope with difficult situations by isolating themselves had more difficulty adjusting than those who were more social (Tinto, 1993). Aspinwall and Taylor (1992) reported that the beneficial effects of self-esteem on academic adjustment during the freshman year were mediated by the tendency to use active coping instead of avoidance coping, and the greater use of social supports. A limitation of the study was the lack of participation needed to get the post writing data to confirm college adjustment.

For the results on the Multiple Affect Adjective Check list-R and Pennebaker Inventory of Limbic Languidness between the experimental, control and no-writing groups a more appropriate inference would have been possible with pre and post results. Psychosocial factors, rather then directly impacting performance outcomes such as GPA or persistence, mediate the antecedents to these outcomes. For example, self-esteem, although not directly related to persistence, had a direct impact on three key constructs within Tinto's model, namely academic integration, social integration, and institutional commitment (Munro, 1981). A limitation of the study was the lack of post- writing data. Clearly if provided, the data could have increased our understanding of this sample

population's physical health symptoms and psychological well-being. These two instruments have been used in multiple other studies to evaluate increases or decreases in physical health symptoms and psychological well-being along with expressive writing.

The results of the Adjective Check List measured personality characteristics and clearly accounted for most of the differences between these three groups. According to Russell and Petrie (1992) personality factors predictive of academic adjustment include personality measures, locus of control, self-esteem, and trait anxiety. There is little evidence to support the notion that there is a unique personality profile which identifies the students who will persist in college as different from those who will withdraw (Ratcliff, 1991; Tinto, 1993). Some studies suggest, however, that specific personality characteristics may discriminate students who were academically successful from those who were unsuccessful. According to the ACL manual, the lower scores on the Self-confidence scale may indicate that the students in the experimental group may have more difficulty in mobilizing their resources and taking action than the students in the control and no-writing groups. These students may also be may be more anxious, high strung, and moody, avoid close relationships with others, and worry about their ability to deal with the stresses and strains of their lives based on the low scores on the Personal Adjustment scale. The students in the experimental group may be less masculine and more dependent and unassuming than the students in the control or no-writing groups. These students may also keep others at a distance, are skeptical of their intentions, and reject overtures.

A growing body of evidence indicates that one of the most predictive factors of academic adjustment is self-esteem, a term often used interchangeably with self-concept, self-perception or self-worth (Byrne, 1996). Self-esteem is a positive or negative attitude toward oneself (Rosenberg, 1965) and the personal judgment of worthiness. Some studies report that a sense of self-confidence, enhanced in part by informal contacts with faculty, predicts academic adjustment and persistence (Cohorn & Giulliano, 1999; Gerdes & Mallinckrodt, 1994). In this study although the experimental group's means were lower on the scales that were statistically significantly different than the control, and no-writing groups mean, the experimental group's GPA actually increased from the beginning of the semester to midterm semester. However, looking at the overall mean for beginning GPA, for some of these students the beginning GPA was so below the average that obtaining a 3.0 for the semester would not have brought them up to the required 2.0.

The results are also limited in identifying racial/ ethnic responses due to the population for this semester. Although research has shown racial gaps for minority students in this study there were not enough minority students to identify racial differences.

Content analysis of the expressive writings had limitations also, due to only getting the first writing. However research has shown it benefits from other populations of students to incarcerated prison and chronically ill patients. No doubt the intent was to add to that body of knowledge. For this study, the experimental group used more words relating to the psychological processes and personal concerns than the control group, and this possibly due to the differences in writing instructions. The experimental group's GPA did increase from beginning semester to midterm, and it can be inferred that taking the

time to look at their values may have helped increase their motivation to academically perform better.

Limitations

A limitation of the study was the lack of post- writing data. The results are also limited in identifying racial/ ethnic responses due to the population for this semester. Content analysis of the expressive writings had limitations also, due to only getting the first writing. Another limitation was size of the groups with the no-writing group being 3 times larger than both the experimental and control groups.

Implications for Future Research

This pilot study indicates a need to continue this study with pre and post data and the three days of writing to continue to identify if this interventions can help reduce anxiety and" psychological threat" for underperforming third semester students. The limitations can be the focus of future research. Content analysis of the expressive writings had limitations also, due to only getting the first writing. The reduction in anxiety was never meant to be accomplished overnight; the purpose to write using self-affirmation for over a three day period comes from prior research indicating that a change in thinking is a process that takes time. Future research could identify ways to increase participation with

this population. I believe this study adds to the literature by confirming a need for an intervention to help reduce anxiety to help improve academic performance possibly just by the students lack of participation in this study. Also future research could include a longitude study to look at how other interventions might reduce anxiety in this population and possible identify correlations that can better assist in course instruction. Future research could also look at how gender and race play as variables in identifying "psychological threat" in this population.

Since according to (Tinto,1993) 75% of students who drop out of college do so within the first two years and the greatest proportion of these students drop out after the first year, it is critically important to understand the complex forces that influence successful academic adjustment during the first year. It is projected that college attendance will continue to grow by 12% between now and 2012 to include 17.6 million people enrolled in college courses (National Center for Education Statistics, 2003). With increased attendance come increased proportions of students who might face difficulties adjusting to the college environment. There are a variety of ways in which to go about identifying students who are having trouble adjusting to college. For instance, adjustment may be measured by acquiring student's self-reports of their attachment to a university (i.e. writing intervention) participation in campus activities, psychological well-being and academic standing.

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APPENDICES

APPENDIX A

The PILL

Name_____

Several common symptoms or bodily sensations are listed below. Most people have experienced most of them at one time or another. We are currently interested in finding out how prevalent each symptom is among various groups of people. On the page below, write how frequently you experience each symptom since you wrote your third essay. For all items, use the following scale:

A	B	C	D	E
Have never or almost never	Less than 3 or 4 times per week	2 or 3 days a week	1 day a week or so for	Every day for 1 week or
more				
experienced the symptom		1 or 2 weeks		

For example, if your eyes tend to water once every week or two, you would answer "D" next to question #1.

1. Eyes water____
2. Itchy eyes or skin___
3. Ringing in ears___
4. Temporary deafness or hard of hearing_____
5. Lump in throat_____
6. Choking sensation_____
7. Sneezing spells_____
8. Running nose_____ face_____
9. Congested nose_____ face_____
10. Bleeding nose_____
11. Asthma or wheezing_____ weather_____
12. Coughing_____ bites_____
13. Out of breath_____
14. Swollen ankles_____ head_____
15. Chest pains_____
16. Racing heart_____
17. Cold hands or feet even in hot weather_____
18. Leg cramps_____

28. Swollen joints_____
29. Stiff or sore muscles_____
30. Back pain_____
31. Sensitive or tender skin_____
32. Face flushes_____
33. Tightness in chest_____
34. Skin rash_____
35. Acne or pimples on
36. Acne/pimples other than
37. Boils_____
38. Sweat even in cold
39. Strong reactions to insect
40. Headaches_____
41. Feeling pressure in
42. Hot flashes_____
43. Chills_____
44. Dizziness___
45. Feel faint_____

19. Insomnia or difficulty sleeping_____
    body____
20. Toothaches____
21. Upset stomach_____
22. Indigestion_____
23. Heartburn or gas_____
24. Abdominal pain_____
25. Diarrhea____
26. Constipation___
27. Hemorrhoids____

46. Numbness or tingling in any part of
47. Twitching of eyelid_____
48. Twitching other than eyelid_____
49. Hands tremble or shake_____
50. Stiff joints_____
51. Sore muscles_____
52. Sore throat_____
53. Sunburn____
54. Nausea_____

Since the beginning of the semester, how many:
Visits have you made to the student health center or private physician for
illness_____
Days have you been sick_____
Days your activity has been restricted due to illness_____

APPENDIX B

CAT

Name_____

Use a 7-point scale to answer each of the following questions where:

1   2   3   4   5   6   7

Not at all   Somewhat   A great deal

Within the LAST WEEK, to what degree have you:

1. Missed your friends from high school_____

2. Missed your home_____

3. Missed your parents and other family members_____

4. Worried about how you will perform academically at college_____

5. Worried about love or intimate relationship with others_____

6. Worried about the way you looked_____

7. Worried about the impression you make on others_____

8. Worried about being in college in general_____

9. Liked your classes___

10. Liked your roommate(s)_____

11. Liked being away from your parents_____

12. Liked your social life_____

13. Liked college in general_____

14. Felt angry_____

15. Felt lonely_____

16. Felt anxious or nervous_____

17. Felt depressed_____

18. Felt optimistic about your future at college

19. Felt good about yourself_____

APPENDIX C

College Activities and Behaviors Questionnaire

Name_____

Within the last week, how MANY TIMES have you done each of the following:

1. Number of times exercised strenuously_____

2. Number of times had difficulty falling asleep____

3. Talked on the phone to one or both parents_____

4. Talked on the phone to old friends who are not at your college_____

5. Visited a physician or the student health center for illness_____

6. Ate far too much at one meal_____

7. Had a heart-to - heart talk with someone here at college_____

8. Attended a meeting of an organization (e.g., church, fraternity)_____

9. Studied_____(also estimate the number of hours) _____

10. Thought about dropping out of college_____

11. Talked or corresponded with an old girlfriend or boyfriend_____

12. Made a new friend_____

13. Received a traffic ticket (including parking violation)_____

14. Written down your deepest thoughts and feelings_____

   In the last week, how many of the following have you consumed:

15. Alcoholic beverages_____   16. Doses of prescribed drugs_____

17. Cigarettes_____   18. Doses of nonprescribed
    drugs_____   drugs

19. Cups of coffee_____   20. Snacks with sugar_____

21. Aspirin or other pain reliever____ 22. Vitamins_____

APPENDIX D

MULTIPLE AFFECT ADJECTIVE CHECK LIST-REVISED

	A	D	H	PA	SS	Dys	PASS	NO. CHECKED
Raw Score								
T - Score								

Multiple Affect Adjective Check List - R (MAACL-R)

1. ○ active
2. ○ adventurous
3. ○ affectionate
4. ○ afraid
5. ○ agitated
6. ○ agreeable
7. ○ aggressive
8. ○ alive
9. ○ alone
10. ○ amiable
11. ○ amused
12. ○ angry
13. ○ annoyed
14. ○ awful
15. ○ bashful
16. ○ bitter
17. ○ blue
18. ○ bored
19. ○ calm
20. ○ cautious
21. ○ cheerful
22. ○ clean
23. ○ complaining
24. ○ contented
25. ○ contrary
26. ○ cool
27. ○ cooperative
28. ○ critical
29. ○ cross
30. ○ cruel
31. ○ daring

34. ○ devoted
35. ○ disagreeable
36. ○ discontented
37. ○ discouraged
38. ○ disgusted
39. ○ displeased
40. ○ energetic
41. ○ enraged
42. ○ enthusiastic
43. ○ fearful
44. ○ fine
45. ○ fit
46. ○ forlorn
47. ○ frank
48. ○ free
49. ○ friendly
50. ○ frightened
51. ○ furious
52. ○ lively
53. ○ gentle
54. ○ glad
55. ○ gloomy
56. ○ good
57. ○ good-natured
58. ○ grim
59. ○ happy
60. ○ healthy
61. ○ hopeless
62. ○ hostile
63. ○ impatient
64. ○ incensed

67. ○ interested
68. ○ irritated
69. ○ jealous
70. ○ joyful
71. ○ kindly
72. ○ lonely
73. ○ lost
74. ○ loving
75. ○ low
76. ○ lucky
77. ○ mad
78. ○ mean
79. ○ meek
80. ○ merry
81. ○ mild
82. ○ miserable
83. ○ nervous
84. ○ obliging
85. ○ offended
86. ○ outraged
87. ○ panicky
88. ○ patient
89. ○ peaceful
90. ○ pleased
91. ○ pleasant
92. ○ polite
93. ○ powerful
94. ○ quiet
95. ○ reckless
96. ○ rejected
97. ○ rough

100. ○ satisfied
101. ○ secure
102. ○ shaky
103. ○ shy
104. ○ soothed
105. ○ steady
106. ○ stubborn
107. ○ stormy
108. ○ strong
109. ○ suffering
110. ○ sullen
111. ○ sunk
112. ○ sympathetic
113. ○ tame
114. ○ tender
115. ○ tense
116. ○ terrible
117. ○ terrified
118. ○ thoughtful
119. ○ timid
120. ○ tormented
121. ○ understanding
122. ○ unhappy
123. ○ unsociable
124. ○ upset
125. ○ vexed
126. ○ warm
127. ○ whole
128. ○ wild
129. ○ willful
130. ○ wilted

For Dissertation and Thesis Appendices:

You cannot include an entire instrument in your thesis or dissertation, however you can use up to five sample items. Academic committees understand the requirements of copyright and are satisfied with sample items for appendices and tables. For customers needing permission to reproduce five sample items in a proposal, thesis, or dissertation the following page includes the permission form and reference information needed to satisfy the requirements of an academic committee.

Putting Mind Garden Instruments on the Web:

If your research uses a Web form, you will need to meet Mind Garden's requirements by following the procedure described at http://www.mindgarden.com/how.htm#instrumentweb.

All Other Special Reproductions:

For any other special purposes requiring permissions for reproduction of this instrument, please contact info@mindgarden.com.

APPENDIX E

PERMISSION TO USE ACL

APPENDIX F

RESULTS BETWEEN GROUPS ON THE ADJECTIVE CHECK LIST

| Scales | Groups | | | | | | | | |
| | Experimental | | Control | | No-writing | | | | |
	M	SD	M	SD	M	SD	F	p	η^2
Number Checked	28.1	21.0	38.0	18.0	42.0	20.1	4.43	.014	.069
Favorable	26.1	22.0	38.0	22.1	34.4	22.3	1.82	165	
Unfavorable	38.0	27.1	43.0	19.0	45.0	19.0	1.12	.331	
Commonality	25.0	20.0	35.3	19.0	36.6	16.0	4.40	.014	.069
Achievement	28.1	21.1	41.0	18.0	37.1	15.1	3.71	.027	.060
Dominance	31.0	24.0	45.6	20.0	43.0	17.1	4.37	.015	.068
Endurance	26.0	20.2	40.6	18.0	37.2	15.3	5.22	.007	.081
Order	26.0	20.2	38.2	17.0	36.0	15.0	3.88	.023	.061
Intraception	29.4	21.0	38.7	19.0	40.3	18.0	3.31	.040	.053
Nurturance	30.0	21.4	45.3	19.0	43.0	17.0	5.09	.008	.079
Affiliation	30.3	21.5	45.3	19.2	43.2	17.0	5.13	.007	.079
Heterosexuality	34.0	24.7	49.3	20.1	48.0	19.0	4.65	.011	.072
Exhibition	38.0	27.4	49.0	20.2	49.2	19.0	2.77	.067	
Autonomy	38.0	26.3	48.0	20.0	46.3	17.6	1.84	.163	
Aggression	37.0	26.0	46.3	20.0	48.0	18.5	2.63	.077	
Change	35.0	24.5	44.1	18.3	45.1	18.0	2.63	.077	
Succorance	35.2	25.3	40.0	18.0	45.0	18.0	2.35	.099	
Abasement	34.1	24.1	40.0	17.2	42.5	16.7	1.87	.159	

RESULTS BETWEEN GROUPS FOR THE ADJECTIVE CHECK LIST
(CON'T)

Scales	Groups								
	Experimental		Control		No-Writing		F	p	η^2
	M	SD	M	SD	M	SD			
Deference	31.3	21.4	41.2	17.6	40.1	15.4	2.70	.071	
Counseling Readiness	35.3	25.4	40.1	20.0	43.4	18.0	1.53	.221	
Self-Control	29.4	21.4	37.1	16.0	37.0	15.1	1.97	.144	
Self- Confidence	32.0	23.1	47.3	21.0	43.3	17.4	4.08	.019	.064
Personal Adjustment	29.7	21.2	46.0	20.0	41.2	17.0	5.03	.008	.078
Ideal Self	33.2	23.6	45.4	20.0	41.1	16.7	2.59	.079	
Creative Personality	34.7	24.1	45.5	20.0	44.1	17.3	2.41	.094	
Military leadership	27.0	18.8	35.3	15.3	34.5	14.4	2.30	.106	
Masculine Attributes	33.9	23.8	46.7	20.4	46.7	17.6	3.64	.029	.052
Feminine Attributes	29.0	20.6	37.8	16.1	39.0	16.0	3.16	.046	.050
Critical Parent	33.2	23.2	41.8	18.8	41.9	17.7	1.90	.154	
Nurturing Parent	31.0	21.7	43.4	18.7	41.0	16.2	3.48	.034	.055
Adult	29.6	20.9	38.8	16.9	37.1	14.6	2.27	.108	
Free Child	35.1	25.2	50.0	20.0	47.0	17.8	3.91	.023	.062
Adapted Child	37.7	26.0	44.3	18.6	48.7	18.6	.272	.070	
Welsh A-1	41.7	30.0	56.8	24.2	59.0	22.6	4.54	.013	.071
Welsh A-2	33.0	23.2	41.6	18.0	44.3	18.6	3.11	.048	.050
Welsh A-3	30.0	21.7	44.0	19.0	44.0	17.9	5.47	.005	.084
Welsh A-4	28.7	20.7	37.7	16.0	36.9	15.0	2.43	.092	

APPENDIX G
DEMOGRAPHIC FORM

PLEASE COMPLETE THE FOLLOWING FORM SO THAT WE MIGHT
GATHER SOME INFORMATION ABOUT YOU

NAME:

AGE:

RACE/CULTURAL: CAUCASIAN   AFRICAN AMERICAN

                HISPANIC   OTHER

GENDER: MALE   FEMALE

NUMBER OF SIBLINGS

FIRST GENERATION COLLEGE ATTENDEE   YES   NO

HIGHEST EDUCATION FOR MOTHER:

HIGHEST EDUCATION FOR FATHER:

PROPOSED OR ACTUAL MAJOR

APPENDIX H
INFORMED CONSENT DOCUMENT
OLD DOMINION UNIVERSITY

PROJECT TITLE: "A Pilot Study to Explore the Use of Expressive Writing to Reduce Anxiety and Psychological Threat in an Academic Setting"

INTRODUCTION

The purpose of this form is to give you information that may affect your decision whether to say YES or NO to participation in this research on **Expressive Writing**, and to record the consent of those who say YES.

RESEARCHERS

The Responsible Project Investigator is Nina W. Brown, Ed.D. LPC, NCC, FAGPA; Professor and Eminent Scholar of Counseling, College of Education, Educational Leadership and Counseling Department. The Principal Investigator is Cynthia D. Jenkins, Ed.S. Doctoral student, College of Education, Educational Leadership and Counseling Department

DESCRIPTION OF RESEARCH STUDY

Several studies have been conducted looking into the subject of the impact of expressive writing on academic performance. None have focused on college students, the effect on their physical health as has been found from other studies with expressive writing. This study will examine the outcomes on academic performance and self-reported physical health for a sample of college students compared to controls.

If you decide to participate, then you will join a study where you will be one of two hundred or more participants in a study involving guided writing for 15 minutes each day for three (3) days, pre-and post assessments of physical concerns and academic performance, along with a one month follow-up assessment of physical health concerns, and academic performance.

If you say **YES**, then your participation will last for three days for data collection, and approximately 20 minutes one month later to fill out forms. Approximately 280 subjects will be participating in this study.

EXCLUSIONARY CRITERIA

NONE

RISKS AND BENEFITS

RISKS: No risks are identified with this research, but as with any research, there is some possibility that you may be subject to risks that have not yet been identified. If at anytime your participation causes you any increased psychological discomfort, you may stop your participation. There are two campus facilities you

may utilize if you so desire, Student Health Services 1007 S. Webb Center, 683-3132 and / or Office of Counseling Services 1526 Webb Center, 683-4401.

BENEFITS: The main benefit to you for participating in this study is the possibility of increased academic performance

COSTS AND PAYMENTS

The researchers want your decision about participating in this study to be absolutely voluntary.

The researchers are unable to give you any payment for participating in this study.

NEW INFORMATION

If the researchers find new information during this study that would reasonably change your decision about participating, then they will give it to you.

CONFIDENTIALITY

All information obtained about you in this study is strictly confidential unless disclosure is required by law. The results of this study may be used in reports, presentations and publications utilizing the aggregated and analyzed results, but the researcher will not identify you.

WITHDRAWAL PRIVILEGE

It is OK for you to say NO. Even if you say YES now, you are free to say NO later, and walk away or withdraw from the study -- at any time. Your decision will not affect your relationship with Old Dominion University, or otherwise cause a loss of benefits to which you might otherwise be entitled.

COMPENSATION FOR ILLNESS AND INJURY

If you say YES, then your consent in this document does not waive any of your legal rights. However, in the event of harm, injury, or illness arising from this study, neither Old Dominion University nor the researchers are able to give you any money, insurance coverage, free medical care, or any other compensation for such injury. In the event that you suffer injury as a result of participation in this research project, you may contact Dr. Brown at 757 683-3245 or Dr. George Maihafer the current IRB chair at 757-683-4520 at Old Dominion University, who will be glad to review the matter with you.

VOLUNTARY CONSENT

By signing this form, you are saying several things. You are saying that you have read this form or have had it read to you, that you are satisfied that you understand this form, the research study, and its risks and benefits. The researchers should have answered any questions you may have had about the research. If you have any questions later on, then the researchers should be able to answer them: Dr. Nina W. Brown; 757 683-3245

If at any time you feel pressured to participate, or if you have any questions about your rights or this form, then you should call Dr. George Maihafer, the current IRB chair, at 757-683-4520, or the Old Dominion University Office of Research, at 757-683-3460.

And importantly, by signing below, you are telling the researcher YES, that you agree to participate in this study. The researcher should give you a copy of this form for your records.

Subject's Printed Name & Signature ____   Date

Parent / Legally Authorized Representative's Printed Name & Signature (If applicable)   Date

INVESTIGATOR'S STATEMENT

I certify that I have explained to this subject the nature and purpose of this research, including benefits, risks, costs, and
any experimental procedures. I have described the rights and protections afforded to human subjects and have done
nothing to pressure, coerce, or falsely entice this subject into participating. I am aware of my obligations under state and
federal laws, and promise compliance. I have answered the subject's questions and have encouraged him/her to ask
additional questions at any time during the course of this study. I have witnessed the above signature(s) on this consent
form.

Investigator's Printed Name & Signature   Date

APPENDIX I
INFORMED CONSENT DOCUMENT
OLD DOMINION UNIVERSITY

PROJECT TITLE: "A Pilot Study to Explore the Use of Expressive Writing to Reduce Anxiety and Psychological Threat in an Academic Setting"

INTRODUCTION

The purpose of this form is to give you information that may affect your decision whether to say YES or NO to participation in this research on **Expressive Writing**, and to record the consent of those who say YES.

RESEARCHERS

The Responsible Project Investigator is Nina W. Brown, Ed.D. LPC, NCC, FAGPA; Professor and Eminent Scholar of Counseling, College of Education, Educational Leadership and Counseling Department. The Principal Investigator is Cynthia D. Jenkins, Ed.S. Doctoral student, College of Education, Educational Leadership and Counseling Department

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Several studies have been conducted looking into the subject of the impact of expressive writing on academic performance. None have focused on college students, the effect on their physical health as has been found from other studies with expressive writing. This study will examine the outcomes on academic performance and self-reported physical health for a sample of college students compared to controls.

If you decide to participate, then you will join a study where you will be one of two hundred or more participants in a study involving guided writing for 15 minutes each day for three (3) days, pre-and post assessments of physical concerns and academic performance, along with a one month follow-up assessment of physical health concerns, and academic performance. You will not be asked to write you will be asked about your current physical health symptoms, current feelings, and your activities by completing a variety of instruments.

If you say YES, then your participation will last for two days for data collection, and approximately 20 minutes one month later to fill out forms. Approximately 280 subjects will be participating in this study.

EXCLUSIONARY CRITERIA

NONE

RISKS AND BENEFITS

RISKS: No risks are identified with this research, but as with any research, there is some possibility that you may be subject to risks that have not yet been

identified. If at anytime your participation causes you any increased psychological discomfort, you may stop your participation. There are two campus facilities you may utilize if you so desire, Student Health Services 1007 S. Webb Center, 683-3132 and / or Office of Counseling Services 1526 Webb Center, 683-4401.

BENEFITS: The main benefit to you for participating in this study is the possibility of increased academic performance

COSTS AND PAYMENTS

The researchers want your decision about participating in this study to be absolutely voluntary.

The researchers are unable to give you any payment for participating in this study.

NEW INFORMATION

If the researchers find new information during this study that would reasonably change your decision about participating, then they will give it to you.

CONFIDENTIALITY

All information obtained about you in this study is strictly confidential unless disclosure is required by law. The results of this study may be used in reports, presentations and publications utilizing the aggregated and analyzed results, but the researcher will not identify you.

WITHDRAWAL PRIVILEGE

It is OK for you to say NO. Even if you say YES now, you are free to say NO later, and walk away or withdraw from the study -- at any time. Your decision will not affect your relationship with Old Dominion University, or otherwise cause a loss of benefits to which you might otherwise be entitled.

COMPENSATION FOR ILLNESS AND INJURY

If you say YES, then your consent in this document does not waive any of your legal rights. However, in the event of harm, injury, or illness arising from this study, neither Old Dominion University nor the researchers are able to give you any money, insurance coverage, free medical care, or any other compensation for such injury. In the event that you suffer injury as a result of participation in this research project, you may contact Dr. Brown at 757 683-3245 or Dr. George Maihafer the current IRB chair at 757-683-4520 at Old Dominion University, who will be glad to review the matter with you.

VOLUNTARY CONSENT

By signing this form, you are saying several things. You are saying that you have read this form or have had it read to you, that you are satisfied that you understand this form, the research study, and its risks and benefits. The researchers should have answered any questions you may have had about the research. If you have any questions later on, then the researchers should be able to answer them: Dr. Nina W. Brown; 757 683-3245

If at any time you feel pressured to participate, or if you have any questions about your rights or this form, then you should call Dr. George Maihafer, the current IRB chair, at 757-683-4520, or the Old Dominion University Office of Research, at 757-683-3460.

And importantly, by signing below, you are telling the researcher YES, that you agree to participate in this study. The researcher should give you a copy of this form for your records.

Subject's Printed Name & Signature ____   Date

Parent / Legally Authorized Representative's Printed Name & Signature (If applicable)   Date

INVESTIGATOR'S STATEMENT

I certify that I have explained to this subject the nature and purpose of this research, including benefits, risks, costs, and
any experimental procedures. I have described the rights and protections afforded to human subjects and have done
nothing to pressure, coerce, or falsely entice this subject into participating. I am aware of my obligations under state and
federal laws, and promise compliance. I have answered the subject's questions and have encouraged him/her to ask
additional questions at any time during the course of this study. I have witnessed the above signature(s) on this consent
form.

Investigator's Printed Name & Signature   Date

APPENDIX J

INSTITIUTIONAL REVIEW BOARD APPROVAL

LETTER

No.: 08-091

OLD DOMINION UNIVERSITY
HUMAN SUBJECTS INSTITUTIONAL REVIEW BOARD
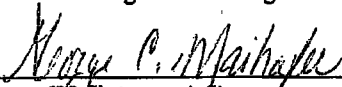## RESEARCH PROPOSAL REVIEW NOTIFICATION FORM

TO: Nina Brown   DATE: October 15, 2008
Responsible Project Investigator   *IRB Decision Date*

RE: A Pilot Study to Explore the Use of Expressive Writing to Reduce Anxiety and
Psychological Threat in an Academic Setting
Name of Project

Please be informed that your research protocol has received approval by the Institutional
Review Board. Your research protocol is:

     __ Approved (expedited review)
     ___ Tabled/Disapproved
     _X_ Approved contingent on making the changes below*

                 IRB Chairperson's Signature   October 15, 2008
                                               date

Contact the IRB for clarification of the terms of your research, or if you wish to make
ANY change to your research protocol.

The approval expires one year from the IRB decision date. You must submit a Progress
Report and seek re-approval if you wish to continue data collection or analysis beyond
that date, or a Close-out report. You must report adverse events experienced by subjects
to the IRB chair in a timely manner (see university policy).

---

*   Approval of your research is CONTINGENT upon the satisfactory completion of
the following changes and attestation to those changes by the chairperson of the
Institutional Review Board. Research may not begin until after this attestation.

    *   The proposal should be developed as a Form C with an accompanying informed
consent document that follows the template found on the Web site of the Office of
Research (http://www.odu.edu/ao/research/forms/index.shtml). Dr. Maihafer will
work with Dr. Brown and Ms. Jenkins if they have any questions in the development
of this proposal in the Form C format. Once they have crafted the application in this
format, Dr. Brown will submit one copy of the Form C and two copies of the
Informed Consent document to Dr. Maihafer for review and approval.

Attestation

As directed by the Institutional Review Board, the Responsible Project Investigator made the above changes. Research may begin.

_____   November 14, 2008
       IRB Chairperson's Signature   *date*

433 Cobblewood Arch   Phone Number 757-436-1556
Chesapeake Virginia 23320   E-mail Address
jcynchy2@ Aol.com

Cynthia Jenkins

Education

(2008) Currently a PhD student in the Counseling program at Old Dominion University
Norfolk Virginia, expected graduation May, 2009.

Completing requirements for Licensed Professional Counselor

(2008) certified Non-Violent Crisis Prevention Instructor, Crisis Prevention Institute
(2005) Old Dominion University Educational Specialist in Education with an emphasis in
Counseling, Norfolk Virginia

(2006) Certified Instructor of CPR and First Aid through the American Heart Association

(2001) Old Dominion University Masters of Science in Education with an emphasis in
Counseling, Norfolk Virginia

(1998) Old Dominion University Bachelors of Science, Norfolk Virginia

Research Interests

- Crisis Counseling
- Mental Health Emergencies
- Foster Care/Adoption

Professional Experience

8/2003 to present: Bon Secours of Hampton Roads- DePaul Hospital, Norfolk Virginia.
Crisis Intervention Counselor Provides 24 hour coverage to the Emergency Department

to assess patient's mental health status at the request of the Emergency Department Physician using Brief Solution-Focused therapy. Evaluate the need for acute hospitalization, based on suicidal or homicidal ideations, plan and/or attempts, and /or inability to care for self due to a mental illness. Facilitate in-patient psychiatric admission and linkage with appropriate community resources for substance abuse and mental health treatment when needed. Maintain accurate documentation and provide clinical supervision for other crisis counselors. Conduct Non-Violent Crisis Prevention training to hospital staff.

5/2004 to present: Kids &Us Childcare Center Richmond, Virginia. Continuing Education Trainer: Provides training in team building, effective communication, conflict resolution and CPR.

5/2000 to 8/2003: Norfolk Community Service Board, Norfolk Virginia. Case Manager III Intensive. Assist clients that are assessed during intake with a need for intensive case management. Responsible for linking clients that had been recently discharged from a psychiatric hospital with community resources for entitlements, housing, and substance abuse treatment. Developed treatment plans and maintain appropriate documentation. Responsible for linking clients with resources for medication monitoring and psychiatric evaluation. Schedule and provide transportation to scheduled psychiatric appointments and medication pick-up, and crisis intervention.

11/99 to 9/2000: Newport News Community Service Board, Newport News Virginia Professional Parent. Provided an adolescent that had been in a residential facility with a home in the community, Responsible for assessing community resources for psychiatric and therapist appointments, Coordinated with school board for education requirements. Responsible for participating in FABT, IEP and treatment team meetings. Monitored behavior, provided crisis intervention and medication dispensing.

7/99 to 11/99: Norfolk Community Service Board, Norfolk, Virginia. Case Manager III Dual Diagnosis. Responsible for linking clients that had both a mental health diagnosis and substance abuse concerns with services with substance abuse programs. Responsible for developing client -centered treatment plans, assisting clients with resources for housing food, and clothing. Scheduled and assisted with transportation to medical appointments and medicine pick-up, and provided crisis intervention counseling

1/98 to 11\2001: Maryview Behavioral Medicine Center, Portsmouth, Virginia Mental Health Counselor. Conducted and ran groups in Pain Management, conducted one to one interviews in the Adult/ Chemical dependency and Adolescent departments. Provided assessments and redirection on the Crisis Unit, observing and recording changes in behavior, offered clients encouragement and support in working their programs. Facilitated groups in depression, dual diagnosis, addiction process, recovery process, relapse prevention etc. Also conducted family sessions on the Adult/Chemical Dependency Unit

Professional   American Counseling Association

Memberships

Teaching Experience: Psychoeducational Groups- Masters Level Students, team taught with Dr. Nina Brown

Presentations   Annual Christian Women's Retreat

                        May 2005 Cleveland Ohio

                        Theme: There is a Balm in Gilead

                        Presentation: Emotional Healing

                        Southern Association for Counselor Education and Supervision

                        Convention (SACES)

                        October 24, 2008

                        Houston, Texas

                        Presentation: Limiting the Counselor Educator's Liability as a Supervisor

                        of Internship Students