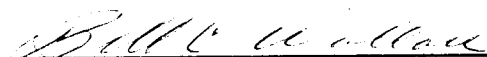
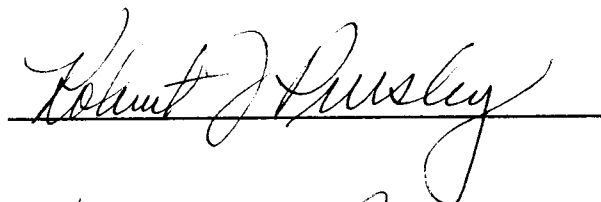


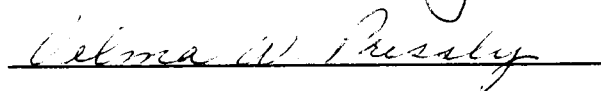
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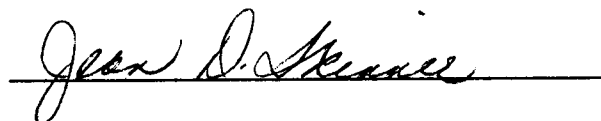
I am submitting herewith a dissertation written by Joyce Edward Edelen entitled "The Relationship of Stressful College Life Events and Depressive Symptomatology to Health Practices." I have examined the final copy of this dissertation for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Doctor of Education, with a major in Health Education.


Bill C. Wallace
Major Professor

We have read this dissertation
and recommend its acceptance:







Accepted for the Council:


Vice Provost
Dean of The Graduate School

THE RELATIONSHIP OF STRESSFUL COLLEGE LIFE EVENTS
AND DEPRESSIVE SYMPTOMATOLOGY
TO HEALTH PRACTICES

A Dissertation
Presented for the
Doctor of Education
Degree
The University of Tennessee, Knoxville

Joyce Edward Edelen

August 1990

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DEDICATION

To Stephanie and Amber, my granddaughters--may their youthful curiosity, caring nature, and health remain throughout their life.

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The author wishes to thank the many people who contributed toward the completion of this work.

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ABSTRACT

The purpose of the study was to investigate the relationship of stressful college life events, and depressive symptomatology to health practices in a group of students at the University of Tennessee, Knoxville. The College Student Life Events Schedule, The Beck Depression Inventory and the College Health Risk Inventory were administered to volunteers from selected classes.

Descriptive statistics and frequencies described the sample of 355 students. Hypotheses were tested to determine if there was a significant difference in the overall total scores of health practices for those students with high, medium, and low stressful college life events and non, mild, moderate, and severe depression; and if there was a significant correlation among individual health practices, stressful college life events, and depression. A factor analysis of the College Health Risk Inventory revealed 5 factors.

College stressful life events were ranked and categorized into relationships, health, school/academics, death/loss/separation, financial problems, housing and violence/law. The average number of stressful college life events was 13.49, 29.91% scored in depressed categories, and 40.51% scored in the good category for health practices.

Results showed a significant difference in the overall total health practices for those students who had a low number of stressful college life events. Significance was found for the overall total health practices for those students who were nondepressed. Females had significantly higher scores on health practices for college stressful life events and depressive symptomatology. One of the factors, Angry, Helpless-Hopeless correlated significantly with college stressful life events and depressive symptomatology. The following conclusions were drawn:

1. As stressful college life events increase, overall health practices decrease. Those students who had low stressful college life events had better overall health practices.

2. As depressive symptomatology increases, overall health practices decrease. Those students who were in the nondepressed category had better overall health practices.

3. Individual health practices tend not to be related to stressful college life events or depressive symptomatology, except for one factor, Angry, Helpless-Hopeless. There is an inconsistency in the relationship of individual health practices with other variables, and the need for separate analysis.

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CHAPTER I

INTRODUCTION

During the nineteenth century, health problems of infectious and communicable diseases led to the germ theory which brought specific diseases under control (Berkman & Breslow 1983). The medical and germ theory led to the belief that each disease had one cause and one cure, and that chronic disease can be abolished by a single cure. Thus, the thinking that certain habits "cause" a specific disease, is widely assumed despite the fact that the majority of those exposed do not succumb to the disorder in question (Justice 1987).

Thirty years of intensive research, however, have so far failed to discover the single "cause" of cancer, heart attack, or mental illness. The time has now come to consider another concept of disease etiology. (Thomas 1981, p. 41)

The other concept, Thomas (1981) calls the kaleidoscope model. That model, rooted in psychobiology, states that many genetic and environmental factors enter into the health equation. It is the overall pattern that determines the outcome and as life goes on, the "kaleidoscope" turns a little when each new positive or negative factor is added.

The causes of premature death are heart disease, cancer, stroke, and cirrhosis of the liver (National Center

for Health Statistics 1988). These diseases can be controlled by changing or modifying behavior, lifestyle, and risk factors (Justice 1987). It is believed that major health problems involve attitudes and behaviors that interfere with an individual's ability to maximize health, participate in health maintenance or cope with chronic disease (Fox 1982). There is evidence, as well, that supports the claim that stressful life events have a harmful effect on physical and emotional health (Brown & Lawton 1986). Holmes and Rahe (1967) found a relationship between the number of recent life experiences and physical and psychological disturbances. Persons under high stress have been shown to be more susceptible to a variety of health related problems, such as tuberculosis, multiple sclerosis, and cancer, as well as other less serious somatic problems (Dohrenwend & Dohrenwend 1974). Subjects with high levels of stress were reported to have poorer health practices and more negative changes in health behaviors, while future illness correlated significantly with both departure from health behaviors and stressful life events (Pardine et al. 1983). Stress has been shown to act directly to affect illness as well as indirectly by changing health practices (Weibe 1986).

Psychiatric disorders, such as the onset of a depressive episode appear more likely to develop under

conditions of high stress (Paykel 1974). Mental health is a leading cause of death for the 15-24 age group with a suicide rate that has increased from 5 in 100,000 in 1961 to 13 per 100,000 in 1983, a 150% increase. The personal health care costs of mental health exceed \$20 billion per year, with the total economic cost including lost productivity could be over \$185 billion per year (Barchas et al. 1985).

Today's health professionals recognize the importance of environmental, social and psychological factors that affect the health of the individual (Sagan 1987). Derek Bok former president of Harvard University (1984), pointed to the inadequacy of science alone to deal with disease. He urged Harvard Medical School, "to understand the emotional, psychological and cultural underpinnings of human behavior, including the interweaving of the mind and body in health" (p. 11).

Health educators must stay in tune with science in working to seek new ways in which knowledge and attitudes can be transformed into positive health behavior; "the function of the health educator is to bridge the gap between what is known about optimum health practice and what is actually practiced" (Upchurch 1976).

A. NEED FOR THE STUDY

There is a need to explore new variables which could influence and motivate positive health behaviors in order to consider alternatives in moderating negative health behaviors.

The recognition of the importance of appropriate maintenance behaviors in avoiding many of the serious illnesses of adult life has led to increased interest in assessing variables which may enhance our understanding of the reasons that some people engage in behaviors known to promote their health, while others actively pursue behaviors known to be detrimental to their health. (Kaplan et al. 1984)

Because habits are formed and changed more easily in youth rather than in older adults it is beneficial to reach groups of individuals before habits are formed and while those individuals are in formative or transitory stages of life. College is one time of transition, high peer pressure, and experimentation. Students are faced with numerous decisions, problems, and new choices, such as what major to pursue, lifestyle decisions, and being on their own for the first time (Page 1987). It is a time of separation from friends, family, and familiar surroundings for many. When young adults leave home stress occurs not only from the adaptation to change and the need to achieve personal independence, but to resolve a basic developmental task relevant to family life (Kunze 1985).

During this time of transition, new environment and responsibilities, stressful life events may lead to depression in the college student. There is a possibility that low grade stress and strain may be a potent antecedent to depression, perhaps outweighing major stresses of life (Willner 1985). College students are at a disproportionately high risk for depression (Lopez 1986). There is a considerable body of evidence that educational problems are very common in referred patients with depression (Angold 1988). It has been estimated that 25% of college students suffer from depression at any one time (Beck & Young 1978). The incidence rates for depression and suicide are significantly higher for college students than for noncollege peers (Bumberry et al. 1978). Yet little research has been devoted to the investigation of factors that may lead to depression, other than among psychiatric patients (Vredenburg & O'Brien 1988).

Numerous studies have been carried out on individual health behaviors and depression, the majority of them being with high school students. Drugs, alcohol, and depression were studied (Deykin et al. 1987; Clifford et al. 1984; Stephan 1986; Newcomb 1986; Zuckerman 1987) and exercise and depression (Hayden 1984; Ross 1988). The majority of these populations were adults or individuals seeking psychiatric care. Depression and nutrition were studied in relation to

anorexia, bulimia and weight (Sours 1981; Pyle et al. 1981; Kaplan et al. 1988). Few studies have researched depression and smoking (Miller et al. 1985; Kaplan 1984). Limited studies have researched health behaviors (practices/habits) as a whole in relation to depression in the adolescent population (Kaplan 1980; 1984).

No research was found that examined the composite of health practices with stressful college life events and depression in the college population. There is a need to study these relationships in this population, which could lead to a reason some individuals practice healthy behaviors and others do not.

The college campus can be viewed as a micro society. It is possible that depressive behavior would be a normal adaption to stress and the hassles and uplifts of university student life (Gupta 1982).

Whereas the college environment may bring on stressful life events which are unique to college life, stressful life events and depression may lead to poor health practices. It is possible that certain practices become coping mechanisms for dealing with depression and stress. Kleinke (1984) reported cigarette smoking, the use of tranquilizer drugs, alcohol, use of marijuana, spending considerable amount of time alone, or sleeping excessively, were coping mechanisms for depressed college men and women. In

discussing the prevalence of depression, Elliot S. Gershon of the National Institute of Mental Health called it a chilling fact that we may be on the verge of an epidemic like increase of mania, depression, and suicide, that this could be the public health problem of the 1990's. There is further evidence that harmful behaviors that accompany depression, such as suicide attempts, drug abuse, anorexia, bulimia, and juvenile delinquency, may be methods that young people use in trying to cope with the anguish they feel (Alper 1986).

Health education has a responsibility to consider new alternatives which may reinforce positive health practices. Students may recognize the need to change health practices but may not realize the underlying reason for their continuance or be able to make a change on their own. Research needs to examine psychological variables that could produce change in health practices. This knowledge could help lay the basis for teaching new coping skills that would benefit the student in years to come.

B. PURPOSE OF THE STUDY

The purpose of this study was to investigate the relationship of stressful college life events and depressive symptomatology to health practices. A secondary purpose was to determine which health practices have a significant

relationship to stressful college life events and depressive symptomatology.

C. STATEMENT OF THE PROBLEM

The basic problem of this study was to examine stressful college life events, depressive symptomatology, and health practices of a group of students at the University of Tennessee, Knoxville and to determine if there was a significant difference in health practices for those students whose stressful life events and depressive symptomatology were high as compared to those students whose stressful life events and depressive symptomatology were low.

The following research questions were developed to address the problem:

1. Was there a significant difference in health practices for those students whose stressful life events were high as compared to those students whose stressful life events were low?

2. Was there a significant difference in health practices for those students whose depressive symptomatology was high as compared to those students whose depressive symptomatology was low?

3. What health practices have a significant correlation to stressful life events and depressive symptomatology?

D. HYPOTHESES

The following hypotheses were tested:

1. There is no significant difference in the total scores of health practices, as measured by the College Health Risk Inventory, for those students whose stressful college life events were high, as measured by The College Life Events Schedule, when compared to those students whose stressful life events were low.

2. There is no significant difference in the total scores of health practices, as measured by the College Health Risk Inventory, for those students whose depressive symptomatology was high, as measured by the Beck Depression Inventory, when compared to those students whose depressive symptomatology was low.

3. There will be no significant correlation when certain health practices are correlated with stressful college life events and depressive symptomatology.

E. ASSUMPTIONS

The following assumptions were made regarding this study:

1. The responses to the instruments used in this study were honest and accurate.

2. The three instruments used in this study were valid and reliable.

F. LIMITATIONS

The following limitations were made for this study:

1. While specific instructions were given for the completion and standardization of each instrument, there may have been occurrences over which the researcher had no control.

2. The study population was limited to certain classes with a varied representation of colleges of the University of Tennessee, Knoxville, however all colleges were not represented.

G. DELIMITATIONS

The following delimitations were made for this study:

1. The student sample for this study was delimited to personal health, nutrition and women's health classes, at the University of Tennessee, Knoxville, during the fall semester of 1989, therefore findings cannot be generalized.

2. This study is not concerned with clinical depression or bi-polar depression, but with depressive symptomatology.

3. This study focused on a composite of health practices for certain analysis and certain components of health practices for other analysis.

H. DEFINITIONS OF TERMS

The following terms are defined as they were specifically used for this study;

1. Depression. A term used to designate a complex pattern of deviations in feeling, thoughts and behavior. These are associated with a symptom complex or syndrome which otherwise is not represented by a distinct psychiatric or physical disorder. Symptoms range from mild to severe. It is the inability to experience pleasure and the loss of interest in pleasurable activities. Major depression differs from mild depression only in intensity and duration (Angold 1988; Willner 1985).

2. Bi-Polar Depression. The presence of prior manic or hypomanic episodes (Willner 1985).

3. Uni-Polar Depression. The absence of manic or hypomanic episodes. Bi-polar and uni-polar do not differ markedly in the quality or mental state (Willner 1985).

4. Clinical Depression. Endogenous depression which could be caused by internal factors usually characterized by melancholia (Willner 1985; Josvengher 1988).

5. Depressive Symptomatology. Symptoms may be one or any combination of the following with the duration and intensity differing by individual and episode: a) negative feelings toward self; b) reduction in gratification; c) loss of emotional attachments; d) crying spells; e) loss of sense of humor; f) low self-evaluation; g) negative expectations; h) self-blame, self criticism; i) indecisiveness (Beck 1967).

6. DSM III-R. In the United States, The Diagnostic and Statistical Manual of Psychiatric Illness is the most widely used system of psychiatric diagnosis (Gold et al. 1988; American Psychiatric Association 1987).

7. Risk Factor. Anything in one's thinking, behavior, body or environment that increases the likelihood of illness (Justice 1987).

8. Health Behavior. "any activity undertaken by a person believing himself to be healthy, for the purpose of preventing disease or detecting it in an asymptomatic stage" (Kasl & Cobb 1966, p. 246). Health check ups, dental care, and immunizations (Goldsmith Cwikel et al. 1988).

9. Health Practices. Behaviors that are health promotive and monitor sleep, diet, exercise, alcohol, and cigarette use (Belloc & Breslow 1972; Goldsmith Cwikel et al. 1988).

10. Life Events. Occurrences that typically change the usual activities of most individuals who experience them (Dowhrenwend 1978).

I. ORGANIZATION OF THE STUDY

This study was organized as follows:

Chapter I includes the introduction, need for the study, purpose of the study, statement of the problem, hypotheses, assumptions, limitations, delimitations, definition of terms, and organization of the study.

Chapter II consists of a review of the literature.

Chapter III presents the research methodology and includes sample selection, selection of the instruments, data collection and procedures, and methods of data analysis.

Chapter IV includes the data analysis.

Chapter V contains the summary, findings, conclusions and recommendations.

CHAPTER II

REVIEW OF THE LITERATURE

In this chapter a review of the literature includes writings and research of significant people in the fields of stressful life events, depressive symptomatology, and health practices. The majority of studies of stressful life events are limited to college age students, with reference made to empirical studies in the field. Studies of depression and depressive symptomatology are predominately in special settings, the adolescent, and adult populations, with few of the college age student. The research in health practices are related to depressive symptomatology and are of specific health practices. Part I includes stressful life events; part II covers writings on depression and its meaning and includes theories of depression, epidemiology of depressive symptomatology and depression in the college student. Part III reviews the literature on health practices in general and health practices and depression.

In the early 1900's the effects of mental health on physical health was the focus of a longitudinal study involving 204 adolescent men who were followed biennially. Of the 59 men with the best mental health between ages 21 and 46 years old, only two became chronically ill or died by

the age of 53. Of those with poorer mental health at that same age, between 21 and 46 years old, there were 18 who became chronically ill or died. The study also reported that the relationship of mental health and future physical health remained statistically significant even when the effects of alcohol, tobacco use, obesity, and longevity of ancestors were excluded. The implications of the study suggested that being chronically anxious, depressed, or emotionally distressed, can produce profound effects on the individual and lead to the susceptibility to a variety of diseases (Vaillant 1979).

A. STRESSFUL LIFE EVENTS

While psychological state affects health (Justice 1987) at the same time health behaviors, such as smoking, obesity, inactivity, and alcohol abuse are referred to as psychological issues (Sagan 1986). One such variable that may affect psychological state is stressful or negative life events. Many empirical studies have documented the positive relationship between negative life experiences, physical health, and psychiatric health problems (Dohrenwend & Dohrenwend 1974; Holmes & Rahe 1967; Rabkin 1976). In a path analytic study investigating the relationship between stress, illness, social support, and health practices this relationship was supported. The more stress reported, the

greater number of illnesses. Life events had the strongest direct effect on illness. The more health practices a person participated in along with social support, the fewer illnesses. These findings were consistent with other researchers who concurred that one's ability to resist illness may be altered by the number of life change events, particularly a cluster of events that occur within a short period of time (Aboud 1988).

Pardine et al. (1983) reported poorer normal health practices and more negative health behavior changes when there were higher levels of stress. Both life stress and change in health behavior correlated significantly with future illness. Stress related health behavior departures contributed as much to the stress-illness relationship as stress did independently. These findings were again supported in a study of health practices and hardiness as mediators in the stress-illness relationship which revealed that stress acted directly to affect illness as well as indirectly by changing health practices (Wiebe 1986).

Life events have been studied in relation to health habits. Drinking patterns and life events were significantly related when examined along with depressive symptomatology. Heavy drinkers reported more stressful events along with the likelihood of being a heavy drinker as the number of events increased. A greater number of events

were associated with higher depressive symptomatology scores. Depression was highest among heavy drinkers and lowest among moderate drinkers. Life events were most strongly related to depressive symptomatology for heavy drinkers and abstainers. Among moderate drinkers, however, life events had almost no relationship to depressive symptomatology (Neff 1982).

Exercise, as a moderator for the negative effects of stress and psychological well-being, was studied in a group of adolescent girls to assess whether the negative impact of high stress would be less severe for those who exercised regularly. Those girls who exercised frequently showed evidence of only minor physical health problems when under conditions of high stress. For those girls who reported they exercised infrequently, there was a significant correlation between life events stress and health. Emotional well-being, as measured by depressed mood, was sheltered from the adverse affects of high stress, for those who exercised regularly. Those who did not had a more negative response from stress (Brown 1987).

The perception of stress level was researched as a moderator of the relationship between negative life events and depression. For those whose perceived level of stress was low, there was only a minimal impact of negative changes on depression level. The opposite was true for those whose

perceived level of stress was high. There was a more pronounced relationship between negative changes and depression. These findings supported the researchers hypothesis that the global level of perceived stress is a moderator between negative life events and depression (Kuiper 1986).

Life stress in the college population has been associated with depression. Three psychosocial factors are considered to be significantly related to depression: a family history of psychiatric illness, stressful life events, and a lack of social support. A fourth factor, the loss of a nurturing person during childhood or adolescence, was also related to depression. Stressful life events were regarded as precipitating factors, while social support was a modifying factor. Three groups of life events were particularly stressful for students: recent loss of a parent or other significant person, financial problems, and changes in academic or living conditions. The lack of at least one confidant was the most single important modifying factor for depressive symptoms. In addition, the lifestyle and way the family coped with illness, emotional or physical, clearly influenced the student's coping style (O'Neil 1988).

The increasing societal interest in the effects of stress and in holistic approaches to health is reflected in

the interest in stress and stress management on college and university campuses (Archer 1985). Two studies have assessed the personal and academic stressors of the college campus. The major academic stressors were tests, finals, performance anxiety, and scheduling. Grade competition, professors, classroom environment, and career and future success were others. Personal stressors were intimate relationships, parental conflicts and expectations, finances, interpersonal conflicts with friends and others, and judgement and acceptance by peers (Archer 1985).

Contradictory to what is generally thought of college as a time for the good life, it is for most late adolescents a prime time for stress. Students may experience problems and anxieties related to drastic changes in living arrangements, maintaining self esteem, and making new friends. A study, in which stress responses were solicited from college students over a period four years for the purpose of the development of an instrument, reported these findings. Data were collected from 23 universities in 21 states. Four categories emerged from the responses: home and community factors, academic factors, personal factors, and relationship factors. Final examination week was ranked as stressor number one with test anxiety and academic workload second and third. Women reported high stress scores in all categories. The mean scores for women showed

little change by grade level. The men's scores increased with every grade level. Commuters had lower stress than noncommuters, and married men and women reported less stress (Bush 1985).

The older or nontraditional student is becoming increasingly a larger proportion of the university campus. Age and sex were covariates for a study concerned with the sex differences in negative life events, the use of student services in response to negative life events, and sources of information and barriers to the use of student services. For the total sample, failing an important examination was reported most frequently. Other events were dropping a course, financial problems concerning school, major change in financial status, and major change in sleep habits. Ten events were different for age groups. Traditional students experienced stress due to changes in sleeping habits, death of a close family member, minor law violations, change in residence, breaking up with boyfriend or girlfriend, failing an examination, and dropping a course. Nontraditional students reported stress in trouble with in-laws and a change in number of arguments with spouse (Okun 1986).

B. DEPRESSION: ITS MEANING AND DESCRIPTION

When describing depression, the meaning of the whole must be grasped rather than understanding only one part.

Just as one uses the word cold to describe the weather, it can also be used to describe a bodily disorder. So is the word, "depression" used in varying contexts in today's English language.

Depression can be referred to as a mood, a feeling, or a syndrome made up of clinical disorders, or a down swing which is a part of daily living that everyone experiences from time to time. The syndrome may be comprised of mood disorder, psychomotor changes, a variety of somatic conditions, and vegetative disturbances. Throughout history descriptions of depression have been supported by the separation of mental and physical processes (Gold et al. Part I 1988). The mind-body question of depression still remains a controversy with the dualist view still holding to the belief that some depressions are "psychological" and others are "biological". One writer states this is a false dichotomy in that all depressions are necessarily both. "They are psychological by virtue of being a mental phenomena and biological because mental phenomena must have a physical basis in the brain" (Willner 1985, p. 29). Davitz (1969) used 1200 language students to describe specific emotions. A dictionary of words were then compiled and categorized into 5 clusters of descriptions of depression. The feeling was characterized by hypoactivity, moving away, discomfort, incompetence, dissatisfaction, and

inadequacy. These perceptions of depression were incorporated in the diagnostic criteria used today in the United States for psychiatric diagnosis, The DSM-III (American Psychiatric Association 1987). The criteria used for diagnosis reflects both psychological and biological components of the disorder: depressed mood, withdrawal of interests, feelings of worthlessness, anorexia and/or hypersomnia. The DSM-III specifies that a major depressive episode must last for a period of 2 weeks but has been criticized for failure to require recurrence as a diagnostic criteria. Recurrences occur in both bipolar and unipolar depressions. Generally bipolar depression occurs in the early twenties while unipolar depression often starts in midlife with recurrence increasing as a function of the number of previous episodes (Gold et al. Part I 1988). Following an initial episode, severe depression tends to reoccur at intervals throughout life. When an initial attack occurs before age thirty, it tends to be shorter in duration than when occurring after thirty (Willner 1985). According to Beck (1973) 47% will have a recurrence at some time in their lives.

Melancholic or endogenous depression, is the inability to experience pleasure, depressed mood, hyposomnia, anorexia, daily variation in mood, and accounts for 40-60% of all hospitalization for depressive disorders (Klerman

1984). Melancholic depression crosses both unipolar and bipolar, and serves as an example of the varying psychological and physiologic features of depression. It is unclear whether depression represents a group of separate illnesses or a single pathophysiologic syndrome. At the present time, no biologic marker has been identified for major depression. Attempts to distinguish between major depression and various depressive symptoms must rely on diagnostic instruments based on observations. Depression is often masked by somatic conditions. If missed by an attending physician, valuable time will be spent searching for the physical cause, while the patient may be on the brink of suicide (Beck 1973).

Theories of Depression

The Psychodynamic Theory. The psychodynamic view of depression states that a chronic childhood exposed to hypercritical, exploitative or an emotionally unresponsive environment makes it difficult to maintain self-esteem and to respond effectively to life stress. These experiences in childhood produce a burden on poorly integrated feelings that can emerge by way of reflex in adult life at a time of disappointment or loss. Defenses are built up which opens the adult to potentially damaging stress (Gold et al. 1988 Part I).

The Neurotransmitter Hypothesis. The catecholamine or norepinephrine hypothesis of depression rose out of observations of hypertensive patients. It was noticed that depressive symptoms developed in approximately 15% of the patients treated with the biogenic amine-depleting agent, reserpine. Consequently this led to the use of tricyclic agents to treat depression. This hypothesis states that the disorder resulted from a functional deficit, or norepinephrine at critical sites in the central nervous system (Schildkraut 1965).

The way in which the nervous system is affected by thinking has been discovered by physics and the neurosciences. Thinking, the intangible, can affect nerve endings, the tangible, and release chemical transmitters. The neurosciences and field of molecular psychology is finding that just as brain chemicals are able to change thoughts, so also do thoughts change chemicals and the way we feel. This theory is the beginning of the removal of the mind/body barrier that has existed (Justice 1987).

The Cognitive Theory. This theory views the causes of depression to be a disorder of distorted thinking as the psychological precursor. Distorted thoughts, may be enhanced by all-or-nothing thinking. The person's thinking is reflected in self-concept, personal relationships to family and friends. Neutral statements are turned into

degrading thoughts and the individual overestimates obstacles that may stand in the way of goals, while small setbacks are viewed as inadequacy (Beck 1976). Mood and thought distortions become a continuous cycle. Depressed mood produces cognitive distortions which increase unpleasant events, which further depress mood. Sad thoughts increase the accessibility of unpleasant memories which further increase sad thoughts. A high level of unpleasant events will decrease the pleasantness of pleasant events, leading to a decrease in pleasure seeking, a reduction in the frequency of pleasant events, and a consequent increase in unpleasantness and unpleasant events (Willner 1985).

In a study of cognitive style and depression with young mothers as subjects, it was reported that negative cognitive style may act to increase the risk of depression even in the absence of life-event stress, while there is evidence that most depressions are precipitated by life events (Parry 1988).

Epidemiology of Depressive Symptomatology

The point prevalence of depressive symptomatology for the general population was 20-25% (Kaplan 1987) while 15% of the population will experience at least one serious bout of depression at some time. It is estimated that over nine

million people suffer from affective disorders (Barchas et al. 1985).

In a longitudinal study of the ongoing Human Population Study of depressive symptoms in an urban community (Kaplan 1987) the highest rates were for black females followed by nonblack females, black males, and nonblack males. The strongest predictors of high levels of depressive symptoms were variables associated with physical health problems. Increasing age was significantly associated with decreased risk. There was an increased risk of depression with personal uncertainty even when adjusted for social isolation. Life stress represented another factor of risk for depressive symptoms. According to this study, 20-25% of a community sample has any such symptoms.

Vega et al. (1987) studied depressive symptomatology in Northern Mexican Adults. That study reported similar risks for depression as in the United States. Predisposing factors were low socioeconomic status, female gender, disrupted marital status, unemployment, and poor health as high risks for symptoms.

Adult outcome of adolescent depressive symptoms have been studied. When depressive mood was examined at 15 and 16 years of age and nine years later at 24 and 25 years of age in a group of students enrolled in a New York high school, feelings of dysphoria in adolescence predicted most

strongly a similar episode in adulthood. It also predicted psychiatric hospitalization for women but not for men (Kandel 1986).

In reviewing childhood and adolescent depression, it was found that depressive disorders were uncommon in prepubertal children but 4 years later revealed a tenfold increase in depression diagnosis and symptoms. Women had twice as many depressive symptoms as men, and higher scores were found in lower socioeconomic status. There was evidence that disordered family functioning is involved in the wide range of child psychiatric problems. Other factors were controlling and restrictive parenting along with overinhibited behavior. Environmental factors such as bereavement, parental separation and divorce were reported in depressed children (Angold 1988).

In a study of junior and senior high school students, the younger adolescents were found to be less depressed than older adolescents, with no difference between male and females. Lower socioeconomic students had higher scores and were more depressed than did higher socioeconomic students (Kaplan et al. 1984).

Behaviors used by teenagers that would identify peers who were depressed were surveyed. The conceptions and causes of depression as expressed by adolescents were boredom, loneliness, use of drugs, poor body image, grades, and

pregnancy. Depression, as the adolescent saw it, was brought on primarily from conflicts with significant others (Siegel 1983).

In examining the increase in mental disorders over the past seven years, the greatest increase is accounted for in three groups: 1) neurotic personality disorders and psychosomatic illness, 2) depressive disorders, and 3) alcohol related disorders. The visible frequency of depressive disorders has sharply increased over the last two decades. Since the American society has become an individually oriented society as opposed to a struggling community for survival, a lowering of the threshold of tolerance of depressive symptoms has been noted. This could mean that depressive disorders that do not keep a person from functioning will be defined as an illness only when society attaches enough attention and importance to an individual's well being (Hafner 1985).

Depression and the College Student

With young adulthood being a time for experimentation, vulnerability, and separation from family, the college student is at a disproportionately high risk for depression (Lopez 1986). For depressed students, one-third will be subclinical but a large percentage will need professional help. Depressed students see themselves as being alone,

although depression in others is common in their environment. They cannot evaluate the seriousness of their own problems whether or not they should seek professional help (Beck 1978). Another author states that such depression in university students bears the same resemblance to clinical depression (Bumberry 1978).

Leaving home for college is an important passage toward autonomy and personal independence. Depression and maladjustment in the young adult have been associated with several features of family structure. Four features are found in the literature: 1) parent, child overinvolvement, 2) parent, child role reversals, 3) marital instability, and 4) parent child coalitions. In families where the student has taken on varying roles, it becomes the reasoning for avoiding the tasks of forming intimate peer relationships, or making long term career decisions. In any of these cases, the parent and child give up age appropriate responsibilities as a way of cooperating in order to preserve the sense of family. Men tended to be more independent of parents than women with a negative correlation between college adjustment and separation (Lopez 1986).

In a study of depression related to calendar time, leaving home, and examinations, there was no significant association between normal versus depressed students when

follow up tests were given. However, groups that were tested only once, 17% scored depressed and 83% were nondepressed. In this study depression is portrayed as touching one in six at any point in time. Upperclassmen and graduate students were depressed more often than underclassmen (Oliver 1979).

Irrational beliefs were explored in relation to depression in a group of university students. Problem avoidance and anxious overconcern accounted for the variance in depressed and not depressed students. When extreme groups were used for categorizing depression, there was a moderate level of depression for the upper extreme group (Hogg 1986).

Personality factors that affect depression in the college student have been examined. Depressed students were characterized by a lower level of assertiveness, with both other students and professors, a higher level of dysfunctional attitudes, less perceived control over their depressions and a lower degree of instrumentality, only 8% had sought professional help, and none of the subjects said they would turn to a professional for help with problems. A larger proportion of depressed subjects reported having considered suicide in the past. Subjects felt their depression was more than simple mood swings, and that the depression they felt was more severe than what others

experienced. They also felt that their depressions had increased since starting in the university (Vredenburg et al. 1988).

The demographics of suicide show that college age men and women are at a particular high risk. In 1981, college age men (18-24) had a suicide rate that was 3.8 to 4.6 times that of women in this age group. The age groups of 20-24 and 25-29 years of age had somewhat elevated rates when viewed in relation to older groups. For women of traditional college age the suicide rate was 3.3 for ages 15-19 and increased to 5.6 for women in their early twenties. Additionally, on a very large campus, out of 45,000 full time students, as many as 5 suicides and 50 suicide attempts can be anticipated annually (USDHHS 1986; Schwartz 1988).

C. HEALTH PRACTICES

The study of seven health habits, known as the "Alameda 7" were studied in California during the mid-1960's. Results showed seven specific habits were related to health status and long term survival. These habits were having never smoked, drinking less than 5 drinks at one sitting, sleeping 7-8 hours a night, exercising, maintaining desirable weight, avoiding snacks, and eating breakfast. Moreover, the health habits were addictive, and people who

practiced more of the positive habits lived longer (Berkman & Breslow 1983).

The 1985 Health Promotion and Disease Prevention Survey (HPDPS the 1985 NHIS) gathered data for men and women according to selected sociodemographic characteristics. Smoking, alcohol consumption, and exercise were found to differ markedly in men and women. The age level for the HPDPS began at 18 years of age, whereas the Alameda County Study included adults of 20 years of age and over. The 1985 NHIS shows results of the 18-29 years age group as follows: 30% men and 30 % of women rarely ate breakfast; 45% of men and 39% of women snacked almost every day; 16% of men and 5% of women drank more than 5 drinks at a time; 32% of men and 31% of women were current smokers: 15% of men and 8% of women were 10% above desired body weight; and 35% and 51% of women were sedentary in their activity (Thronberry et al. 1986).

Five lifestyle health practices were investigated in their relationship to social support, stress, and illness. Smoking, exercise, alcohol use, weight maintenance and sleep were measured in a study of employees of 2 large engineering companies. For every age group and sex, high risk health practices were associated with higher mortality rates. Those with low risk health practices had lowest mortality rates (Abood 1988).

The National Adolescent Student Health Survey (American School Health Association 1988; Portnoy & Christenson 1989) of health knowledge, attitudes and behaviors reported findings of eight health areas. Reported from a randomly selected sample of 11,419 eighth and tenth graders, the survey covered areas of Aids, consumer health, drug and alcohol use, injury prevention, nutrition, sexually transmitted disease, suicide and violence. Also included were questions on nutrition, smoking, exercise, and the use of seat belts. Most participants knew how Aids was transmitted and that condoms are effective in avoiding the disease. Many had misconceptions about blood transfusions and the contacting the disease. More boys (18%) than girls (4%) believed it is acceptable for people their age to have sex with many partners. Fifty-five percent did not know that taking birth control pills is ineffective in avoiding STD. About 42% of girls and 25% of boys reported they had seriously thought about suicide. For girls 18% had tried it whereas 11% of boys had tried it. Both sexes said it is hard for them to deal with stressful situations and to find help. Adolescents put themselves at risk while driving. About 44% of tenth graders and 32% of eighth graders reported riding with a driver who used drugs or alcohol. Twenty-one percent of the sample smoked while one half knew that smoking poses a high risk for cancer. The consumption

of fat and fiber were examined in relation to cancer. Data suggested that students lacked essential knowledge to make informed choices in diet. Students did not know the role of fiber in cancer protection, and lacked the skills to choose high fiber foods. They knew that frying increased fat content, but they still ate fried foods too often particularly snacks. For those students who had some form of nutrition education (74%) there was a positive relationship between increased knowledge and positive diet practices.

Personal health choices and attitudes about alcohol and tobacco use, physical activity, weight control, eating habits, stress management and seat belt use were surveyed in a group of college students. The survey showed 18.9% smoked cigarettes with more females smoking than males. A high proportion of the students, 92.3%, reported drinking alcohol within the last month, with males drinking an average of 9.9 days per month as compared to 6.7 days per month for females. More than half of the males believed they drank in an excessive amount of alcohol. In regard to body weight, only 29.1% of the students rated their body weight as being just right. Females were more likely to be unsatisfied with their weight than males. Approximately 31% of the students said they ate a healthy diet. Only one third of the sample had a regular schedule of physical activity and reported

they did not relax a sufficient amount. The researcher concluded that a significant proportion of college students maintained lifestyle behaviors that may predispose them to serious health problems (Page 1987).

In a Health Risk Appraisal survey of clients attending university services at the University of Windsor, Ontario, profiles of health habits were reported. Findings showed that 7.8% of the sample were overweight, with twice as many females overweight than males. Findings about physical activity revealed that 11.7% of the population engaged in little or no physical activity, with 46% reporting occasional activity. In regard to smokers, 21% of the students surveyed were active smokers, with the highest group between 20-24 years. Around 75% consumed alcoholic beverages, with the difference in sexes being the amount of alcohol consumed, with males consuming more than females. The researchers noted that many students have appraised ages ranging from 10 to 22 years higher than their actual ages (Gupta 1985).

With today's health problems it is necessary to bring about positive changes in lifestyle and behavior. Health education can be used to encourage these changes while incorporating the development and needs of the whole person (Chandler 1985).

Health Behaviors and Depression

Few studies have been done collectively on health behaviors and depression. One study examined the relationship of health habits and depression in high school students. The researchers revealed six behaviors, which they termed adverse health behaviors, that were highly related to each other. They were cigarette smoking, beer drinking, liquor drinking, wine drinking, smoking pot, and the use of drugs other than marijuana. Drinking liquor correlated weakly but significantly with depression as did cigarette smoking, and the use of drugs other than marijuana. When each of the adverse behaviors was correlated with depression items, relationships existed among suicidal thoughts, appetite loss, and being discouraged about the future. Most of the variance of the mean adverse health behaviors was explained by suicidal ideation and hopelessness (Kaplan et al. 1984).

In an earlier study by Kaplan et al. (1980) the researchers reported findings that smoking, overweight, and drug abuse in adolescence were associated with increased depression. Those who smoked were more frequently depressed than those who did not, and those who used drugs other than marijuana were more frequently depressed than those who did not.

Substance Abuse. The review of the literature on health behaviors revealed numerous studies in which there was a relationship among alcohol, drugs, and depression. In the adolescent student population, there was a progressive increase of depressive mood as nonusers progressed to users. Depressed mood increased with the use of tobacco, alcohol, to psychotropics used without prescription, to marijuana, psychedelics, amphetamines, cocaine, and to heroin users. Regular users of alcohol, psychotropic pills and illicit drugs had higher levels of depressive mood as well (Stefanis 1986).

In a study of multiple drug use based on clients admitted to outpatient drug treatment programs, only 16% of the clients under 18 years of age were heavy drug users as compared to 37% between the ages of 18 and 25. Depression was associated with multiple drug use as well. Thirty-seven percent of the most depressed clients were multiple drug users as compared to 21% of those with lowest depression. Drug use, deviant behavior, and depression were examined in this study. In the nondepressed, nondeviant behavior group, only small proportions were multiple drug users, whereas those who were depressed and those who were deviant were heavy drug users (Kleinman et al. 1988).

A possible causal link between depression, mood, and substance use was suggested. Rejecting the biological-

pharmacological view that depression is secondary due to drug effect over time, Stefanis (1986) implied this was not true. Rather than a prolonged use of drugs, his study group was the experimenter and irregular user. Also, no specific drug differences in level and rates of depressive mood were observed. This suggested a possible causal relationship between substance use and depressed mood.

The relationship of depression preceding substance use was further supported by Harlow et al. (1986). A theoretical model was proposed and examined which hypothesized that depression and self-derogation may lead to a lack of purpose in life, which in turn, may lead to suicide ideation and substance abuse. The model was supported by the data. Men and women reacted differently, however, to depression and self-derogation. Men were more apt to turn to drugs and alcohol, whereas women considered suicide. Harlow (1986) stated that "negative feelings and thoughts (i.e. depression self-derogation) can be seen as precursors to a lack of purpose in life for young adults, regardless of sex" (p. 18). A lack of purpose of life then may lead to substance abuse, as verified by this model.

In a longitudinal study of New York state secondary schools, over one academic year, depressive mood was related to the onset of marijuana among nonusers as well as to the termination of marijuana use. Depressive mood was found to

be a predictor of the use of other illicit drugs by marijuana users. The authors were careful to say that this did not present a causal relationship between depression and marijuana (Paton et al. 1977). Although there may be other variables which seem to be one reason an adolescent may have for using marijuana and experimenting with other drugs. Paton (1978) later affirmed that the psychological factors of depressive mood and normlessness have a moderate, but positive relationship with the use of illegal drugs, particularly drugs other than marijuana in the adolescent population. The effects of a depressive mood and normlessness were maintained when controlled by any other psychological factor.

Risk factors for substance use among adolescents were examined among a sample of high school students. Certain risk factors were found to be associated with frequency of use, ever using and the heavy use of cigarettes, alcohol, cannabis, and hard drugs. Ranging from lowest to highest correlations, were; psychological distress, poor academic achievement, low religiosity, poor relationship with parents, sensation seeking, early alcohol use, adult use, deviance and peer drug use (Newcomb et al. 1986). Yanish and Battle (1985) found a relationship between alcohol consumption and the parental aspect of self-esteem.

A genetic and environmental analysis of twin families was studied in regard to alcohol and depression. There was no significant correlation between alcohol consumption and depression. However, alcohol consumption and depression between members of the twin families were examined. This showed that genetic, shared environmental, and cultural effects can produce correlations between individuals with similar family and environmental backgrounds (Clifford et al. 1984).

An adult group of Middle Tennessee residents were interviewed regarding life events, depressive symptomatology, and drinking patterns. The researchers found that depressive symptomatology was highest among heavy drinkers and lowest among moderate drinkers. Although the data did not show significantly higher levels of depression among drinkers, the greater the number of drinking events reported, the higher the level of depression (Neff 1982).

Very little is written in regard to smoking and depression. Cigarette smoking has been examined as one of the composite behaviors affecting health. Kaplan (1984) found cigarette smoking related to drinking alcohol, soft drinks, and coffee. Smoking for girls was related to light depressive symptoms (Stefanis 1986). Smoking cigarettes was one of ten risk factors associated with substance abuse in high school students (Newcomb 1986). These studies suggest

that smoking may be a precursor to the use of other substances and a habit that accompanies other substance use.

Diet and Depression. There is considerable evidence of mood swings in dieters. Grenier (1983) in studying this problem, found that moods serve to increase eating among dieters who had high weight fluctuations. Eating small amounts of food reduced the depressed mood in high weight fluctuations when small amounts of food were consumed. Larger amounts failed to produce a reduction in depressive mood, as compared to a noneating control group. Mood elevations from all levels of consumption may also increase the frequency of eating episodes when small quantities were consumed. For compulsive eaters, eating may be the major coping skill for coping with unpleasant feelings, especially anxiety and depression. In a study of bulimic college women, Bauer (1983) found a high incidence of depressive symptoms in the group and stated that 13% of the normal college population is bulimic.

Bulimics with a history of anorexia were significantly more depressed than those without anorexia nervosa. The majority of women reported drinking alcohol 1-3 times per week as well (Katzman 1983).

Dysphoric mood was clearly associated with overeating in patients with bulimia, as well as in a group of students who were high restrainers on a weight reducing diet. When

two hour ratings of mood states were taken, compared with average ratings, patients were significantly more irritable, weak, and constrained before a bulimic episode. This study suggested that dysphoric mood states do precede bulimic episodes (Cooper 1986).

Killen (1987) surveyed a group of tenth grade females and discovered that 10.3% met the criteria for bulimia and an additional 10.4% reported purging behavior to control weight. They also reported higher rates of drunkenness, marijuana use, cigarette use, and depressive symptomatology.

In a study of women meeting the DSM-III criteria for bulimia, alcohol use was a problem for a certain group. There were no differences in overall use of alcohol, but in a subgroup of bulimics, bulimia was one of a multiple addictions. Bulimic women also evidenced a greater family history of alcoholism than the control group (Bulik 1987). Depression in this group significantly correlated with the severity of binge eating.

Pyle (1981) studying patients with bulimia, reported most of the individuals were depressed and many appeared to be clinically depressed.

In studying anorexia nervosa, it was noted that mood can vary between euphoria and depression. Depressive mood and reactions may be evident in the family, and anorectics typically have a feeling of being fed up with themselves.

Depression in the anorectic gives way to a sense of helplessness-hopelessness, or rage (Sours 1981).

Perception of body weight has been studied in relation to depressive symptomatology. College students, who reported having a lack of satisfaction with appearance, also reported depressive symptoms (Noles 1985).

In examining the relationship between perceived weight, actual weight and depressive symptoms in adolescents, Kaplan (1988) found a significant interaction of actual weight and sex. Males were more likely to see themselves as underweight, and females were more likely to see themselves as overweight. If males were actually overweight they saw themselves as normal, and if females were actually underweight, they saw themselves as normal or even overweight. Adolescents who saw themselves as normal had significantly lower depression scores.

Exercise and Depression. There is an extensive body of evidence which supports the fact that a regular exercise program results in improved psychological functioning.

A group of university weight trainers participated in a study of the effects of exercise on psychological well being. Passive electronic muscle stimulation was used versus active exercise. Both methods were effective in the improvement of psychological well being. Boyll (1985) and Hayden (1984) reported less depressed individuals when more

aerobic points were earned than those individuals who earned less aerobic points.

Adolescence, being a time of personal adjustment and stress, Brown and Lawton (1986) researched the moderating role of physical exercise moderating stress and well being. Vigorous exercise was associated with lower levels of depressed affect in adolescents. These findings were confirmed in a study of depressed patients whose ages ranged from 16-60 years old. Patients participated in an aerobic exercise program for 6 weeks. For those patients who were in the physical training group, there was a significant reduction in depression scores (Martinsen 1985). During a jogging program over a period of 8 weeks, another group of patients whose ages ranged from 15-38 years of age reported feeling better at the end of the pretest-posttest treatment (Kaplan 1983).

In a sample of adults, Ross (1988) studied exercise and psychologic well being in the community, and it was found that participation in exercise, sports, and other physical activities was associated with improved psychologic well being. The majority of the population, although not severely depressed, did benefit from an exercise program. Decreased symptoms of depression, such as low spirits, feelings that life is not worthwhile, restless, tension and rundown feeling along with trouble sleeping, were relieved.

D. SUMMARY

This review of literature has outlined research and writings of significant people in the area of stressful life events, depressive symptomatology, and health practices. The literature included research in varying settings, age groups, and variables related to each other. Part I reviewed writing on stressful life events. Part II reviewed the meaning of depression, theories, epidemiology of depressive symptomatology and depression in the college student. Part III reviewed the literature on studies of health practices in general and health practices and depression and included substance abuse, diet and exercise.

CHAPTER III

METHODS AND PROCEDURES

A. INTRODUCTION

The purpose of this study was to investigate the relationship of stressful college life events and depressive symptomatology to health practices, and to determine if certain health practices have a significant correlation to stressful college life events or depressive symptomatology. The methods and procedures used in this study are described in the following sections in this chapter: Sample Selection, Instruments, Data Collection, Pilot test and Data Analysis.

B. SAMPLE SELECTION

Subjects were recruited from Personal Health 110, Introduction to Nutrition 100 and Women's Health 425 classes at the University of Tennessee, Knoxville, during the fall semester of 1989. These classes were chosen because various colleges of the university are represented, and the classes provided the numbers which were necessary to obtain a large enough sample to fill all categories of depressive symptomatology that would be needed for data analysis. Bumbery et al. (1982) found it necessary to supplement a

random sample in that study of depression with various large classes. Classes were used by Wiebe (1986) Kaplan (1984) Lopez and Sandler (1982).

C. INSTRUMENTS

The College Student Life Event Schedule (CSLES)

The CSLES (Appendix A) is a self report measure of stressful college life events consisting of 111 items. The scale is a population specific measure developed for the purpose of researching life stress events within a college student population. In the development of the instrument, Sandler and Lackey (1982) described the necessity of using an instrument which consisted of a representative sample of stressful events which occur in college populations and the need to have acceptable psychometric properties. The initial sample of items was developed by having over 200 undergraduates report high-impact events which occurred to them during the last year. From 1,500 events, 111 items were written. One item has since been added to make 112 items, the latter of which is not on the original scale. The item is, "Rejected by all graduate or professional schools you desired to attend."

In answering the questionnaire, the student reports either a positive effect, negative effect, or the event did not occur within the past 12 months. Therefore a life

stress score was assessed by a count, that is, unit score, of self reported negatively perceived life events experienced during the previous year. This method of calculating the number of negative events was used also by Cohen et al. (1986).

Test-retest reliability coefficient for the total event score was ($r(68) = .92$); for the positive event score ($r(68) = .92$); the negative event score was ($r(68) = .89$) (Sandler & Lackey 1982).

Beck Depression Inventory (BDI)

The BDI is a widely used self report instrument used in over 200 studies of both clinical and research groups. It is a 21-item multiple choice measure of affective, cognitive, motivational and physiological areas of depressive symptomatology. Each question provides a choice of response from 0-3. A zero response means the symptom is not present; 1 means the symptom is present and 2 or 3 means the symptom is severe. The total BDI score is the sum of the 21 items and can range from 0-63. Cut off points recommended and validated in the college population (Bumberry et al. 1978) are 0-9, nondepressed; 10-15, mildly depressed; 16-23, moderately depressed and 24-63, severely depressed. A total score of 16+ has been validated to be the cut off score for major depressive disorders (Beck et al.

1961). These cut off points have been validated in a study of college students by Bumbery and Oliver (1978). The possibility of lowering the cut off score for the purpose of detecting the maximum number of depressed persons has been suggested. Cut off scores should be lowered to minimize false negatives even though the number of false positives will increase (Beck & Steer 1987). When compared with the criteria of the DSM III-R, the BDI produces few or no false negatives (Oliver & Simmons 1984).

Split-half reliability for internal consistency was reported to be .86 with Pearson's rho and .93 with Spearman Brown (Beck et al. 1961). The BDI is copyrighted and can be ordered from the address in Appendix B.

College Health Risk Inventory (CHRI)

The CHRI is a 50 item computerized multiple choice self report questionnaire. It was designed by Healthtech Industries Incorporated, Wakefield, Rhode island for the purpose of research.

The CHRI is not based on epidemiological studies as are other health risk appraisals designed for adult populations which make predictions about future health status (Foxman & Edington 1987; Schoenbach et al. 1983). Because there are no epidemiological data available for the college student population the inventory was validated by examination by a

large group of expert panelists. The panelists consisted of health educators, psychologists at college counseling centers, resident life personnel and students at 7 universities. The universities were varied as to size and location. They were: The University of Tennessee, Knoxville; Arizona State; University of California, Long Beach; Purdue; Sheridan College, Canada; Northshore Community College, Boston; and University of Rhode Island. The CHRI was pilot tested at the University of Rhode Island and is therefore said to have face validity. The inventory consists of 5 sections pertaining to demographics, family history and health practices. They are: family history and personal health; smoking, exercise, nutrition (S/E/N); alcohol, drugs and accidents (A/D/A); mental health (M/H) and sexual health. The total possible score is 200. The questions are weighted by categories with the heaviest weight of 70 points given to alcohol, drugs and accidents; 60 points to mental health; 40 points to smoking, exercise and nutrition; 20 points to personal and family history and 10 points to sexual health. The response from each question can be calculated for each individual from the data stored on disk.

The CHRI is answered by completing a scan card which produces a print out for each student. The total score for overall health practices and a score for each category are

given on the printout. Recommendations for improvement and health risks are also given on each printout. A copy of the CHRI is in Appendix C.

D. VARIABLES

Dependent Variable. The scores of health practices as measured by the CHRI were the dependent variables for testing hypotheses.

Independent Variables. The scores of stressful life events as measured by the CSLES and depressive symptomatology as measured by the BDI, were the independent variables.

E. PILOT STUDY

Students were recruited from the class of Human Sexuality 420 to participate in the pilot study. Of the 13 students in the class, 10 were present. Students were asked if they would like to participate in a study of college student life events, feelings, and health practices. Coded packets were prepared for participants which included a consent form (Appendix D), an instruction letter (Appendix E), the instruments, CSLES, BDI and the CHRI. Packets were given out to the 10 students who volunteered. At that time the consent forms were signed, the BDI administered and both collected by the researcher. The cover

letter with specific instructions on the completion of the other two instruments, directions on how to complete the scan card and scan sheet for answering the CSLES and the CHRI were reviewed. Participants were told to complete and return the remaining two instruments at the next class meeting. Of the 10 who volunteered, 9 packets were returned, one student returned the packet but did not fill out section "D1" of the CHRI. Eight completed all instruments correctly. As a result of the pilot study it was decided to give the packet with all three instruments, consent form, and letter of instructions to the volunteers to be completed on their own time and returned at the next class period. This would give consistency to the administration of the instruments as well as allow the subjects to complete them in a relaxed atmosphere on their own time away from class. The cover letter was rewritten to include instructions for all three instruments with specific emphasis on the order in which the instruments were to be completed. The pilot study revealed a need for clearer verbal instructions for the completion of the scan card for answering the CHRI. Clearer and specific instructions were needed directly to the class and in the follow up cover letter. Clarification was also needed regarding clean erasures and marking the scan card beginning at "D1" in the

demographics section. Results of the CHRI were returned and explained to those who completed the surveys.

F. DATA COLLECTION

Students were recruited from five Personal Health 110, two Introduction to Nutrition 100 and one class of Women's Health 425 during the end of the fall semester, 1989. Data were collected over a period of one week. Arrangements were made in advance with the instructors for the participation of the classes to solicit volunteers. At the beginning of a regular class period students were asked if they would like to volunteer for a research project. For consistency they were told the study was on college life events, feelings, and health practices. A computer printout of individual results of the College Health Risk Appraisal was offered to those who completed all three questionnaires. Coded packets were distributed in the separate classes to those who volunteered to participate in the study. Detailed instructions were given for answering the surveys as the subjects reviewed the contents of the packets with the researcher. Subjects were instructed to read the instruction sheet, sign the consent form, complete all instruments and return all materials at the next class meeting. All information remained confidential.

G. DATA ANALYSIS

Statistical treatment was designed to describe the total population and to test the hypotheses. Analysis was performed by the University of Tennessee Computing Center (UTCC) using SAS (1988) and SPSSX (1986). Descriptive statistics, Kruskal Wallis one way analysis of variance, two way analysis of variance, Newman-Keuls test for significance, Pearson's rho, and factor analysis were methods used for data analysis.

The CSLES was answered on scan sheets that were scored by the State Testing Center, University of Tennessee, and was stored on disk and hard copy. Levels of stressful college life events were determined by dividing the scores by thirds. This method was used by Cohen (1986), in a study of college undergraduates with the CSLES. This resulted in category scores of Low, 0-9, Medium, 10-15, and High, 16-112.

The BDI was hand scored which resulted in a total score for each student that indicated the level of depression. The intervals were 0-9, Nondepressed; 10-15 as Mildly depressed; 16-23, Moderately depressed; and 24-63 as Severely depressed.

For the CHRI the scan cards were entered into the computer and printouts were produced with individual total scores and subcategory scores. Scores were divided into

intervals of 180-200, Excellent; 160-179, Good; 140-159, Fair; and 120-139, Poor. The descriptors were given on the printout for each individual. Because there were scores below 120, the Poor category included 0-139 for the analysis. Responses for each question were stored on disk for further analysis.

A factor analysis was performed on the CHRI using Principal Components Analysis with Varimax rotation SAS (1988). Those items with loadings of $<.40$ were disregarded. This cut off point for factor loadings was used by Axelson (1979) and Axelson and Penfield (1983) and Libby (1986) and suggested by Kachigen (1986). A second factor analysis using Maximum Likelihood Analysis with Varimax rotation SAS (1988) was performed to determine the final factors to be used for analysis. An index score for each factor was determined by multiplying the score for each question that was retained by factor analysis from the CHRI by the corresponding factor loading and then summed for each factor. Factors were named according to the content of the retained items of the factors. Cronbach alpha was used to determine the reliability of the original CHRI and again to determine the reliability of the retained factors.

Descriptive statistics and frequency tables were calculated for all three variables.

Kruskal Wallis one way anova was used to determine the overall difference in health practices for the dependent variables. Kruskal Wallis was used since it does not require that data for each of the groups have a common variance (Ott, 1983). The analysis of variance was used to determine any significant difference in health practices for stressful college life events, depressive symptomatology and gender. Newman-Keuls was used to test for significance. The method of utilizing both Kruskal Wallis one way analysis of variance, analysis of variance and Newman-Keuls test for significance was used by Kilgore (1985).

Pearson's rho was used for the correlation analysis.

H. SUMMARY

This study sought to examine the relationship of stressful college life events and depressive symptomatology to health practices. The sample was taken from classes of students attending Personal Health, Nutrition, and Women's Health classes at the University of Tennessee, Knoxville, during the fall semester of 1989. The instruments used to determine the scores for the variables were; the College Health Risk Inventory, the College Student Life Events Survey and the Beck Depression Inventory. Statistical procedures used were descriptive statistics, Kruskal Wallis one way analysis of variance, two way analysis of variance,

Newman-Keuls test for significance, Pearson's rho, and factor analysis. Data were collected then analyzed using SAS (1988) and SPSSX (1986) by The Computer Center, University of Tennessee, Knoxville.

CHAPTER IV

ANALYSIS OF THE DATA

A. INTRODUCTION

This chapter presents the analysis of the data collected from 355 students at the University of Tennessee, Knoxville, during the fall semester of 1989. The variables examined were stressful college life events, depressive symptomatology, and health practices. A profile was developed to present 1) the results of the survey 2) to test the hypotheses and 3) to determine if there was a positive relationship between certain health practices, depressive symptomatology and stressful college life events.

This chapter includes: A. The Introduction, B. Sample Description, with frequency and percent of subjects by college, academic level, and gender, C. Profile Of Stressful College Life Events, Depressive Symptomatology and Health Practices, with descriptive data for all variables, tests of the hypotheses, results of factor analysis, and D. Summary.

Data were analyzed by the University of Tennessee's Computer Center, using SAS (1988) and SPSSX (1986). The level of significance established was $<.05$.

B. SAMPLE DESCRIPTION

Response Rate

After packets were collected from eight separate classes, instruments were examined for usable questionnaires. Table 1 presents the eligibility of instruments and percentage of participants. Of the 406 packets distributed, 356 were returned, one consent form was unsigned which resulted in 355 usable packets. The College Student Life Events Schedule (CSLES) was completed by 355 (99.71%) of the sample, 341 students (95.79%) completed the Beck Depression Inventory (BDI) and 311 students (87.39%) completed the College Health Risk Inventory (CHRI) so that they were usable for analysis. The largest percent was from 2 Nutrition classes (75.84%) with 5 Personal Health classes (21.91%) and 1 Women's Health class (1.96%).

Description of Respondents by College

Information of college enrollment by students was obtained by class enrollment rosters from instructors of the classes and from the Institute of Research and student records, UTK. College representation of the present study is compared with enrollment of fall, 1989 in Table 2. The largest representation was Human Ecology (31.8%). The college of Business (17.2%) was represented second highest. Third were University students (15.8%) which included

TABLE 1

FREQUENCY AND PERCENT OF USABLE QUESTIONNAIRES,
AND SAMPLE DESCRIPTION BY CLASS AND GENDER

Status	Frequency	Percent
Packets given out	406	100.00
Packets returned	356	87.68
<u>Returned usable instruments</u>		
College Student Life Events Schedule	355	99.71
Beck Depression Inventory	341	95.71
College Health Risk Inventory	311	87.39
<u>Classes participating</u>		<u>% of returned packets</u>
Nutrition (2)	270	75.84
Personal Health (5)	78	21.91
Women's Health (1)	7	1.96
<u>Eligible participants</u>		<u>% of usable instruments</u>
<u>Females</u>	228	64.20
<u>Males</u>	127	35.77

College Student Life Events Schedule=CSLES, stressful events
Beck Depression Inventory=BDI, depression
College Health Risk Inventory=CHRI, health practices

TABLE 2

COLLEGES REPRESENTED IN THE PRESENT STUDY
 COMPARED TO THE TOTAL ENROLLMENT
 FOR THE FALL SEMESTER, 1989*

Colleges Represented In present Study	Total College Enrollment*		Present Study	
	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>
Business	4368	17.9	61	17.2
Social Work	441	1.8	3	0.8
Human Ecology	890	3.6	113	31.8
Liberal Arts	4017	16.4	46	13.0
Education	1386	5.7	34	9.6
Veterinary**	594	2.4	9	2.5
Nursing	339	1.4	19	5.4
Communication	324	1.3	4	1.1
Engineering	2335	9.8	10	2.8
University***	8596	35.2	56	15.8
Total	23290	95.4	355	100.0

*Total enrollment 24390
 undergraduates--18770, graduates--5620

**Includes Agriculture and Veterinary

***Includes transit, special, undeclared, and non-degree students

transit, special, undeclared, and nondegree students. Fourth representation was from the college of Liberal Arts (13.0%) with the least number of students from Social Work. The percentage of Colleges represented in this study were similar to the 1989 enrollment for Business, Social Work, Veterinarian, and Communication.

Gender and Academic Level of Subjects

Table 3 describes the frequency and percent of subjects by gender and academic level. The largest representation of subjects were Sophomores (30.70%) with 36 males and 73 females. The least number of students was in the category Other (1.40%). These included students who were enrolled in classes but are not in a program and are unclassified. The second largest group were Juniors (28.45%) next Seniors (23.10%) then Freshmen (15.50%). For the total sample there were 127 (35.7%) males and 228 females (64.22%). There were no graduate males and only 3 graduate females in the sample.

C. PROFILE OF STRESSFUL COLLEGE LIFE EVENTS, DEPRESSIVE SYMPTOMATOLOGY AND HEALTH PRACTICES

Descriptive Statistics For The Total Sample

Descriptive statistics were calculated for college stressful life events (CSLES), depressive symptomatology (BDI), and health practices (CHRI) for the total sample and

TABLE 3

FREQUENCY AND PERCENT OF SUBJECTS
BY GENDER AND ACADEMIC LEVEL

	Males	Females	Total	Percent
Freshmen	18	37	55	15.50
Sophomore	36	73	109	30.70
Junior	42	59	101	28.45
Senior	30	52	82	23.10
Graduate	0	3	3	0.84
Other**	1	4	5	1.40
Total	127	228	355	99.99*
Percent of Total	35.77%	64.22%		

*Due to rounding

**Enrolled in classes but undeclared by degree

by academic level and gender. Table 4 presents descriptive statistics for the total sample on all three variables. Stressful college life events were divided into thirds; low, 0-9, medium, 10-15, and high, 16-112. There were 5 students with no stressful events, one with 112, and 8 with 1 event. The mode was 13 which included 24 students. The mean number of stressful life events for the sample was 13.49. This is higher than the findings of Cohen et al. (1986). Using the same instrument as the present study (CSLES) for a sample of undergraduate students, the authors reported a mean of 6.90.

With the highest possible score of 63 for depressive symptomatology, the mean for the sample was 7.47. This is in the nondepressed category, which is similar to the findings of Josvanger (1989). That study reported a mean of 7.08 for a group of graduate students at the University of Tennessee, Knoxville. In a group of undergraduate students from psychology classes, Kuiper et al. (1986) reported a mean of 5.90. In a validation study of the BDI in a university population, means were reported for all categories. For nondepressed, the mean was 3.94, mildly-depressed, 14.10, moderately depressed, 22.18, and severely depressed, 19.50 (Bumberry et al. 1978). Mean BDI scores were reported for depressed and nondepressed subjects in a college setting. For depressed subjects the mean was 14.29, for nondepressed, 3.44 (Vredenburg et al. 1988).

TABLE 4

DESCRIPTIVE STATISTICS FOR HEALTH PRACTICES,
 DEPRESSIVE SYMPTOMATOLOGY, STRESSFUL COLLEGE LIFE EVENTS
 AND SUBSCORES OF S/E/N¹ A/D/A² AND M/H³ FOR THE TOTAL SAMPLE

Variable	Highest Possible Score	Range	Mean	Standard Deviation
Health Practices	200	100-197	163.62	19.24
Depressive Symptomatology	63	0-50	7.47	7.15
Stressful College Life Events	112	0-112	13.49	9.83
<u>SUBSCORES</u>				
S/E/N	40	21-40	34.28	3.87
A/D/A	70	7-70	55.62	13.83
M/H	60	10-60	52.16	7.47

¹Smoking, exercise, nutrition

²Alcohol, drugs, accidents

³Mental health

The mean for health practices (CHRI) was 163.62 out of a possible 200, which tends to be near the lower end of the Good category, 160-180. The range was 100-197, standard deviation 19.24. Subscores were reported for subcategories S/E/N (smoking, exercise, nutrition), A/D/A (alcohol, drugs, accidents), and M/H (mental health).

Mean Scores for All Variables by Gender and Academic Level

After scores were calculated for the total sample, mean scores of all instruments were then calculated by gender and academic level (Table 5). The mean stressful life events score for Freshmen Females was 19.59, and for Sophomore Females, 15.66. There is a tendency for stressful college life events to decrease for higher academic levels.

For depression, Males had mean scores of 4.35 for Freshmen and 4.80 for Juniors. Female Freshmen scored 9.77, Sophomore Females 9.25, slightly above the nondepressed category. Higher mean scores were reported for men in a study of a university population. Lopez et al. (1986) reported mean scores of 8.05 for men and 7.08 for women. Gender was not found to be significantly associated with depression (Oliver et al. 1979) for university students and Hogg et al. (1986) reported gender did not predict depression for a similar population. The mean health

TABLE 5

MEAN SCORES FOR HEALTH PRACTICES (CHRI), BECK DEPRESSION INVENTORY (BDI),

COLLEGE STUDENT LIFE EVENTS SURVEY (CSLES) AND

HEALTH PRACTICE SUBSCORES BY ACADEMIC LEVEL AND GENDER

	CSLES ¹		BDI ²		CHRI ³		S/E/N ⁴		A/D/A ⁵		M/H ⁶	
	M	F	M	F	M	F	M	F	M	F	M	F
Freshmen	13.1	19.5	4.3	9.7	161.0	168.5	36.0	35.7	49.9	58.3	53.7	51.0
Sophomore	13.3	15.6	6.1	9.2	160.4	165.1	34.3	33.9	50.5	58.6	42.3	51.1
Junior	10.6	12.0	4.8	7.5	151.9	168.7	33.1	33.9	46.1	60.2	53.5	52.6
Senior	10.7	12.4	5.0	8.8	161.0	167.6	34.9	34.0	50.4	60.3	54.4	50.8
Graduate	-----	9.6	----	10.5	-----	158.5	-----	35.0	-----	53.0	-----	51.5
Other	3.0	12.2	----	10.8	184.0	170.3	39.0	34.7	66.0	58.7	52.0	58.0

¹ CSLES = 0-112² BDI = 0-63³ CHRI = 0-200⁴ Smoking, exercise, nutrition = 0-40⁵ Alcohol, drugs, accidents = 0-70⁶ Mental health = 0-60

practice scores ranged from 151.92 to 168.74, when described by gender and academic level.

Correlation of Variable Scores

Table 6 presents the intercorrelations between CSLES (college stressful life events), BDI (depression), CHRI (health practices), and subscores of the CHRI. CSLES scores correlated significantly with the CHRI ($p=.01$), negatively with M/H ($p=.0001$), and BDI ($p=.0001$). The CHRI correlated significantly with S/E/N (smoking, exercise, nutrition) ($p=.0001$), A/D/A (alcohol, drugs, accidents) ($p=.0001$), M/H (mental health) ($p=.0001$), and negatively with the BDI ($p=.0001$). S/E/N correlated significantly with A/D/A ($p=.0004$). M/H (mental health), correlated negatively with BDI ($p=.0001$). Caution must be taken in the interpretation of the significance of health subscores and health practice scores since the subscores are a part of the CHRI.

Frequency of Stressful College Life Events Categories

Table 7 describes the number and percent of students scoring in categories of high (16-112), medium (10-15), and low (0-9). Freshmen represented the largest percentage of the sample (47.27%) by gender and academic level to have a high number of stressful college life events. Sophomores were the second largest percent (44.44%) to score in the

TABLE 6

CORRELATION** OF COLLEGE STRESSFUL
LIFE EVENTS (CSLES), DEPRESSIVE SYMPTOMATOLOGY (BDI),
HEALTH PRACTICES (CHRI), AND HEALTH PRACTICE CATEGORIES

Variables	1	2	3	4	5	6
1. CSLES	---	.15*	.00	-.03	-0.31*	.34*
2. CHRI		---	.41*	.86*	.44*	-.32*
3. S/E/N			---	.20*	.09	-.08
4. A/D/A				---	.10	-.05
5. M/H					---	-.64*
6. BDI						---

* $p < .05$

**Pearson's r

- 1.=College Stressful Life Events
- 2.=Health Practices
- 3.=Smoking, exercise, nutrition
- 4.=Alcohol, drugs, accidents
- 5.=Mental health
- 6.=Depression

TABLE 7

FREQUENCY AND PERCENT OF STUDENTS SCORING IN CATEGORIES OF
STRESSFUL COLLEGE LIFE EVENTS BY ACADEMIC LEVEL AND GENDER

	Low	Medium	High	N
Freshmen				
M	7.00	5.00	6.00	18.00
F	11.00	6.00	20.00	37.00
%	32.73	20.00	47.27	100.00
Sophomore				
M	9.00	16.00	11.00	36.00
F	15.00	20.00	37.00	72.00
%	22.22	33.33	44.44	99.99
Junior				
M	15.00	21.00	6.00	42.00
F	24.00	18.00	17.00	59.00
%	38.61	38.61	22.77	99.99
Senior				
M	14.00	10.00	6.00	30.00
F	15.00	27.00	10.00	52.00
%	35.37	45.12	19.51	100.00
Graduate				
M	--	--	--	--
F	1.00	1.00	1.00	3.00
%	33.33	33.33	33.33	99.99
Other				
M	1.00	--	--	1.00
F	1.00	1.00	2.00	4.00
%	40.00	20.00	40.00	100.00
Total For Sample				
N	113.00	125.00	116.00	354.00
%	31.92	35.31	32.77	100.00

Low=0-9 Medium=10-15 High=16-112

high category. Scores tend to be the highest for Freshmen and decrease with academic level. Freshmen are making major changes and decisions about their life while being on their own in a new environment surrounded by peers. This may lead to a change in health practices and to future illness. Health practices have been reported to have a stress moderating effect on health and illness (Wiebe 1986) and (Pardine et al. 1983).

Stressful College Life Events as Ranked by Subjects

An item analysis of stressful college events produced the findings presented in Table 8. Of 112 items there were 47 items chosen by the sample to be stressful event. The items were ranked from the highest to lowest according to the number of students who perceived an item to be a stressful event within the past 12 months. The item "Had disagreement with friend", was chosen by the greatest number of students (54.4%). The item "Relationship with spouse became much worse or better" (3.4%) was the smallest percentage to be included in the ranking. Items that were chosen by less than 3.4% of the sample were not included. A review of the items selected to be stressful revealed six subcategories (Table 9). The category with the greatest number of items were those that had to do with relationships (16). The number of health items were second (11). School

TABLE 8
RANK ORDER OF STRESSFUL COLLEGE LIFE EVENTS
AS REPORTED BY STUDENTS

Rank	Stressful Event	Percentage of students indicating item caused stress
1.	Had disagreement with friend	54.5
2.	Increased demands for academic coursework	50.0
3.	Increased problems with academic work	46.9
4.	Decreased involvement with hobby	44.4
5.	Health of a close friend/relative much worse	40.7
6.	Friend/relative encountered serious trouble or failure experience	39.0
7.	Personal rejection by friend or lover	38.7
8.	Relationship of boyfriend/girlfriend became worse	37.7
9.	Learning a close friend/relative is different than you thought/ drugs, sexual behavior, criminal activity	35.9
10.	Significantly increased economic economic difficulties	35.3
11.	Separation from close friend due to moving	34.7
12.	Major change in work or school hours	34.7
13.	Significantly increased level of debt	33.6
14.	Serious conflict between members of your family	30.2
15.	Encountered increased difficulty with school regulations/facilities	29.9
16.	Death of a friend	25.4
17.	Negative personal encounter with a professor	25.1
18.	Worsening of personal health	24.3
19.	Decreased number of friends	24.0
20.	Separation from parents or siblings	23.7
21.	Serious conflict with roommate	23.4
22.	Organization failed to accomplish goals	22.0
23.	Terminated intimate relationship	22.0
24.	Worsening of parents' financial status	22.0

TABLE 8 (continued)

Rank	Stressful Event	Percentage of students indicating item caused stress
25.	Female, possibility of unwanted pregnancy/ Male, possibility of girlfriend/wife unwanted pregnancy	20.6
26.	Relationship with relative became worse	19.8
27.	Physical appearance became worse	19.5
28.	Increased use of alcohol	18.9
29.	Decreased amount of dating	18.4
30.	Involvement in an accident	17.5
31.	Loss of a pet through death or runaway	16.9
32.	Decreased sexual activity	15.8
33.	Physical health became worse	15.0
34.	Chose to terminate close relationship with friend	14.4
35.	Increased difficulty with job	14.4
36.	Death of parent or sibling	13.3
37.	Difficulty with landlord	12.7
38.	Victim of a crime	12.4
39.	Change of residence	12.1
40.	Began/increased use of illicit drugs	7.1
41.	Problem with the law	6.8
42.	Hospitalization of self	4.5
43.	Not accepted into social organization	4.2
44.	Withdrawal from a college/university	3.7
45.	Female-had an abortion/ male-girlfriend/wife had abortion	3.4
46.	Significantly improved relationship with boyfriend/girlfriend/close friend	3.4
47.	Relationship with spouse became much worse or better	3.4
Total number of items was 112		

TABLE 9

SUBCATEGORIES OF ITEMS RANKED
MOST FREQUENTLY AS STRESSFUL COLLEGE LIFE EVENTS

Subcategory	Rank	Percentage of students indicating item caused stress
<u>Relationships</u>		
Disagreement/friend	1	54.5
Friend/relative encountered trouble/failure experience	6	39.0
Personal rejection	7	38.7
Relationship/boyfriend girlfriend worsened	8	37.7
Learning close friend is different	9	35.9
Conflict/family	14	30.2
Decreased # of friends	19	24.0
Conflict/roommate	21	23.4
Terminated intimate relationship	24	22.0
Relationship/relative became worse	26	19.8
Decreased dating	29	18.4
Decreased sexual activity	32	15.8
Terminated close relationship	34	14.4
Not accepted into social organization	43	3.7
Improved a relationship	46	3.4
Relationship/spouse/ worse or better	47	3.4
<u>Health</u>		
Decreased involvement with hobby	4	44.4
Health/close friend/ relative/worse	5	40.7
Worsening/personal health	18	24.3
Possibly/unwanted pregnancy	22	20.6
Physical appearance/worse	27	19.5
Increased use of alcohol	28	18.9
Involvement in accident	30	17.5
Physical health/worse	33	15.0

Table 9 (continued)

Subcategory	Rank	Percentage of students indicating item caused stress
Began/increased use/drugs	40	7.1
Hospitalization/self	42	4.5
Had an abortion	45	3.4
<u>School/Academics</u>		
Increased demands for coursework	2	50.0
Increased problems with academic work	3	46.9
Major change/work/school hours	12	34.7
Difficulty/school regulations/facilities	15	29.9
Negative personal encounter/professor	17	25.1
Organization failed to accomplish goals	23	22.0
Withdrawal from college or university	44	3.7
<u>Death/Loss/Separation</u>		
Separation/close friend from move	11	34.7
Death of friend	16	25.4
Separation/parents/siblings	20	23.7
Loss/pet/death/runaway	31	16.9
Death/parent/sibling	36	13.3
<u>Financial Problems</u>		
Increased economic difficulties	10	35.9
Increased level of debt	13	33.6
Worsening of parents financial status	25	22.0
Increased difficulty with job	35	14.4
<u>Housing</u>		
Difficulty/landlord	37	12.7
Change/residence	39	12.1
<u>Violence/Law</u>		
Victim of crime	38	12.4
Problem with law	41	6.8

and academics was the third category with 7 items. Death, separation and loss included 5 items, financial problems, 5 items, housing 2 and violence, and the law, 2 items. In past studies academics were ranked the number one stressor for college students, failing an important exam was ranked as the highest stressor for 41% men of and 35% of women (Okun et al. 1986). Tests and finals were ranked as stressors for 52% and intimate relationships 37% in another sample (Archer et al. 1985).

Frequency of Depressive Symptomatology Categories

Results of the BDI (Table 10) indicate that of the 341 individuals surveyed, 239 (70.09%) were nondepressed and 102 individuals (29.91%) were in the depressed categories, mild (19.35%) moderate (7.33%) and severe (3.23%). Beck and Young (1978) reported 25% of college students were depressed. Oliver and Burkman (1979) reported 83% nondepressed and 17% depressed when depressed categories were combined. Freshmen tend to be more depressed than upperclassmen. Separated from family and familiar surroundings in a new environment while making life decisions, may lead to depression. Experimenting with risky health practices may be one coping mechanism students use for solving new life problems.

TABLE 10

FREQUENCY AND PERCENT OF STUDENTS SCORING IN CATEGORIES
OF DEPRESSIVE SYMPTOMATOLOGY BY ACADEMIC LEVEL AND GENDER

	Non	Depressed		Severe	N
		Mild	Moderate		
Freshmen					
M	15.00	1.00	1.00	---	17.00
F	21.00	6.00	5.00	3.00	35.00
%	69.23	13.46	11.54	5.77	100.00
Sophomore					
M	26.00	6.00	4.00	---	36.00
F	44.00	15.00	6.00	3.00	68.00
%	67.31	20.19	9.62	2.88	100.00
Junior					
M	32.00	8.00	1.00	---	41.00
F	42.00	11.00	3.00	3.00	59.00
%	74.00	19.00	4.00	3.00	99.99
Senior					
M	25.00	4.00	---	---	29.00
F	30.00	13.00	4.00	2.00	49.00
%	70.50	21.79	5.13	2.56	99.99
Graduate					
M	---	---	---	---	---
F	1.00	1.00	---	---	2.00
%	50.00	50.00	---	---	100.00
Other					
M	1.00	---	---	---	1.00
F	2.00	1.00	1.00	---	4.00
%	60.00	20.00	20.00	---	100.00
Total for Sample					
N	239.00	66.00	25.00	11.00	341.00
%	70.09	19.35	7.33	3.23	100.00
Non-depressed=0-9					
Moderate-depression=16-23			Mild-depression=10-15		
			Severe-depression=24-63		

Frequency of Health Practice Categories

Table 11 describes the number and percent of students who scored in the categories of health practices. Of the 311 subjects surveyed 70 (22.51%) scored Excellent, 40.51% scored good. For the total sample 126 Sophomores (40.51%) scored in the Good range. For the entire sample 77 (24.76%) and 38 (12.22%) scored in the Fair and Good ranges, respectively.

D. DIFFERENCES IN HEALTH PRACTICES FOR LEVELS OF STRESSFUL COLLEGE LIFE EVENTS AND DEPRESSIVE SYMPTOMATOLOGY

Research Question 1

Is there a significant difference in health practices for those students whose stressful life events were high as compared to those students whose stressful life events were low?

Null Hypothesis 1: There is no significant difference in the total scores of health practices, as measured by the College Health Risk Inventory, for those students whose stressful college life events were high, as measured by the College Life Events Schedule, when compared to those students whose stressful life events were low.

Kruskal-Wallis one way anova revealed (Table 12) a significant overall difference in health practices for levels of stressful college life events ($\chi^2=18.23$, $p=.0001$).

TABLE 11

FREQUENCY AND PERCENT OF STUDENTS SCORING IN HEALTH
PRACTICE CATEGORIES BY ACADEMIC LEVEL AND GENDER

	Excellent	Health Practices		Poor	N
		Good	Fair		
Freshmen					
M	3.00	3.00	7.00	2.00	15.00
F	9.00	15.00	9.00	1.00	34.00
%	24.49	36.73	32.65	6.12	100.00
Sophomore					
M	5.00	12.00	3.00	7.00	27.00
F	14.00	26.00	17.00	5.00	62.00
%	21.35	42.70	22.47	13.48	100.00
Junior					
M	5.00	12.00	9.00	14.00	40.00
F	14.00	25.00	14.00	1.00	54.00
%	20.21	39.36	24.47	15.96	100.00
Senior					
M	5.00	9.00	9.00	4.00	27.00
F	13.00	21.00	9.00	3.00	46.00
%	24.66	41.10	24.66	9.59	100.00
Graduate					
M	---	---	---	---	---
F	1.00	---	---	1.00	2.00
%	50.00	---	---	50.00	100.00
Other					
M	1.00	---	---	---	1.00
F	---	3.00	---	---	3.00
%	25.00	75.00	---	---	100.00
Total for Sample					
N	70.00	126.00	77.00	38.00	311.00
%	22.51	40.51	24.76	12.22	100.00
Excellent=180-200 Good=160-179 Fair=140-159 Poor=0-139					

TABLE 12

DIFFERENCES IN HEALTH PRACTICES (CHRI)
BY STRESSFUL COLLEGE LIFE EVENTS (CSLES) CATEGORIES

	<u>Stressful College Life Events Categories</u>			<u>χ^2*</u>	
	<u>Low</u>	<u>Medium</u>	<u>High</u>		
	<u>Mean Rank</u> N=103	<u>Mean Rank</u> N=109	<u>Mean Rank</u> N=99		
CHRI	184.43	151.92	130.91	18.23**	p=.0001
	Subscores				
S/E/N ¹	163.25	155.68	148.80	1.31	p=.52
A/D/A ²	168.00	150.18	151.56	2.52	p=.28
M/H ³	202.59	156.00	109.11	54.57**	p=.000

*Corrected for ties

**Significant at <.05

¹Smoking, exercise, nutrition²Alcohol, drugs, accidents³Mental health

Low=0-9

Medium=10-15

High=16-112

Statistical procedure: Kruskal-Wallis one way anova.

The data suggest that those who had low stressful life events had higher scores on health practices (mean rank 184.43, $N=103$). Subscore, M/H was significant with $\chi^2=54.57$, $p=.00$. This suggests when a person has a high level of stressful events, mental health decreases as well as overall health practices.

Table 13 reveals the results of analysis of variance conducted to determine if there were significant differences in health practices for gender and levels of stressful college life events. A two by three table revealed a significant difference for gender ($F=23.27$, $df=1/305$, $p=.0001$), life events ($F=8.42$, $df=2/305$, $p=.0003$), gender and life events ($F=3.62$ $df=2/305$, $p=.0278$). The results of the Neuman-Keuls test (Table 14) demonstrated a significant difference in health practices for the low level stressful life events ($Q_2=4.94$) ($Q_2=5.91$). Table 15 reveals females to have significantly higher health practice scores ($Q_2=4.21$). Therefore those students who have lower stress have better health practices, while females have better health practices for stressful college life events than males. Null Hypothesis 1 was rejected.

Research Question 2

Is there a significant difference in health practices for those students whose depressive symptomatology was high

TABLE 13

ANALYSIS OF VARIANCE OF HEALTH PRACTICE SCORES (CHRI)
 BY COLLEGE STRESSFUL LIFE EVENTS CATEGORIES (CSLES)
 AND GENDER

Source	Sum of Squares	Degrees of Freedom	Mean Squares	F
Gender	7583.61	1	7583.60	23.27*
Life Events	5487.34	2	2743.67	8.42*
Gender X Life Events	2362.00	2	1181.00	3.62*
Error	99396.28	305	325.88	
Total	114829.23	310		

*p=<.05

Statistical procedure: Two-way analysis of variance.

TABLE 14

DIFFERENCES IN MEANS OF HEALTH PRACTICE SCORES (CHRI)
FOR STRESSFUL COLLEGE LIFE EVENTS (CSLES)

Ordered means	158.94	162.59	169.20
158.94 (1)	-----	3.65	10.26*
162.59 (2)	-----	-----	6.61*
169.20 (3)	-----	-----	-----

$Q_2=4.94$ $Q_3=5.91$

*Significant mean differences at $<.05$

1=High stressful events, 16-112
2=Medium stressful events, 10-15
3=Low stressful events, 0-9

Statistical procedure: Newman-Keuls test for significance.

TABLE 15

MEAN DIFFERENCES IN GENDER FOR HEALTH PRACTICES (CHRI)
BY STRESSFUL COLLEGE LIFE EVENTS (CSLES)

Ordered means	156.95	167.27
156.27 (1)	----	10.32*
162.26 (2)	----	----
$Q_2=4.21$		

*Significant mean difference, $<.05$

1=Males

2=Females

Statistical procedure: Neuman-Keuls test for significance.

as compared to those students whose depressive symptomatology was low?

Null Hypothesis 2: There is no significant difference in the total scores of health practices, as measured by the College Health Risk Inventory, for those students whose depressive symptomatology was high, as measured by the Beck Depression Inventory, when compared to those students whose depressive symptomatology was low.

When health practices, the dependent variable, and depressive symptomatology were examined, Kruskal-Wallis one way anova (Table 16) revealed an overall significant difference in health practice scores ($X^2=45.00$, $p=.00$). Significance was found for the subcategory M/H (mental health) ($X^2= 89.28$, $p=.000$). As depression increased, total health practice scores decreased, as did mental health scores. A significant difference was revealed in the subcategory A/D/A (alcohol, drugs, accidents) ($X^2=14.68$, $p=.00$). Those who were nondepressed and severely depressed had higher scores for A/D/A. It is therefore, those students who are have mild or moderate symptoms of depression that increase the use of alcohol and drugs, and have an increase in accidents, not those who are severely depressed or when symptoms are nonexistent. The inconsistency of these findings agree with those of Libby (1986) whereas certain health habits were related to the

TABLE 16

DIFFERENCES IN HEALTH PRACTICE SCORES (CHRI)
BY DEPRESSIVE SYMPTOMATOLOGY CATEGORIES (BDI)

	<u>Depressed</u>				<u>χ^2</u> *	
	Non	Mild	Moderate	Severe		
	Mean Rank N=216	Mean Rank N=63	Mean Rank N=21	Mean Rank N=10		
CHRI	177.50	113.71	93.24	74.40	45.0**	p=.00
<u>Subscores</u>						
S/E/N ¹	162.02	136.44	148.76	148.95	4.20	p=.24
A/D/A ²	167.10	127.44	113.76	169.30	14.68**	p=.00
M/H ³	185.47	103.13	70.76	15.90	89.28**	p=.00
*Corrected for ties **Significant at <.05 ¹ Smoking, exercise, nutrition ² Alcohol, drugs, accidents ³ Mental health						
Non-depression=0-9 Mild-depression=10-15 Moderate-depression=16-23 Severe-depression=24-63						

Statistical procedure: Kruskal-Wallis one way anova.

choice of healthy foods while other health habits such as time and stress management were related to unhealthy food choices. These findings suggest that while the evaluation of overall health practices is both useful and needed, the evaluation of individual health practices (habits, behaviors) need to be evaluated and analyzed separately.

A two way analysis of variance for gender and depressive symptomatology for health practices was then carried out to test for significance between and within the groups. Table 17 shows a significant difference for gender ($F=25.71$, $df=1/303$ $p=.0001$), depression ($F=15.15$, $df=3/303$, $p=.0001$), gender and depression ($F=8.61$, $df=2/303$, $p=.0002$). The Neuman-Keuls test (Table 18) revealed a significant difference for the nondepressed group ($Q_2=9.77$, $Q_3=11.70$, $Q_4=12.90$). Table 19 reveals significantly higher health practice scores for females. When overall health practices are considered those students who are not depressed have better health practices. As depression increases health practices decrease, and females with no depression have more positive health practices. Therefore the Null Hypothesis 2 was rejected.

Additional Findings

When depressive symptomatology was the dependent variable for stressful college life events (Table 20) data

TABLE 17

ANALYSIS OF VARIANCE OF HEALTH PRACTICE SCORES (CHRI)
 BY DEPRESSIVE SYMPTOMATOLOGY (BDI)
 AND GENDER

Source	Sum of Squares	Degrees of Freedom	Mean Squares	F
Gender	7539.63	1	7539.63	25.71*
Depression	13332.81	3	4444.27	15.15*
Gender X Depression	5048.68	2	2524.34	8.61*
Error	88864.11	303	293.28	
Total	114785.23	309		

*p<.05

Statistical procedure: Two-way analysis of variance.

TABLE 18

DIFFERENCES IN MEANS OF HEALTH PRACTICE SCORES (CHRI)
FOR DEPRESSIVE SYMPTOMATOLOGY CATEGORIES (BDI)

Ordered Means	148.90	150.10	156.16	167.82
148.90(1)	-----	1.2	8.06	18.92*
150.10(2)	-----	-----	6.06	17.72*
156.16(3)	-----	-----	-----	11.66*
167.82(4)	-----	-----	-----	-----

$Q_2=9.77$ $Q_3=11.70$ $Q_4=12.90$

*Significant mean differences at $<.05$

1=Severely-depressed=24-63

2=Moderately-depressed=16-23

3=Mildly-depressed=10-15

4=Non-depressed=0-9

Statistical procedure: Neuman-Keuls test for significance.

TABLE 19

MEAN DIFFERENCES IN GENDER FOR HEALTH PRACTICES (CHRI)
BY DEPRESSIVE SYMPTOMATOLOGY (BDI)

Ordered means	156.95	167.27
156.27 (1)	----	10.32*
167.27 (2)	----	-----

$Q_2=4.00$

*Significant mean differences $<.05$

1=Males

2=Females

Statistical procedure: Neuman-Keuls test for significance.

TABLE 20

DIFFERENCES IN DEPRESSION SCORES (BDI)
BY STRESSFUL COLLEGE LIFE EVENTS

<u>Stressful College Life Events</u>				
	Low	Medium	High	
	<u>Mean</u> <u>Rank</u>	<u>Mean</u> <u>Rank</u>	<u>Mean</u> <u>Rank</u>	χ^2*
	N=110	N=119	N=111	
BDI	114.21	165.00	232.18	80.50** p=.000

*Corrected for ties

Low stressful event=0-9

Medium stressful event=10-15

High stressful event= 16-112

Statistical procedure: Kruskal-Wallis one way anova.

suggest that those students who had lower stressful college life events also had lower scores on depression ($\chi^2=80.50$, $p=.000$). This is consistent with other studies of stressful events and depression in both university and nonuniversity subjects (O'Neil & Mingie 1988) and (Kuiper et al. 1986).

Research Question 3

What health practices have a stronger correlation with stressful college life events and depressive symptomatology?

For this analysis a preliminary factor analysis performed on the CHRI using Principal Components Analysis with Varimax rotation SAS (1988) revealed 17 factors to be retained from the CHRI. Those factors were examined for loadings of $<.40$. The cut off point for factor loadings was used by Axelson (1979), Axelson and Penfield (1983), Libby (1986), and suggested by Kachigen (1986). This resulted in 7 factors which could be interpreted. Those items with no factor loadings of $>.40$ (Appendix F) were then disregarded and a second factor analysis was performed using Maximum Likelihood Analysis with Varimax rotation SAS (1988). This revealed 9 factors of which the last 4 had 1 or no loadings of $>.40$. Therefore five factors were retained for the final analysis all of which had at least 3 loadings of $>.40$ except one item. For Factor 3 question number 31 was retained with a loading of .39, since the content of the question was

closely related to the other items and the factor loading was the only one nearing the cut off point. Kachigen (1986) states that what constitutes a meaningful loading is based on the distribution of loadings both across and within factors. The remaining 4 factors had 1 or no loadings of $>.40$ and were not retained for analysis. The second analysis did not change the content of the factors. However the variance changed from 18.60 for the 7 retained factors of the first analysis to 49.94 for the 5 factors of the final analysis.

Table 21 reveals the factors, key statements, percentage of total variance and factor loadings of the retained factors. Factor 1, Living on the Edge, has questions regarding smoking cigarettes, marijuana, use of alcohol, driving while using alcohol and drugs; Factor 2, Risky Relationships, is concerned with sexual relationships, STD and pregnancy protection; Factor 3, Angry, Helpless-Hopeless, are statements on depression, violence, suicide. Factor 4, Faithfully Physical, is concerned with exercise and sports participation, and Factor 5, Fast, Fat and Salty are concerned with diet practices.

For this sample exercise and nutrition behavior were isolated as separate practices rather than S/E/N as established by the CHRI. Smoking factored with alcohol,

TABLE 21

FACTOR NAMES AND KEY STATEMENTS FOR HEALTH PRACTICES (CHRI)
FOR TOTAL SAMPLE WITH LOADINGS OF $>.40^*$

Factor	Key Statements	Variance	Factor Loading
<u>Factor 1 Living on the Edge</u>			
% of Total Variance 19.36			
<u>Q#</u>	<u>Key Statements</u>		<u>Factor Loading</u>
8	Smoke cigarettes		.47
16	Days/week have one drink		.93
17	# drinks/week		.80
18	Been drunk in last 3 months		.79
20	Think have drinking problem		.42
23	Smoke marijuana		.57
26	Drive car after drink or drugs		.63
<u>Factor 2 Risky Relationships</u>			
% of Total Variance 14.30			
<u>Q#</u>	<u>Key Statements</u>		
45	Have/have not had sexual intercourse		.89
46	Age began sexual intercourse		.83
47	STD risk/monogamous/many contacts		.70
48	Use condom/Aids protection		.73
49	Protect against pregnancy		.64
50	Method of birth control		.59
<u>Factor 3 Angry, Helpless-Hopeless</u>			
% of Total Variance 5.32			
<u>Q#</u>	<u>Key statements</u>		
31	In argument/physical violence/past year		.39
34	Been depressed lately		.57
38	Counseling/personal problem/last 2 years		.52
39	Serious personal losses/past year		.47
40	Life not work living/past 6 months		.75
42	Contemplated/attempted suicide/past year		.75

TABLE 21 (continued)

Factor	Key Statements	Variance	Factor Loading
--------	----------------	----------	----------------

Factor 4 Faithfully Physical Participants

% of Total Variance 3.08

<u>Q#</u>	<u>Key Statements</u>	<u>Factor Loading</u>
6	Regular vigorous exercise	.73
7	Regular recreational/sports activities	.71

Factor 5 Fast, Fat, and Salty

% of Total Variance 2.88

<u>Q#</u>	<u>Key Statements</u>	
11	Frequency/high fat foods	.76
12	Frequency/add salt/eat salty foods	.41
13	Frequency/high cholesterol foods	.60

*Question # 31 was included with loading of .39

Total variance of 5 factors=49.94

drugs and accidents. Sexuality and mental health remained separate.

Cronbach alpha calculated for the original CHRI resulted in .70 while a second Cronbach alpha for the 24 questions retained from the remaining 5 factors resulted in alpha .80.

Frequency of Responses of Factor Statements

Table 22 presents each factor with statement and percent of responses. Living on the Edge showed 73.4% never tried smoking. Students reported (24.2%) having 1-5 drinks per week, 16.5% have 6-12 drinks per week with one third reported having one drink at least 1-2 days per week. Risky Relationships showed that sexual partners (8.3)% may have other contacts, 7.6% have 2 or more partners. There are 22% who do not always protect against Aids and 19% that do not always protect against pregnancy. A review of Angry, Helpless-Hopeless showed 29.9% were involved in some kind of argument or physical violence in the past year. During the past year 50.8% were depressed, 19.9% still were. Those suffering a personal loss of one was 34.6% while 10.4% had two or more serious losses. Life was not worth living was felt often by 5.8%, 1.5% often thought about suicide, 1.2% had attempted it; 72.5% said they had never considered counseling. Faithfully Physical Participants revealed no

TABLE 22
FACTORS AND FREQUENCY OF RESPONSES FOR
FACTOR STATEMENTS

Factor	Q#	Key Statements	Responses	Percent Responded
<u>1 Living on the Edge</u>				
Q#	Key Statements			
8	Smoke cigarettes		Never tried	73.4
			Occasionally	10.4
16	Day/week/one drink		Don't/rarely drink	42.5
			1-2 days/week	33.3
17	# drinks/week		1-5/week	24.2
			6-12/week	16.5
18	Been drunk/last 3 months		3/more/times	27.2
20	Think have drinking problem		May/on occasions	12.3
23	Smoke marijuana		Tried it	24.2
			More/less/once a week	9.2
26	Drive car after drink/drugs		Yes	41.3
<u>2 Risky Relationships</u>				
Q#	Key statements			
45	Have/have not had sexual intercourse		Have had	76.8
46	Age began sexual intercourse		Between 15-17	35.2
			Between 18-20	31.2
47	Std risk/monogamous		Partner may have other contacts	8.3
			2/more partners	7.6
48	Use condom/Aids protection		No	42.8
			Not every time	22.0
49	Protect against pregnancy		Not always	19.0
50	Method/birth control		Pill	40.4
			Condom	22.6

TABLE 22 (continued)

Factor	Q#	Key Statements	Responses	Percent Responded
<u>3 Angry, Helpless-Hopeless</u>				
	<u>Q#</u>	<u>Key Statements</u>		
	31	Argument/physical violence/past year	Yes	29.9
	34	Depressed lately	Yes/o.k. now	50.8
			Yes/still am	19.9
	38	Counseling/personal problem/last 2 years	Never considered counseling	72.5
	39	Serious personal losses/past year	Yes, one	34.6
			two/more/serious	10.4
	40	Life not worth living/past 12 months	yes, sometimes	10.7
			yes, often	5.8
	42	Contemplated/attempted suicide/past year	often thought about	1.5
			made an attempt	1.2
<u>4 Faithfully Physical Participants</u>				
	<u>Q#</u>	<u>Key Statements</u>		
	6	Regular vigorous exercise	No	36.4
			3+/week	29.4
	7	Regular recreational/sports activities	No	60.0
			3+/week	17.7
<u>5 Fast, Fat, and Salty</u>				
	<u>Q#</u>	<u>Key Statements</u>		
	11	Frequency high fat foods	Almost every day	38.2
			3-5 days/week	35.5
	12	Frequency/add salt/eat salty foods	almost every day	23.5
			3-5 days/week	19.9
	13	Frequency/high cholesterol foods	almost every day	18.2
			3-5 days/week	31.5

regular exercise for 36.4% and 60% did not participate in regular recreational or sports activities. Fast, Fat and Salty showed 38.2% ate high fat foods almost every day, 35.5% 3-5 days per week. High cholesterol foods were eaten almost every day (18.2%) and 31.5%, 3 to 5 days per week. Salty foods were eaten almost every day for 23.5% and 19.9%, 3 to 5 days per week.

Null Hypothesis 3: There will be no significant correlation when certain health practices are correlated with stressful college life events and depressive symptomatology.

Index scores for each of the 5 retained factors were obtained for every subject by multiplying the response to each of the 24 questions by the corresponding factor loading and then summed. Correlation of the factors with individual scores on the CSLES and BDI are given in Table 23. Factor 3 Angry, Helpless-Hopeless correlated significantly with both CSLES ($r=.30$, $p=.0001$) and BDI ($r=.66$, $p=.0001$). Therefore the Null Hypothesis 3 was rejected.

E. SUMMARY

This chapter presented the process of data collection, data analysis, and findings. It included four sections: A. The Introduction, B. Sample Description with frequencies of college representation, academic level and gender, C. Profile of Stressful College Life Events, Depressive

TABLE 23

CORRELATION** OF FACTORS RETAINED FROM THE
 COLLEGE HEALTH RISK INVENTORY (CHRI)
 WITH STRESSFUL COLLEGE LIFE EVENTS (CSLES)
 AND THE BECK DEPRESSION INVENTORY (BDI)

	Factors				
	1	2	3	4	5
CSLES	.03	.03	.30**	-.01	.04
BDI	.05	.06	.66**	-.04	-.03

*p=.0001

**Pearson's r

1=Living on the Edge

2=Risky Relationships

3=Angry, Helpless-Hopeless

4=Faithfully Physical Participants

5=Fast, Fat and Salty

Symptomatology and Health Practices, with descriptive data of all three instruments, frequencies and percentages of students who scored in categories of the three variables, and an intercorrelation of six variables. College stressful life events were described as ranked by the sample and categorized. A factor analysis was performed on the CHRI. The following hypotheses were tested:

1. There is no significant difference in the total scores of health practices, as measured by the College Health Risk Inventory, for those students whose stressful college life events were high, as measured by The College Life Events Schedule, when compared to those students whose stressful life events were low.

2. There is no significant difference in the total scores of health practices, as measured by the College Health Risk Inventory, for those students whose depressive symptomatology was high, as measured by the Beck Depression Inventory, when compared to those students whose depressive symptomatology was low.

3. There will be no significant correlation when certain health practices are correlated with stressful college life events and depressive symptomatology.

The three hypotheses were rejected.

CHAPTER V

SUMMARY, FINDINGS, CONCLUSIONS
AND RECOMMENDATIONS

A. SUMMARY

The purpose of this study was to examine the relationship of college stressful life events, and depressive symptomatology to health practices in a group of college students at the University of Tennessee, Knoxville, 1989. More specifically, to determine 1) if there was a significant difference in health practices for levels of college stressful life events and 2) depressive symptomatology and 3) to determine what health practices had a stronger correlation to these variables.

Importance of the Study

Both health professionals and health educators realize that health is affected by environmental, social, and psychological variables. As well, it is recognized that the importance of appropriate health practices lead to optimum health and to a better quality of life. Knowledge alone, however, does not always motivate persons to develop healthy lifestyle practices. It is important as educators to understand the underlying factors which may lead a person

toward an unhealthy lifestyle. Two of these factors which have not been studied in conjunction with health practices as a whole are stressful life events and depression. The college student population, being a micro society, is susceptible to these interferences to optimum health. For this population college is a time of transition when habits are being formed that will affect the health for their adult life. The college environment may bring on stressful life events which are unique to college life. As well college students are at a high risk for depression, which in turn may lead to risky health practices. It could be that unhealthy practices may be ways of coping with stress.

Methodology

This study was carried out in the fall semester, 1989, at the University of Tennessee, Knoxville, with the cooperation of Nutrition, Personal Health, and Women's Health classes. Students volunteered and participated by answering three self report questionnaires, the College Student Life Events Survey, the Beck Depression Inventory, and the College Health Risk Inventory. Data were collected over one week from individual classes, then analyzed using SAS (1988) and SPSSX (1986) at the University of Tennessee Computing Center. Statistical analysis included frequency and percentages, Kruskal-Wallis one way anova, analysis of

variance, Neuman-Keuls test for significance, and Pearson's rho. A factor analysis was performed on the CHRI which resulted in 5 factors that were then correlated with college stressful life events and depressive symptomatology.

B. FINDINGS

Descriptive Findings

1. A total of 355 students participated in this study. There were 127 males, and 228 Females who represented 10 colleges of the University.

2. The average number of stressful college life events was 13.49 which is higher than Cohen (1986). That study reported 6.90 events when using the same instruments for that group of undergraduates. Freshmen Females had the greatest number of events (19.59) while Females had higher scores at all levels. Stressful items were categorized into 7 subcategories; Relationships, Health, School/Academics, Death/Loss/Separation, Financial problems, Housing, and Violence/The Law.

3. The mean score for depressive symptomatology was 7.47. For the total sample 70.09% were nondepressed and 29.91% scored depressed when mild, moderate and severe categories were combined.

4. The mean score for health practices was 163.62, with 40.51% who scored in the Good category. Females had higher scores than males.

5. A factor analysis of the CHRI revealed 5 factors that were retained for further analysis. They were; 1) Living on the Edge (alcohol and substance abuse) 2) Risky Relationships (sexual relationships and risks) 3) Angry, Helpless-Hopeless (violence, depression, suicide) 4) Faithfully Physical Participants (exercise) and 5) Fast, Fat and Salty (use of cholesterol, fatty food and salt).

Cronbach alpha for the original 50 questions of the CHRI was .70 while a second Cronbach alpha on the 5 factors resulted in .80.

6. Frequencies of the 5 Factors revealed;

a. Alcohol consumption consisted of 1-5 drinks/week (24.2%), and 6-12 drinks/week (16.5%). There were 41.3% who drove an automobile after drinking.

b. Sexual partners have other contacts (8.3%) and do not always protect from Aids (22.0%) and pregnancy (19.0%).

c. There were students who felt that life was not worth living (10.7%, sometimes and 5.8%, often) while 1.2% had attempted suicide and 72.5% never considered counseling.

d. There were 34.4% that did not participate in regular vigorous exercise and 60% did not participate in recreational or sports activities.

e. High fat (38.2%), high cholesterol (18.2%), and salty foods (23.5%), were reported eaten daily.

Results of the Hypotheses Tests

1. The Null Hypothesis 1 was rejected since there was an overall significant difference in health practices for levels of stressful college life events ($X^2=45.00$, $p=.00$) with significant difference for low stressful events ($Q^2=4.94$, $Q_3=5.91$). Females had significantly higher health practice scores for stressful life events than males. The interaction of gender and stressful college life events on health practices was significant.

2. The Null Hypothesis 2 was rejected. There was an overall significant difference in health practices for levels of depressive symptomatology ($X^2=45.00$, $p=.000$) with a significant difference for the nondepressed category ($Q_2=9.77$, $Q_3=11.70$, $Q_4=12.90$). There was a significant difference in gender with females having higher health practice scores than males. The interaction of gender and depression on health practices was significant. The results of individual health practices and overall health practices

were inconsistent, pointing to the need for separate analysis for individual health practices.

3. The Null Hypothesis 3 was rejected. Factor 3 Angry, Helpless/Hopeless, correlated significantly with depression and stressful college life events.

Additional Findings

When depressive symptomatology was the dependent variable for stressful college life events there was an overall significant difference in depression for levels of stressful college life events ($\chi^2=80.50$, $p=.000$). The data indicated that as stressful life events increased so did the level of depression.

C. CONCLUSIONS

Generalization of the results of this study to other colleges or groups should be limited. Based on the findings of 355 students who volunteered for the study the following conclusions were made:

1. As stressful college life events increase overall health practices decrease. Those students who have low stressful college life events had better overall health practices. When females experience stressful college life events they have better overall health practices than males.

2. As depressive symptomatology increases overall health practices decrease. Those students who are not depressed have better overall health practices. When females experience depression they have better overall health practices than males.

3. Individual health practices tend not to be related to stressful college life events or depression except for Factor 3, Angry, Helpless-Hopeless.

4. The College Health Risk Inventory is a useful instrument for appraising overall health practices of college students. However the inconsistency in the findings of this study points to the need to analyze and emphasize individual health practices. A total score may be misleading while specific health practice scores would be useful to the individual and health educator.

D. RECOMMENDATIONS

1. Further research at different college settings to study subgroups, and student versus nonstudents using random sampling.

2. Refine the CHRI by rephrasing or dropping questions that do not show high factor loadings for those factors or add additional items to factors 4 and 5 to increase the variance. Retest the new items and categories.

3. Add and program the words "code number" or "I D" at the top of the scan card used to answer the CHRI so that an identification number will appear on the printout and in the data set for each person's record.

4. Program the data from the CHRI so that records appear in columns readable by SAS or SPSS.

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APPENDICES

APPENDIX A

THE COLLEGE STUDENT LIFE EVENTS SCHEDULE

COLLEGE LIFE EVENTS SURVEY

The following questionnaire contains a list of events which may or may not have occurred in your life during the past 12 months. We would like you to tell us two things about each event:

- I. If the event occurred to you within the past 12 months and had POSITIVE effect on you, fill in the number ONE (1) space on your scan sheet.
- II. If the event occurred to you within the past 12 months and had a NEGATIVE effect on you, fill in the number TWO (2) on your scan sheet.
- III. If the event DID NOT OCCUR, WITHIN THE PAST 12 MONTHS, fill in the number THREE (3) on your scan sheet.

BE SURE TO ANSWER THIS SURVEY ON THE SCAN SHEET

1=positive

2=negative

3=did not occur

- 1. Terminated intimate relationship.
(boyfriend\girlfriend)
- 2. Marriage.
- 3. Became a parent.
- 4. Became engaged.
- 5. Negative personal encounter with a professor.

6. Marital separation or divorce.
7. Increased separation from children.
8. Reestablished old personal friendship.
9. Developed a good personal relationship with a professor.
10. Beginning or increased sexual activity.
11. Had a disagreement with friend (small or large disagreement).
12. Personal rejection by a close friend or lover.
13. Started a love relationship.
14. Increased amount of dating.
15. Separation from parents or siblings.
16. Separation from close friend due to moving.
17. Chose to terminate relationship with close friend.
18. Relationship with boyfriend or girlfriend became worse.
19. Decreased number of friends.
20. Significantly improved your relationship with boyfriend/girlfriend, or close friend.
21. Learning that a close friend/relative is very different than you thought (e.g., sexual behavior, involvement in serious drugs, criminal activities, etc.)
22. Relationship with relative (parents, siblings, etc.) became worse.

23. Relationship with relative (parents, siblings, et.) became better.
24. Began living with lover (excluding marriage).
25. Decreased amount of dating.
26. Relationship with spouse became worse or much worse.
27. Relationship with spouse improved.
28. Decreased sexual activity.
29. Difficulty with sexual performance.
30. Developed relationships with people who have new and interesting ideas or lifestyle.
31. Became an aunt or uncle.
32. Marriage of close friend or relative
33. Death of a friend.
34. Friend or relative encountered serious trouble or failure experience.
35. Parents' financial status became better or much worse.
36. Received a visit (or visited) family.
37. Worsening of parents' financial status.
38. Friend or relative had important positive experience.
39. Health of a close relative/friend became much worse.
40. Death of close relative (parent or sibling)
41. Parents separated or divorced.
42. Remarriage of parent.
43. Serious conflict between members of your family.
44. Significantly increased your level of debt.

45. Fired or lost job.
46. Quit job.
47. Received positive recognition at job (promotion, significant praise).
48. Major change in work or school hours.
49. Significantly increased economic difficulties.
50. Acquired a car.
51. Won a large amount of money (over \$10,000) in a lottery or sweepstakes.
52. Significantly improved your financial status.
53. Began a new job (part of full time).
54. Increased difficulty with a job.
55. Discharged from the military.
56. Improved mastery of academic material.
57. Significantly improved your course grades.
58. Transferred to a new school.
59. Began college for first time.
60. Encountered increased difficulty with school regulations or facilities.
61. Withdrawal from a college or university.
62. Completed an assignment for school.
63. Returned to school after prolonged absence.
64. Graduation from high school or junior college.
65. Applied to graduate or professional school.
66. Decided on a major or career.

67. Increased demands from academic coursework.
68. Increased problem with academic performance
(coursework, grades, GRE's, etc.)
69. Accepted into graduate or professional school.
70. Moved out of parent's home.
71. Moved back into parents's home after living away.
72. Change of residence.
73. Serious conflict with roommate.
74. Improved living conditions (e. g., Housing, roommate).
75. Difficulty with landlord/landlady.
76. Moved to a new city.
77. Improved physical appearance.
78. Physical appearance became worse or much worse.
79. Physical health became worse or much worse.
80. Began or increased use of illicit drugs.
81. Improved your physical health.
82. Hospitalization of self.
83. Improved your health/habits.
84. Worsening of personal health/habits.
85. Did not experience fatigue.
86. Decreased use of illicit drugs.
87. Female: Possibility of an unwanted pregnancy.
Male: Possibility of girlfriend/wife's unwanted pregnancy.

88. Female: Had an abortion
Male: Girlfriend/wife had an abortion.
89. Involvement in accident.
90. Began counseling or psychotherapy.
91. Began volunteer work.
92. Received recognition or award for achievement.
93. Victim of crime.
94. Problem with the law (arrested, detained, etc.).
95. Acquired a pet.
96. Major change in or renewed dedication to philosophy of life.
97. Selected for a leadership position in an organization.
98. Loss of a pet through death or runaway.
99. Traveled to a new and interesting place.
100. Increase in amount of leisure time.
101. Decreased involvement with hobby or task.
102. Joined a social organization.
103. Won an award at an international athletic competition.
104. Increased exposure to cultural or entertainment experiences.
105. Accomplished a goal in a hobby or recreational activity.
106. Major increase in religious commitment.
107. New or increased involvement in hobby or recreational activity.

- 108. Not accepted into a social organization you desired.
- 109. Organization you belong to (club, team, etc.) failed to accomplish an important goal.
- 110. Organization you belong to, (club, team, etc.) accomplished an important goal.
- 111. Increased use of alcohol.
- 112. Rejected by all graduate or professional schools you desired to attend.

APPENDIX B

ADDRESS FOR ORDERING
THE BECK DEPRESSION INVENTORY

The Psychological Corporation
Harcourt Brace Javonovich
555 Academic Court
San Antonio, Texas 78204

APPENDIX C

COLLEGE HEALTH RISK INVENTORY

College Health Risk Inventory

Directions: Mark answers on the ANSWER CARD only - please DO NOT write on this paper
Use a #2 pencil only, mark in the square completely, and erase any stray marks
Correct mark: ()  () Incorrect marks: (X)  

- D1. Which are you? (1) male (2) female
- D2. What academic level are you?
(1) freshman (4) senior
(2) sophomore (5) graduate student
(3) junior (6) other
- D3. What is your marital status?
(1) single (never married) (4) separated
(2) living together/not married (5) divorced
(3) married (6) widowed
- D4. Where do you live while attending classes?
(1) with my parents (4) off campus alone
(2) in a dorm (5) off campus with others
(3) in Greek housing (6) other
- D5. Generally speaking, what kind of grades do you get?
(1) the best grades (3) average grades
(2) above average grades (4) below average grades
- D6. Do you work (at a paying job) while attending classes?
(1) no (2) yes, part-time only
(3) yes, full-time
- D7. What is your race?
(1) Asian - Oriental (4) Native American Indian
(2) Black (Afro-American) (5) White
(3) Latin or Puerto Rican (6) Other
- D8. How old were you at your last birthday?
_____ yrs. (mark boxes on card)
- D9. How tall are you (without shoes)?
____ ft ____ in (mark boxes on card)
- D10. How much do you weigh (without clothes)?
____ lbs (mark boxes on card)
-
- ANSWER the rest of the questions on the
BOTTOM PORTION of the answer card.
-
1. Did either of your parents or your grandparents have high blood pressure?
(1) yes (2) no (3) I don't know
2. Did either of your parents or your grandparents have a heart attack before age 60?
(1) yes (2) no (3) I don't know
3. Is anyone in your immediate family diabetic (parents, grandparents, brothers or sisters)?
(1) yes (2) no (3) I don't know
4. Have you had your blood pressure checked in the past year?
(1) no (2) yes, it was "normal" (3) yes, it was "high"
5. Have you ever had your serum cholesterol measured?
(1) not that I can remember
(2) yes, but I can't remember what it was
(3) yes, and I was told it was under 200 mg%
(4) yes, and I was told it was between 200-250 mg%
(5) yes, and I was told it was over 250 mg%
6. Do you regularly do vigorous exercise?
(1) no (2) yes, 1-2 times a week (3) yes, 3+ times a wk
7. Do you regularly participate in recreational athletic activities or intramural sports?
(1) no (2) yes, 1-2 times a wk (3) yes, 3+ times a week
8. Do you smoke cigarettes?
(1) I never have (or only tried it) (4) Yes, less than a pack a day
(2) I did smoke, but quit (5) Yes, a pack or more a day
(3) I smoke only occasionally
9. Do you use "smokeless" tobacco?
(1) I never have (or only tried it) (4) yes, once or twice a day
(2) I did, but quit (5) yes, 3 or more times a day
(3) yes, but not every day
10. Are you currently on a diet to lose weight? (1) no (2) yes
11. How often do you eat foods high in fat content (salad oils, red meats, lunch meats, fried foods, baked goods, etc.)?
(1) almost every day (2) 3-5 days a wk
(3) less than 3 days a week
12. How often do you add salt to your food or eat foods high in sodium?
(1) almost every day (2) 3 to 5 days a week
(3) less than 3 days a week
13. How often do you eat foods high in cholesterol?
(1) almost every day (3) less than 3 days a week
(2) 3 to 5 days a week (4) not sure which are high cholesterol foods
14. How often do you eat breakfast?
(1) rarely, if ever (3) 3 to 5 days a week
(2) 1 to 3 days a week (4) almost daily
15. Have you ever been told by a medical professional that you might have an eating disorder such as bulimia or anorexia?
(1) yes (2) no
16. On the average, how many days a week do you have at least ONE drink of alcohol (beer, wine, liquor)?
(1) Don't drink, or only rarely (4) drink 3-5 days a wk
(2) drink at most once a week (5) drink almost daily
(3) drink 1-2 days a week or only on weekends
17. On the average, how many alcoholic drinks do you drink in a week?
(1) none, or less than 1 drink a week (4) 13 to 20 drinks a week
(2) 1 to 5 drinks a week (5) 21 or more drinks a week
(3) 6 to 12 drinks a week
18. Have you been drunk in the last three months?
(1) don't drink (3) once or twice
(2) drink, but haven't been drunk (4) 3 or more times
19. Did/do either of your parents have a drinking problem?
(1) no (4) yes, my mother
(2) I don't know (5) yes, both my parents
(3) yes, my father
20. Do you think that you might have a drinking problem?
(1) no, definitely not (3) only on rare occasions
(2) I may, but I'm not sure (4) I have a drinking problem
21. Do you take pills (NOT prescribed for you) - like amphetamines, barbiturates, tranquilizers, etc.?
(1) no, I never have (4) once a week or less
(2) I tried it but never regularly
(3) no, I did in the past, but not now

22. Have you ever used a needle to inject a non-prescribed drug?
(1) no, never (2) yes, only once (3) yes, more than once
23. Do you smoke marijuana?
(1) no, I never have (4) yes, once a week or less
(2) I tried it, but never regularly (5) yes, more than once a week
(3) no, I did in the past, but not now
24. Have you ever used cocaine (other than crack)?
(1) no, I never have (4) yes, once a week or less
(2) I tried it, but never regularly (5) yes, more than once a week
(3) no, I did in the past, but not now
25. Have you ever used crack?
(1) no, I never have (4) yes, once a week or less
(2) I tried it, but never regularly (5) yes, more than once a week
(3) no, I did in the past, but not now
26. Do you ever drive a car (or ride with a driver) after drinking or using drugs?
(1) no I don't (3) yes, as much as once a month
(2) yes, 1-2 times in the last two months (4) yes, as much as once a week
27. During the school year, about how many hours a week do you spend riding or driving in a car (or other motor vehicle)?
(1) less than 1 hour per week (3) 3-5 hours per week
(2) 1-3 hours per week (4) 6 or more hours per week
28. If the speed limit is posted at 55 mph, how fast would you typically drive?
(1) 55 or less (2) at most 60
(3) at most 70 (4) over 70
29. How often do you use seatbelts when you drive or ride in a car?
(1) always or nearly always (2) sometimes
(3) rarely or never
30. Do you ride a motorcycle?
(1) no (3) yes, sometimes wear a helmet
(2) yes, always wear a helmet (4) yes, never wear a helmet
31. In the past year, have you been involved in an argument or fight involving physical violence?
(1) no (3) yes, 2-3 times
(2) yes, once (4) yes, 4 or more times
32. Do you own or have easy access to a gun, rifle, or other firearm?
(1) yes (2) no
33. Do you feel a great deal of pressure from academic demands (classes, tests, papers, etc.)?
(1) no, not really (2) yes, a little (3) yes, a lot
34. Have you been depressed lately?
(1) no (2) yes, but I'm OK now
(3) yes, and I still am
35. Do you have close friends at school?
(1) yes, several (2) yes, 1 or 2 (3) not really
36. When you have a problem that is really bothering you, which are you most likely to do?
(1) talk it over with a friend (2) talk it over with family
(3) keep it to myself
37. Which of the following best describes your love life?
(1) was in a relationship but it ended within the past 6 months
(2) have not been involved with anyone for at least 6 months
(3) involved with someone at this time, but not very satisfied with the relationship
(4) just starting to get involved in a relationship
(5) involved with someone and happy with the relationship
38. In the past 2 years have you undergone counseling for a personal problem?
(1) no, and I've never considered going to counseling
(2) I've thought about seeking help, but haven't done so yet
(3) I've been to counseling, but am not going now
(4) I'm going to counseling now
39. In the past year, have you had any serious personal losses (broke up with boy or girl friend, parents got divorced, someone close to you died, etc.)?
(1) no (2) yes, one serious loss
(3) yes, two or more serious losses
40. In the past six months have you had feelings that life wasn't worth living?
(1) yes, often (3) yes, but only rarely
(2) yes, sometimes (4) no
41. Has anyone in your family committed suicide?
(1) yes (2) no (3) not sure
42. In the past year, have you contemplated or attempted suicide?
(1) no I haven't
(2) I've thought about it, but not seriously
(3) I've thought about it seriously once or twice
(4) I've thought about it often
(5) I've made an attempt at suicide
43. Do you know how AIDS is contracted and how it is prevented?
(1) not really (2) I think so (3) I know or sure
44. Which of the following reflects your sexual preference/sexual orientation?
(1) exclusively heterosexual (male/female)
(2) exclusively homosexual (male/male or female/female)
(3) bisexual (male or female)
(4) I'm still somewhat uncertain about my sexual orientation
45. Please mark one of the following:
(1) I have never had sexual intercourse (skip remaining questions)
(2) I have had sexual intercourse
46. At what age did you begin having sexual intercourse?
(1) before age 15 (4) between 21 and 24
(2) between 15 and 17 (5) age 25 or older
(3) between 18 and 20
47. The risk of sexually transmitted disease (STD) is based on your sexual activity. Which of the following is descriptive of you?
(1) I am involved in an exclusive (monogamous) sexual relationship
(2) I have a sexual relationship with one person, but he/she may be sexually involved with someone else also
(3) I have two or more sexual partners
48. Do you (or your partner) use a condom to protect against AIDS?
(1) no (2) yes, but not every time (3) yes, always
49. If you are currently involved in a relationship that includes sexual intercourse, do you (or your sexual partner) do something to protect against pregnancy?
(1) yes, I/we ALWAYS use some method
(2) yes, but not always
(3) no, we mostly take our chances (skip Q50)
(4) no, I/we wouldn't mind getting pregnant now (skip Q50)
(5) I (or my partner) have had a vasectomy/tubal ligation (skip Q50)
50. If you are protecting against pregnancy, what method do you most OFTEN use (Mark ONLY one)?
(1) the "pill" (4) a chemical method (cream, foam, suppository, or sponge)
(2) a condom
(3) a diaphragm (5) natural family planning or rhythm

APPENDIX D

SUBJECTS' CONSENT FORM

Code number _____

CONSENT FORM

The purpose of this study is to obtain information about stressful life events, feelings, and health practices of college students. You will be asked to complete 3 written questionnaires outside of your class period. The BDI will take about 10 minutes, the College Life Events Survey will take 20-25 minutes, and the College Health Risk Inventory will require about 15 minutes to complete. These questions are not intended as a quiz or test, but are designed to collect information for the research project.

All information obtained from this study will remain confidential. We are looking at results from a collective number of students, not individuals. Our hope is that information obtained from this study will be helpful in understanding the needs of college students and to develop effective ways of coping and forming positive health practices.

THIS IS TO CERTIFY THAT I, _____,
(please print)

HEREBY AGREE TO PARTICIPATE AS A VOLUNTEER IN THIS STUDY AS AN AUTHORIZED PART OF THE RESEARCH PROGRAM OF THE UNIVERSITY OF TENNESSEE, KNOXVILLE, UNDER THE DIRECTION OF DR. BILL WALLACE AND JOYCE EDELEN, GRADUATE STUDENT IN HEALTH EDUCATION.

My part in this study has been explained to me and I understand my participation in it:

- that my responses will remain confidential with regard to my identity.
- that my participation or non-participation in this study will not adversely affect my grade in this class.
- that I may withdraw anytime.

(volunteer's signature & date)

(researcher)

Project Director
Dr. Bill C. Wallace
1914 Andy Holt Ave.
The University of Tennessee
Knoxville, Tn 37996-2700
Phone number: 974 5041

Researcher:
Joyce E. Edelen
Address
Phone number

You may contact one of the above numbers for further questions.

APPENDIX E

COVER LETTER AND INSTRUCTION SHEET
FOR SUBJECTS

Dear Participant:

Thank you for agreeing to volunteer in this research project. Your time and effort in answering these questionnaires will be of value to yourself as well as to all college students. You will receive a computerized printout of the results of the College Health Risk Appraisal which gives you a picture of your total health at this time, and suggestions on how to improve your lifestyle so that you may have a healthier, happy life.

Before you begin there are a few things that are very important to this research project.

1. Do not discuss the questions with anyone else, before you complete or while you are filling out the questionnaires.
2. Use a #2 pencil, and be sure to answer all the questions.
3. Read all directions at the top of the surveys before beginning.

The ORDER in which you answer these questionnaires is very important.

FILL OUT THE COLLEGE LIFE EVENTS SURVEY FIRST

1. The SCAN SHEET is for answering the COLLEGE LIFE EVENTS SURVEY.
2. On the SCAN SHEET fill out your grade level and sex only, everything else is filled out for you.

FILL OUT THE COLLEGE HEALTH RISK INVENTORY SECOND

1. The small SCAN CARD is for answering the College Health Risk Inventory.
2. Be sure to begin marking your answers on the scan card at the number "D1" space, not at the number "1" space, that is half way down the card.
3. Be sure all erasure marks are clean.

FILL OUT THE BECK DEPRESSION INVENTORY LAST

1. Circle the responses that you feel best describes your feelings
2. Do not add your score on the last page.

RETURN ALL MATERIALS IN THE ENVELOPE THANKS!

APPENDIX F

QUESTIONS FROM THE COLLEGE HEALTH RISK INVENTORY

WITH FACTOR LOADINGS $< .40$

QUESTIONS FROM THE COLLEGE HEALTH RISK INVENTORY
WITH FACTOR LOADINGS <.40

Question #

9. Do you use smokeless tobacco?
(1) I never have (or only tried it)
(2) I did, but quit
(3) yes, but not every day
(4) yes, 3 or more times a day
21. Do you take pills (NOT prescribed for you) - like amphetamines, barbiturates, tranquilizers, etc.?
(1) no, I never have
(2) I tried it but never regularly
(3) no, I did in the past, but not now
(4) once a week or less
24. Have you ever used cocaine (other than crack)?
(1) no, I never have
(2) I tried it, but never regularly
(3) no, I did in the past, but not now
(4) yes, once a week or less
(5) yes, more than once
27. During the school year, about how many hours a week do you spend riding or driving in a car (or other motor vehicle)?
(1) less than 1 hour per week
(2) 1-3 hours per week
(3) 3-5 hours per week
(4) 6 or more hours per week
32. Do you own or have easy access to a gun, rifle, or other firearm?
(1) yes
(2) no
33. Do you feel a great deal of pressure from academic demands (classes, tests, papers, etc.)?
(1) no, not really
(2) yes, a little
(3) yes, a lot
35. Do you have close friends at school?
(1) yes, several
(2) yes, 1 or 2
(3) not really

APPENDIX G

CORRESPONDENCE

Joyce Bush
1511 Laurel Ave.
Apartment #1
Knoxville, Tn
37916

May 31, 1989

Irwin N. Sandler
Department of Psychology
Arizona State University
Tempe, Arizona
85287

Dr. Sandler:

This is a request for permission to use the College Student Life Events Schedule in a research project. I am in the process of writing a proposal for my dissertation.

The topic of the research will be life events, and depression related to health practices in a college student population. It will be used at the University of Tennessee, Knoxville, in the fall of 1989.

I talked with one of your colleagues by phone concerning my request who suggested I write for your permission to use the instrument.

Thank you for you help in this matter, I look forward to hearing from you and collecting the data in the fall.

Sincerely,

Joyce E. Bush
Joyce E. Bush

*You have my
permission to use
the scale.*
Irwin Sandler

Healthtech

Healthtech Industries

401 783 5432

Inc.
711 Main St
Warefield B
02880
401 783 5432

May 24, 1989

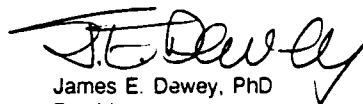
Joyce E. Bush
1511 Laurel Avenue
Knoxville, TN 37916

Dear Joyce:

This letter represents my formal permission to use the College Health Risk Inventory developed by Healthtech Industries, Inc. I would appreciate receiving a copy of your dissertation abstract upon completion. If there is any way that I can assist you in your efforts, please do not hesitate to contact me.

I am also enclosing a copy of an article that may be of interest to you.

Sincerely,



James E. Dawey, PhD
President

JED/med

ENCLOSURE

VITA

Joyce Edward Edelen was born in Bardstown, Kentucky where she received her early education at Bethlehem Academy. She entered Union College, Barbourville, Kentucky as a non-traditional student and in three years completed her Bachelor of Science degree in Health and Physical Education with a minor in Nutrition.

After teaching elementary physical education in Florida for three years where she was involved in a pilot program, she entered graduate school at Eastern Kentucky University. She worked as a teaching assistant, and completed a Master's degree in Education with emphasis in Home Economics Education and Nutrition, and a Bachelor of Science degree in Vocational Home Economics in 1978. While working toward these degrees she accepted a position with Jefferson County Public Schools, Louisville, Kentucky in 1973, where she served as teacher-coordinator for Jefferson County Adult Education in a special program for adults in the areas of nutrition and fitness, personal development, family upgrading and consumer awareness, and coordinated with community agencies. She also worked with the Home/Hospital program for a special agency where she taught displaced children and students of separated families.

She worked with Spalding College, Louisville, Kentucky as assistant coordinator for Continuing Education, where she advised adults entering Week-end College and coordinated a program with the American Management Association.

In 1984 she accepted a teaching assistantship with the Division of Health, Leisure, and Safety at the University of Tennessee, Knoxville, where she taught Personal Health and Wellness, Elementary Methods in Health Education, School and Community Health and First Aid. In 1990 she received an Ed.D in Health Education with emphasis in Community Health and Nutrition, from the University of Tennessee, Knoxville.

She has worked as a volunteer with the American Cancer Society as chairman of the Speaker's Bureau and assisted in the Adult Education Program; The Women's Pavilion, Norton Hospital, assisting in their education and promotional programs; and Public Radio, Louisville, Kentucky.

She is the mother of one son and grandmother of two granddaughters.